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Oct 28. mag

California Cultivator

Published Weekly — One Dollar a Year

Los Angeles — January 7, 1909 — San Francisco

California Gardens in Midwinter

Courtesy Out West Magazine.

Investigate

The Famous "Success" Incubator

Sold on Free Trial to Anyone Anywhere
130, 260, 340 and 612-Egg Size

This high class incubator before you buy any other at any price. We own our own building, pay no rents, and can undersell by many dollars all other dealers in incubators and brooders. All incubators are made from first grade clear redwood, wool padded tops, double walls, lined with heavy felt paper, hot water heating system, 14 oz. cold rolled copper heater, special long lever automatic self regulator. Our machines will hold an exact even temperature, no watching them at night. See them hatching thousands of chicks here any time. Our heater is better than any other used on any incubator at any price. Automatic in admitting fresh air. Investigate this machine and save many dollars and get the best at any price. Free 32-page book contains lectures on chick raising, etc. It's free, send for it today.

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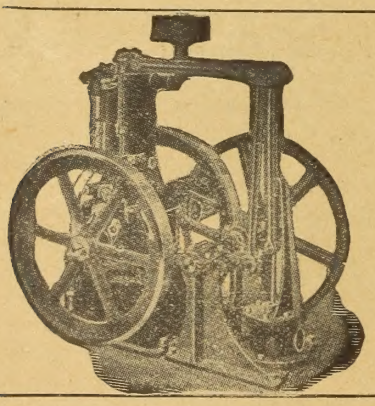

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Just the thing to run the feed cutter, the pump, the churn, the grinder, or anything on the ranch. It's well named

The Little Wonder

Write or call on

Wm. Gregory
602 No. Main St. Los Angeles, Cal.

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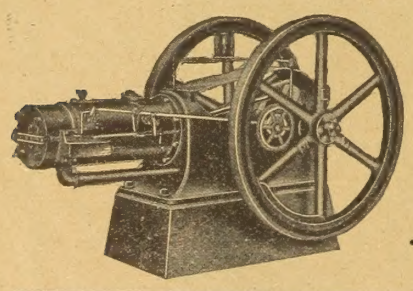

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a given height with one gallon of No. 2 distillate than our competitors. Send for Bulletin No. 12 and see how we do it.

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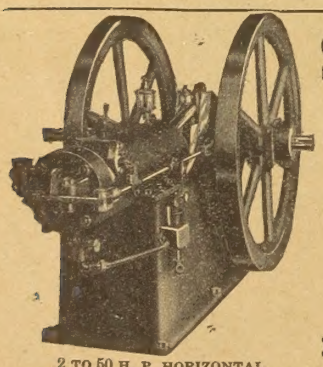

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STOVER GAS ENGINES

The simplest and the best. We have had long experience installing pumping plants. We know our business. See us before you buy. 2 to 50 H. P.

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For spraying your trees and vines. Hundreds of carloads of these goods have been used on the Pacific Coast, giving the best of satisfaction for Scale, Scab, Red Spider, Red Scale, Apple Mildew, Grape Mildew, in fact, all kinds of insects and fungi that prey upon California Citrus and Deciduous Fruits.

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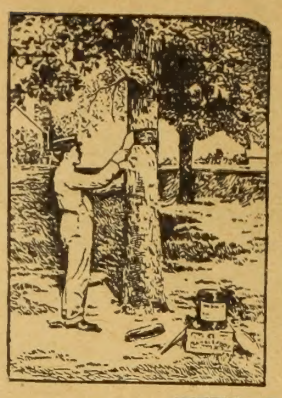

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Price 25c per lb. Liberal discount on quantities. The only safe and effective banding preparation. Send for testimonials

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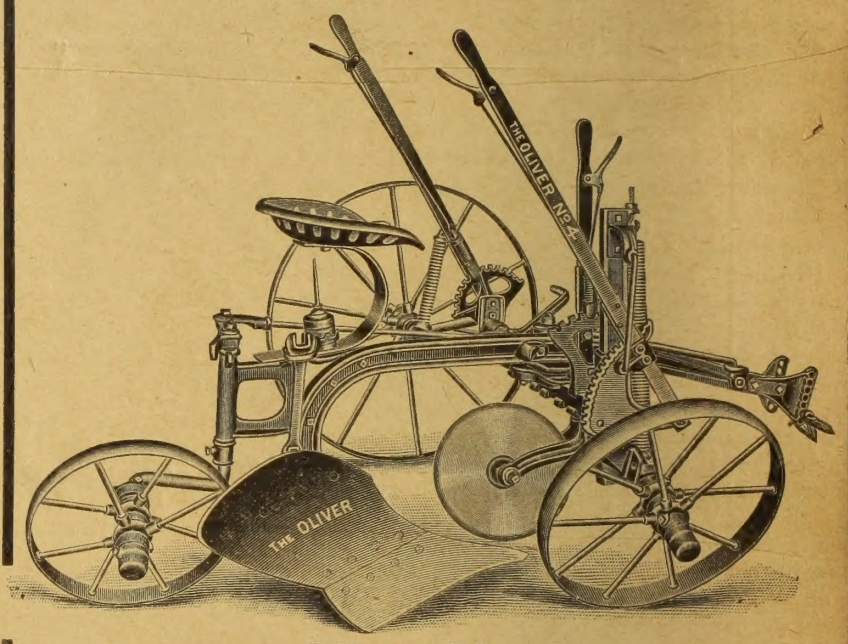

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A new and thoroughly practical Sulky Plow.

Best suited to the needs of Beet and Bean Raisers because of its strength and because it does more perfect deep plowing than any other plow.

Write for detailed information about this Sulky Plow and about the full line of Oliver Steel and Chilled Walking and Gang Plows.

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Is built right, Works right. Runs in light wind. Has ball bearing turntable and outer thrust. Easy mill to set up and take care of. Built upon honor.

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Pumps for Irrigation, Road Sprinkling, Electric Motors, Gasoline Engines, Spraying, Whitewashing; Wine Pumping, Wind Mills, Hand and Power Use, Steam, etc.

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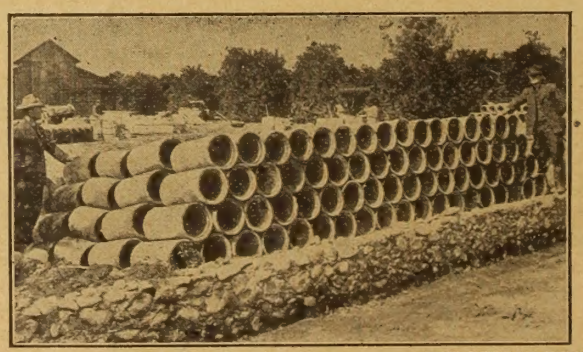

From photograph showing amount of

Ten-Inch Pip

made by four men fro 10 bbls. of cement in hours — 280 two-fo joints, or 560 feet. Th pipe was made with t

"K T" Mould

An equal amount not be made with a other tools in the sa period of time. Wr

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California Cultivator

Vol. XXXII—No. 1 Los Angeles, California, Thursday, January 7, 1909 Subscription $1 a Year

The Pear Thrips Problem in California

Read Before the State Fruit Growers' Convention at Sacramento

By A. L. QUAINTANCE

In Charge of Deciduous Fruit Insect Investigations, Bureau of Entomology, Washington, D. C.

THE present critical situation in deciduous fruit culture in the San Francisco bay region in California due to the presence of the pear thrips (Euthrips pyri) furnishes but another illustration of how an injurious species previously obscure and unknown to science may suddenly become abundant and destructive and literally threaten the existence of a well founded industry, representing an investment of many millions of dollars.

The pear thrips came prominently into notice in the Santa Clara valley in the spring of 1904. The blasted condition of the buds and flowers of various fruit trees attracted the attention of several orchardists, and specimens of the "new insect" were brought to the attention of the State Horticultural Commissioner. The importance of the insect as an enemy of deciduous fruits was promptly recognized by the Horticultural Commissioners of Santa Clara county, and the County Entomologist, Mr. Dudley Moulton, at once began a careful investigation of its injuries and life history, and conducted certain experiments with remedial measures, the results of which were published in 1905 in a bulletin from the office of the State Horticultural Commission.

Upon his employment by the Bureau of Entomology, in the spring of 1906, Mr. Moulton prepared an article on the pear thrips giving the essential facts concerning the insect as determined in his earlier investigations and also additional information subsequently obtained. This paper was issued in 1907 as part 1 of Bulletin 68 of the Bureau of Entomology, and furnished a fairly complete account of the insect's biology.

Field Station.

The continued and increasing losses brought about by the ravages of the pear thrips led to the establishment by the Bureau of Entomology of a field station in deciduous fruit insect investigations, which was located at San Jose, in the Santa Clara valley, and Mr. Moulton, under the writer's direction, was placed in immediate charge. An additional man, Mr. Chas. T. Paine, was also detailed for the work in California in the fall of 1907. Both of these men, natives of the state, and trained entomologists, were regarded as exceptionally well equipped for the work, especially by reason of familiarity with local horticultural conditions. Practically all of the attention of Messrs. Moulton and Paine has been given to the pear thrips, and much additional information has been accumulated.

During the spring of 1908, extensive practical experiments were carried out, and a vigorous campaign of work is planned for the spring of 1909. The thrips situation has been carefully investigated by the writer in 1907 and also in 1908, and Dr. Howard made a personal investigation of conditions in the thrips infested territory during September of the present year. The Bureau at Washington is therefore closely in touch with the work, and everything possible within the limits of its appropriation will be done to bring about as speedily as possible the practical control of the pest.

Distribution.

The pear thrips at present occurs quite generally in the Santa Clara valley, and is present in orchards in Contra Costa county, in the neighborhood of Concord; in Solano county, in orchards in the vicinity of Suisun; in Yolo county and also in Placer county in the neighborhood of Newcastle. The insect is probably present throughout this general region of the state, and will unquestionably further spread, though perhaps not rapidly, unless introduced in localities in ways other than by its natural diffusion. It is also quite probable that the insect will eventually make its appearance in other states on the Pacific Coast and that it may make its way to Eastern orchards would not be at all surprising. The pear thrips, therefore, is an insect of more than local interest, and its satisfactory control is a matter of importance for the fruit growing industry as a whole.

Character of Injury and Habits of Thrips.

No remedial work with an insect may be undertaken with a reasonable hope of success, except as based on a knowledge of its life history. The small size of this insect has made it an unusually difficult one to study carefully. Nevertheless, Mr. Moulton has been able to determine many facts concerning the behavior of the insect, covering its entire life cycle from year to year, and his painstaking work is much to be commended.

The adult thrips put in its appearance on the trees late in February and early in March, at which time such fruits as almonds, apricots and peaches are coming into bloom. From the middle to the last of March and early in April the insects are out in maximum numbers, when prunes, cherries and pears are in full bloom. The thrips attack the swelling buds, working down between the bud scales and by feeding upon the essential organs of the young flower, or other parts, soon destroy it. In the case of some fruits, like the almond and peach, these may suffer comparatively little injury if they are not attacked until the period of full bloom. The thrips feed upon the nectar in the calyx-cup and the little fruit itself may thus escape. The insect is worse on pear, prune and cherry as it is most abundant during the period of swelling of buds, and of blooming, and, furthermore, the fruit buds are developed in clusters. Buds of these fruits are, in extreme cases, so injured that they wither and die before opening, and even after the blossom has expanded the little fruit and other parts may be attacked and prospects for a crop quite destroyed. Leaf buds are also attacked in the same way and the destruction of these may be so general that little foliage is put out, and it may be some months before a natural growth is developed. The small size of the thrips, and its habit of working within the buds and flowers is calculated to prevent its detection by fruit growers, and much thrips injury has doubtless been attributed to the effect of cold. On the other hand, the insect has been charged with injury properly due to unfavorable weather conditions.

A Bit of Its Life History.

The adult female thrips (no males are known) deposits her eggs in almost any tender part of the plant, as the fruit and leaf stems, the mid-rib and veins of the leaves, etc., by the aid of a saw-like ovipositor, with which a slit is cut into the tissues and the egg inserted within. The egg hatches in the course of about four days, and the young thrips wiggles its way out, and soon begins to feed on the tender tissues of the plant. These larvae were at first very small, and when full grown are scarcely one-twelfth of an inch in length. They prefer secluded places as on the under surface of tender leaves, the growing tips and under the protection of the dried up calyx before it has been thrown off by the swelling fruit. In this latter situation they feed upon the young and tender fruit, and in the case of prunes and pears, the injured places develop as the fruit grows, into scabby spots greatly disfiguring its appearance and resulting in serious deformities, especially with pears. This injury by the larvae to the fruit which may have escaped the adults, is very important, and in badly infested orchards a large per cent of the remaining crop may be thus injured. The scabby spots on prunes do not shrink uniformly with the rest of the skin and stand out very conspicuously, materially reducing the grade.

When full grown, which requires about three weeks, the thrips larvae make their way to the ground and penetrate the soil, to a depth from 3 to 10 or 12 inches, depending apparently upon whether this is soft or hard, the majority in tilled orchards going down some 6 to 10 inches. Below the soil each larvae constructs for itself a little earthen cell of sufficient size to accomodate its body, and here the insect remains until the following spring, to appear as an adult during the flowering period of the trees, as already stated. In the late fall and winter, however, the larvae transforms to the pupa stage, and in this condition is much more helpless than as larvae. It is not known how long the pupal stage continues but it is probably several weeks. There is thus but one generation of the thrips each year, and they spend much the greater part of their time safe below the surface of the soil.

Some Characteristics.

The mouth parts of the thrips present an interesting difference from those of insects of other orders, and a knowledge of these organs is of importance to fruit growers. There is a snout-like projection, armed with several spines. Within the snout are stiff setae, or stylets, with which the epidermis of the plant surface is first penetrated, and then by aid of the bristles on the rim of the snout the opening is enlarged, the tissues lacerated, and the juices thus liberated, sucked up for food. The thrips thus feeds, practically, on the interior portion of the plants, and can not be destroyed with arsenical or similar poisons.

Food Plants.

Practically all deciduous fruits are attacked, as almond, apple, apricot, cherry, peach, pear, plum and prune. The insect is also recorded from fig, grape and walnut, and such indigenous plants as Madrona, wild California lilac and poison oak.

* * *

How May Thrips Be Controlled?

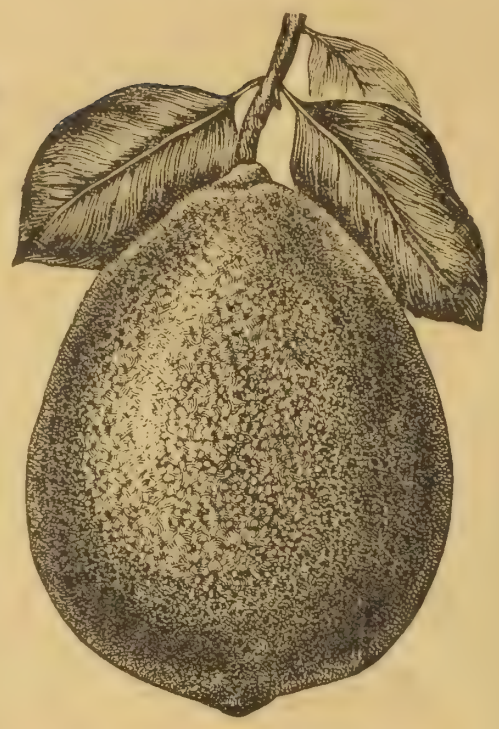
Unfortunately this question cannot be satisfactorily answered at the present time. From the resume of the life history of the pest above given, the extreme difficulty of controlling the adults with sprays is evident. At first thought it might appear useless to try such methods; nevertheless, considerable time has been given to testing various sprays, as to their possible efficiency against the adults, and also against the larvae. During the past spring Mr. Moulton has tested, at different strengths, the following:

Whale Oil Soap; Black Leaf Tobacco Extract; Tobacco Decoction from stems boiled in water: Kerosene Emulsion; Distillate Oil; Crude Carbolic acid Emulsion; Cresote Oil; Lime

Continued on Page 6.

The Wonderful New

Ponderosa Lemon



This truly ever-bearing variety produces lemons of remarkable size. The trees are strong and healthy, easily cultivated and enormously productive. They bloom and bear fruit when quite young. The flowers are pure white, with yellow stamens, and as fragrant as orange blossoms. The beautiful foliage is thick, glossy, and resists insect attacks admirably. A tree of this sort, covered with masses of flowers and large, handsome lemons is a sight to behold. The lemons are excellent for culinary purposes. Usefulness and beauty are combined in a high degree in this remarkable plant. Send for catalogue.

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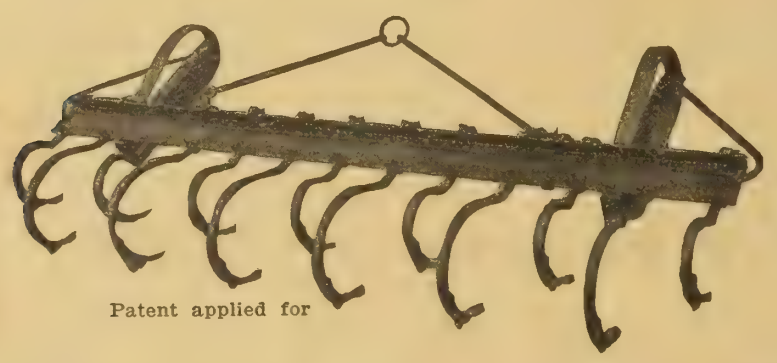

Patent applied for

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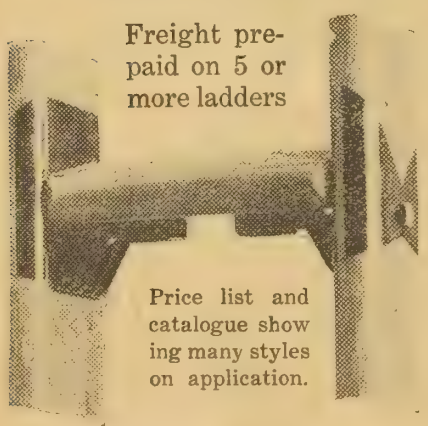

Freight prepaid on 5 or more ladders

Price list and catalogue showing many styles on application.

A profit to you on every hour's use. Long lived. Acknowledged to be the

Lightest Strongest and Best

Our bid for your patronage is this. For cash with order,

Straight Ladders 25c per Ft.

E. A. Meacham - Riverside, Cal.

Save Time—With the Brewster Picking Sack—Save Fruit

A new method sack—invented and perfected by lifelong growers. Eminent orchardists pronounce it perfect. Those who have tried it say they would not be without it. Actual tests show that a man can pick twenty-five per cent more fruit with it and with greater ease.

Sack forms semi-circle about picker's body—is supported by straps over both shoulders and held tight by belt around body. The picker can thus work with ease either on ground or ladder. When full, it does not extend below the hips.

A great feature of the Brewster Sack is the patent gate (see illustration) WHICH PRACTICALLY ELIMINATES BRUISING. Simply unfasten a hook—the gate drops—and the fruit can be quickly but very gently poured out.

The sack holds as much fruit as the old style sack.

Made in two grades.

Regular picking sack grade, sent express prepaid for $1.50.

Special extra quality—that will outlast two ordinary picking sacks—express prepaid $1.75.

Sierra Madre Sack Co., Sierra Madre, Cal.

We want reliable men in every locality to demonstrate this sack and act as our agents.

TENTS

Fumigating and Lemon Curing Tents our Specialties

Irrigating Hose, all sizes. Prices and Samples quoted upon application. Write your wants Wagon Covers, Hay Covers, and Canvas Covers of Every Description.

Mellus Bros. & Co

Phones—Home, F 4871; S. S., Main 8500
250 East Fifth St., Los Angeles, Cal.

With the Citrus Growers

CITRUS TARIFF.

THROUGH the courtesy of Gen. L. A. Cooke, retired, and now located at Lemon Grove, San Diego County, we have a copy of the San Antonio Daily Express containing items regarding citrus imports from Mexico. These items show plainly that our only menace is not along the eastern seaboard, but nearly at our own doors. Possibly the Ways and Means Committee will "deal kindly with the fruit-growing industry of Mexico;" but it appeals to us that protection is a principle invoked to aid Americans, rather than the producers of another country. We believe the Ways and Means Committee have the same idea.

The items in the Express follow:

"George N. McDonald, successful fruit grower of Tampico, is in the city and is negotiating with local commission firms for the sale of a carload of grape fruit and tangerines which has just reached the city. Mr. McDonald was formerly an attorney of Washington, but has devoted the last seven years toward giving the 'Burbank' touch to this and other fruit he is propagating.

"Though extremely modest as to his accomplishments as a wizard, the fruit itself gives evidence that scientific methods will in time make the sister Republic a very formidable competitor of any fruit-growing region of the United States.

"'We will be able to do this,' said Mr. McDonald, 'in spite of the import duty of one cent a pound we are compelled to pay, for our fruit will be worth a cent a pound more by reason of its quality. Though we have been laboring under great difficulties, Americans in Mexico are becoming so numerous that the fruit growers are getting some encouragement in the hope that both governments will be able shortly to effect a reciprocal agreement that will encourage us to even greater efforts in fruit production. Now that the agitation of tariff measures is on in Washington, we indulge the hope that some relief will come to us if Mr. Taft is really in earnest about a genuine revision of the tariff. Mexico admits free of duty all live stock to be used for breeding purposes and we feel that the United States should see her way clear to deal kindly with the fruit-growing industry of that country.

"'Fruit is a necessity to the poorer classes and means much to them from the standpoint of health. This is the class you know we have with us always. Free entry for the necessities where possible is what brings prosperity and happiness. I have sold fruit in San Antonio for four years, but this is my first shipment by rail, and I hope the results will justify the adoption of the quicker route, my former shipments having been by water to Galveston.'"

. . . . . .

Another, marked "Special Telegram to the Express," is as follows:

"Monterey, Mexico, Dec. 21.—Montemorelos, a thriving orange-growing center near this city, is supplying the entire holiday trade of Mexico with choice oranges, in addition to which hundreds of carloads are being shipped to the United States."

In the market reports on fruits we note the following:

"Among the arrivals of the day was a carload of grape fruit and tangerines from the Tampico district in Mexico, which demonstrates a very creditable effort on the part of the fruit growers down there to compete with California and Florida. The grape fruit is quoted at $5.50 per box, and ranges in size from 46s to 64s, and the tangerines at $3.50 per box."

The question for our politicians is do they wish American laborers to work for the same price as Mexican laborers.

ORANGES TO EASTERN MARKET BY WATER.

Some weeks ago the Cultivator spoke of a trial shipment of oranges and lemons to New York via the American-Hawaiian S. S. Co., the Tehuantepec railway and steamers to Atlantic points. regarding this effort in an interview in a San Diego paper Senator Wright says: "The report on harbors," "deals with the possibilities of commercial development of the various harbors of the state. This is for the purpose of showing the necessity of improved harbor facilities such as the construction of seawalls and wharves. In this connection we used one of the American-Hawaiian line steamers for the purpose of determining whether or not San Diego could be made an important shipping point for transporting oranges and lemons to the East. A short time ago a number of boxes of oranges and lemons were bought in the open market of San Francisco and were then shipped by water and the isthmus to New York. The fruit had originally been picked in Southern California before going to San Francisco.

"The oranges arrived in New York in good condition," continued Mr. Wright, "but the lemons were somewhat damaged. However, had the oranges and lemons originated in San Diego, and had they been picked for that purpose, the lemons as well as the oranges would have arrived at their destination in a perfectly sound condition.

"The American-Hawaiian line, as you know, calls here on the northbound run from the isthmus and demands a guarantee of 200 tons before the steamers will call at San Diego on the south run. This, in my opinion, could easily be accomplished. The last steamer from San Francisco took 77 tons of citrus fruit of San Diego origin. If oranges and lemons of Southern California can be shipped east via San Diego and the isthmus, this port may become in the future the greatest shipping point in Southern California, and citrus fruits may be an important part of the cargoes of these large steamers."

Big Saving to Growers.

When such a development is attained it will mean a big saving to growers and shippers in the cost of freight. The freight paid to railroads for shipments of fruits made from Southern California last year aggregated $14,000,000. The estimated cost of shipping the same by water is estimated at 33 1-3 per cent less.

PRE-COOLING PLANT.

The Santa Fe Railroad will begin at once the construction of a great refrigeration plant at San Bernardino. Regarding this great plant the Sun of that city says:

The plant will be located on the Santa Fe's freight cut-off from Colton leading into the west end of the new freight yards, just to the southwest

Nitrate of Soda

Nitrate Sold in Original Bags

NITRATE AGENCIES CO.

64 Stone Street, New York
Keyser Building, Baltimore, Md.
36 Bay Street, East, Savannah, Ga.
305 Baronne Street, New Orleans, La.
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Holcombe & Co., 24 California Street
San Francisco, Cal.
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Address Office Nearest You

Orders for All Quantities Promptly Filled—Write for Quotations

YELLOW MONEY AND YELLOW FRUIT

Are a pair that travel together in good shape in an orange or lemon grove. Especially is this true if you will plant only the robust and true-to-name

Citrus Trees

grown by the San Dimas Citrus Nurseries, the largest growers of choice orange and lemon nursery stock in the world. No branch of horticulture offers better inducements in the way of profits, nor is there one more alluring to the person contemplating commercial fruit culture. For the past twenty years we have supplied the leading growers with their trees, and hope to number many more among our friends and patrons. Orders now being booked, subject to future delivery. Send for book on

"The Citrus Fruits: Historically, Horticulturally, Commercially."

Beautifully illustrated, and some 20,000 words of text. Price 25 cents.

The San Dimas Citrus Nurseries

R. M. Teague, Proprietor
San Dimas, California

Trifoliata Orange Seed

$5.00 per Gallon

Fresh and California Grown

Morris & Snow Seed Co.
425 So. Main St., Los Angeles

SECOND HAND PIPE AND CASING

All our pipe and casing has newly cut threads with new couplings attached and dipped in asphaltum. Guaranteed good as new. Prompt delivery on carloads or less. Small orders receive same attention as large ones. All sizes of pipe, also fittings and valves.

WEISSBAUM PIPE WORKS
133 Eleventh St., San Francisco

AGENTS WANTED

GOPHER DOPE to exterminate gophers, ground squirrels, rats, mice.

KILLS A BUG Moths, Mosquitoes. Bed Bugs Ants, Roaches, Fleas, Lice and Mites on Fowls. Disinfectant and Germicide.

PUROLINE A Powerful Antiseptic and Deodorizer. Odorless, non-poisonous. For use in hospitals, homes, public institutions, boards of health and ranches. ***B. & G. Disinfecting Co.,*** 417 Laughlin Building, Los Angeles, Calif.

of town. The site was purchased more than a year ago and the stakes recently set for the building and for sidings to accommodate the handling of building material. On the ground is a large well which will be used as a water supply.

When the plant is completed all citrus fruits and vegetable shipments handled by the Santa Fe for eastern points, will be pre-cooled at the local plant. Shipments from all the various branch lines will be constructed here and sent out in train loads after being cooled and iced. It will have a capacity of pre-cooling and icing a trainload of 32 cars every four hours or over 200 cars in 24 hours.

The building will be 140 by 1000 feet in size, the walls being 40 feet in height, the construction throughout being of solid concrete, reenforced with steel. The machinery to be installed in the plant will have a weight of three and a half million pounds and is one of the most expensive type.

The ice-making portion of the plant will have a capacity of manufacturing 225 tons daily and the refrigeration plant can handle 600 tons daily. There will be a four-track platform for the handling of cars for pre-cooling and icing. An ice storage capacity of 25,000 tons will be included in the plant.

BANANA CULTURE AT HAWAII.

But few realize that there are over sixty known varieties of bananas. Some of these differ in character as much as some of the different varieties of apples, yet the ordinary consumer imagines that all bananas are alike. Hawaii is said to have something over forty distinct varieties, most of which have been introduced by the whites. Some are extremely delicate and delicious, while others are used only for cooking purposes. There is scarcely a house, lot or homestead in Hawaii which has not a clump or two of bananas. These grow practically without care.

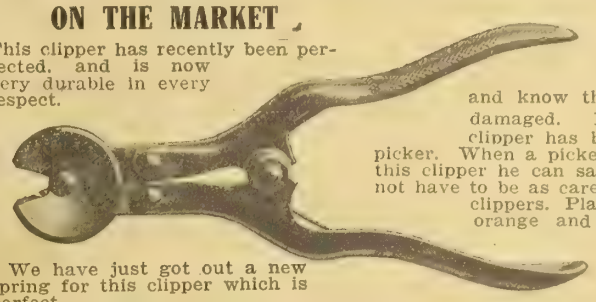
The irregularity of the steamship service has been of serious handicap to the development of the banana industry but the employment of steamers equipped for carrying the fruit in ventilated decks has in late years added a stimulus to the business. The United States Experiment Station plantings indicate that under proper selection of plants and cultivation the production of fruit per acre can be increased several hundred per cent under the antiquated methods in general use among the Orientals. The improved shipping facilities indicate that Hawaii promises to become an important banana producing section.

The Pacific Coast and especially in the Northwest is the field in which Hawaii can best market her fruits. At present Washington, Oregon and British Columbia are paying at wholesale $2,000,000 a year for bananas. These are imported from Central America by way of New Orleans and shipped by rail some 3000 miles. Honolulu is about 2400 miles by water from Seattle. A big field is opened in Hawaii for the cultivation of the choicer varieties. At present the mainland is supplied practically with one variety known as the Jamaica of Bluefield. The reason for this is that it stands transportation well. At the same time it is of fair quality and yields heavily. There are a number of more delicate varieties superior in flavor to the kind usually marketed, but these do not carry so well. Hawaii also produces large quantities of coarse fruit, which are known as cooking bananas. While the use of this product is confined largely to tropical countries it is believed that in time it will be recognized as an important product throughout the world.

When Hawaii was discovered only a limited number of food plants grew on the island. Even then bananas furnished a very important part of the daily diet of the natives, but since the Island has been visited by whites, banana cultivation has been wonderfully increased. Originally when the natives had control of the Island a very rigorous and despotic system was in vogue throughout the archipelago which prevented women from eating bananas under pain of death. It was not until several years after white inhabitants had become residents of the Island that this edict was revoked. —Chicago Produce News.

THE ONLY ABSOLUTE SAFETY ORANGE AND LEMON CLIPPER ON THE MARKET.

This clipper has recently been perfected, and is now very durable in every respect.



We have just got out a new spring for this clipper which is perfect.

An orange grower can send this clipper, with an inexperienced picker, into his grove and know that his fruit will not be damaged. By an actual test this clipper has been proven to be a fast picker. When a picker becomes accustomed to this clipper he can save time, because he does not have to be as careful as he does with other clippers. Place this clipper on top the orange and cut the stem, and the stem will not have to be cut the second time. One picker picked 98 boxes of oranges with this clipper in 9½ hours, the second day he had used the clipper. A Japanese picker picked 120 boxes of oranges with this clipper in one day. A great many orange growers are using this clipper now, and they say, after using this new clipper, they would not think of sending any of the old style clippers into their groves. How can an orange grower afford to send an old style clipper into his grove when, after a thorough investigation, it was found that the old style clippers were causing from 40 to 60 per cent of the orange decay? This clipper costs you very little more than the old Wiss clipper, and not as much as some other clippers. We are pleased to send a sample clipper, for trial, to any one, with the understanding that they return the clipper to us if they are not satisfied with it, after giving it a good test. We make special prices on these clippers in lots of a dozen or more. This clipper will cut the stems right down to the rind, and it is positively impossible to damage the fruit with it.

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W. A. T. STRATTON, Nurseryman, Petaluma, Cal.

THE PEAR THRIPS PROBLEM

Continued from Page 3.

Sulphur Wash; Arsenate of Lead Molasses Spray; Arsenate of Lead and Crude Oil Emulsion.

Of these several substances none proved especially effective except the proprietary tobacco extract, and the distillate emulsion. Mr. Moulton concluded that by timely and thorough use of either of these sprays, directed especially against the larvae on the under surface of the leaves, these can be destroyed in such numbers as to result in protection of the crop for the succeeding year. The possibility of doing this will be fully tested during the spring of 1909, and the work will be done under the most favorable conditions for success. To be effective, however, spraying operations must be done on a large scale to prevent possible overflow of the insects from untreated orchards. It is planned to carry out spraying operations in Santa Clara county, Contra Costa county, and, if possible, in Solano county. Spraying for the thrips, should this prove effective, will offer, however, several practical difficulties. Two or three applications of sprays will be necessary, perhaps, and in so short a space of time as to tax the resources of the orchardist to accomplish the work.

In the Soil.

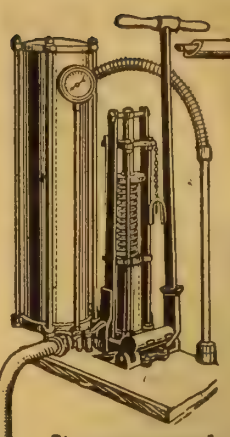
The destruction of thrips during their long stay in the soil, if it may be accomplished, would be a much more practicable solution of the problem. Mr. Moulton and Mr. Paine during the past summer have been carefully investigating various points connected with subterranean life of the insect, as to their distribution in the soil; the effect of cultivations as possibly disturbing them in their cells, and also the possibility of destroying them by protracted submergence in water, as might be practiced in irrigation. This work thus far has necessarily been confined to the insect in the larval stage, but will be begun against the pupae as soon as these appear in the early winter. While the results thus far are not especially hopeful as against the larvae, it is not improbable that a method will be found effective against the more helpless pupae. In addition to cultural methods, irrigation, etc., the possible effectiveness of various fertilizers, chemicals and fumigants will be tried and it is hoped that some practical expedient will be developed from the coming season's work.

More Help Coming.

An additional man has already been detailed to the thrips work in California, and another will be dispatched early in December. The four men thus assigned will be able to carry out experiments and demonstrations on a larger scale than has been possible heretofore.

Is It a Native.

The sudden appearance in California of the thrips in such destructive numbers suggests that it has been introduced from abroad and the opinion has been expressed that the species is a native of Southeastern Europe. The genuine Euthrips, to which the pest belongs, is represented in the United States by several species, and also in Europe, so that nothing may be inferred as to its nativity from the distribution of its nearest relatives. A search of European literature does not reveal a thrips of similar character and habits with Euthirps pyri. There is the possibility that it is a native of California, as its present occurrence in such destructive numbers finds parallel among numerous other native American insects. The Thripdae, as a group, on account of their small size and mode of existence, are relatively free from the attack of parasitic and predaceous insect enemies. The principal enemy of thrips, in the United States, aside from unfavorable weather conditions, is the insidious flower bug, Triphleps insidosus, which searches the flowers and buds and foliage of various plants impaling the thrips on its beak and sucking out the body juices. The alimentary canal of the thrips is often infested with nematode worms, but it is not certain that these are especially injurious. A fungus has been found by Mr. Moulton which, accord-



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It means much to the fruit grower who realizes the need for effective spraying, but deplores the ordinary pump with its exhausting labor, its unsatisfactory spray and its continual clogging and bother. This spring is found only in

Bean Magic Spray Pumps

It would be found in others, but the Bean Patents prevent it. This spring divides the work, permitting the operator to do half the work at each stroke of the handle. And he works against but half the pressure indicated on the gauge. It saves just one-third the labor. Two sizes of Bean Magic pumps; both have Bean patent spring, non-clogging ball valves, and other exclusive features.

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Grafted trees only. Better than Franquette or Mayette

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1 and 2 year old grafts

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S. H. Taft, Sawtelle, Cal.

ing to his observations, is parasitic upon the thrips, destroying them in considerable numbers. On the whole, it is not considered probable that any natural enemy of the thrips may be discovered, or will appear in orchards which will be of much use in bringing about its subjugation. It is likely, also, that the thrips will disappear of its own accord, and that its control must be affected by definite preventive measures as in the case of other well established pests, such as the codling moth, scale insects, etc.

TREES OUT OF ORDER

IT often happens that trees show signs of decline when they should be in their prime, adjoining trees being in full vigor and producing large crops of fine fruit. If such trees do not reveal root trouble or any other visible ailment and do not respond to a liberal supply of stable manure and water during the growing season, try a liberal dose of nitrate of soda. If this fails, dig the tree out and make fire wood of it. This is Prof. L. H. Bailey's advice. We would add, if the orchard is four or more years old, do not replace it with another tree unless the orchard be walnut, fig, or orange. It is useless to try to grow short lived varieties under such conditions, or trees of low valuation. There is no gain in doing so except where it pays to fertilize heavily and irrigation is easily and conveniently done. The extra room given to the adjacent trees will enable them to produce enough more, to more than make up what would be regained by replacing with a new tree and waiting for it to come into bearing. We have seen replacing tried many times with negative results. We refer to deciduous trees other than fig and walnut though apples may be included with them. It will pay to fill in vacancies in citrus groves if sufficient fertilizer and moisture are constantly present within reach of the newly planted tree and those within reach of it.

CORRECTION.

One of those perplexing errors which will occur in all printing offices was made in the Eucalyptus article by Theodore Payne on first page, second column of the Cultivator of December 17 in which a part of two paragraphs was omitted making the description of Viminalis and Rudis both incomplete and confusing. The two paragraphs should have read:

An Experience.

Some few years ago the writer experimented with 25 species at Thermal, on the Colorado Desert, and out of this number five proved successful These were as follows: Eucalyptus leucoxylon (Victorian Ironbark), Eucalyptus polyanthema (Red Box) Eucalyptus rostrata (Red Gum), Eucalyptus rudis, Eucalyptus viminalis (Manna Gum). Of these five the Eucalyptus viminalis grew much faster and straighter than any of the others; many of them being from 12 to 15 feet high in less than one year from the time they were planted. This tree, however, is not so desirable as some of the other species if a salable timber is the object, but as an ornamental street tree or for wind-breaks it is one of the very best.

A Fine Ornamental.

The Eucalyptus rudis has been planted very extensively as an ornamental tree on the deserts both in California and Arizona and has thrived so well that it has often been termed the "Desert Gum." There is little known about the timber of this species, however, and it is not generally considered of very much value. Of late a disease has attacked some of these trees and according to reports some of them are dying off, so for these reasons it is not likely this tree will be planted extensively.

The date palm orchard near Heber is claimed to have yielded 800 pounds of dates this year.

Imperial Valley Lands have a greater earning capacity per acre than any land on earth. For price list and information address, James S. White Jr., and R. A. Holt, Holtville, Cal.

Wood Soled Boots and Shoes. Boots $3.25; Shoes, $2.00 O. J. Weber Co., 565 South Los Angeles St., Los Angeles, Cal.

Peaches Apricots Walnuts Figs

TREES

Oranges Olives Grape Vines Rose Bushes

New Cling Peach The Sims

Possesses all merits of Phillips Cling, without any of its faults. Fruit large to very large, almost perfectly round, skin golden yellow, of very fine texture, firm and rich with excellent flavor and clear yellow to the pit, which is quite small. The canning qualities of this peach have been fully determined by several years of actual trial, and we regard it as the very best clingstone, for canning, in existence today, and recommend that it be extensively planted. The following statement from Messrs. Griffin and Skelley Company, one of the prominent canning and dried fruit firms in California, bears out our statement as to the commercial value of this peach, for which we predict a great future.

Griffin & Skelley Company,
16 California Street,
San Francisco, Cal., Oct. 6, '08.

Mr. Geo. C. Roeding, President, Fancher Creek Nurseries, Fresno, Cal., Dear Sir:—Regarding the Sims Cling Peaches, samples of which were delivered to our cannery at Fresno.

We packed these samples and are most favorably impressed with them. We find the peaches to be of fine texture, rich color and particularly fine flavor, and the best late Cling Peaches we have ever had in our cannery. They seem to ripen between the Orange Cling Peaches and the Phillips, and there has been an urgent demand for Clings that would come in just at that time, as it would enable canners to materially increase their output of Cling Peaches, and we shall welcome the day when a sufficient quantity of these peaches is available for canning purposes. If we were planting today, we should certainly put out a considerable quantity of these Clings.

Yours truly,
Griffin & Skelley Co.

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The Fruit Growers' Guide
By GEORGE C. ROEDING
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120 pages, profusely illustrated, beautiful lithograph cover, color plates inside. This book fully describes various kinds of citrus, deciduous and ornamental trees, roses, vines, plants, palms, etc. Gives very valuable information about planting and shipping. By far the best book of its kind ever published on the Pacific Coast.

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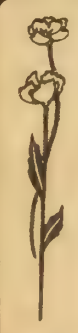

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A. R. Rideout, Proprietor Whittier, California

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The Ornamental Garden

THIS MONTH.

Bulbs may still be planted. Lilies, hyacinths, narcissus anemones, ranunculi and the early gladioli may even be planted now. In the garden of the writer a bunch of fine plants of gladioli are already coming up with promise of early bloom.

If a good supply of the California poppy have not been sown liberal plantings should be made at once. In annuals, the shirley poppy, sweet peas (it's already late for sweet peas, plant them quick) and mignonette may be sown.

Roses and shrubs should be planted this month. Cuttings may be made of roses also of poinsettias and most other plants which grow from the longer woody cuttings.

All deciduous ornamental trees should be put into their permanent location at once. Deciduous vines, now dormant, are in good condition for removal.

CARE AND CULTURE OF CHRYSANTHEMUMS.

THE road to success in chrysanthemum culture is short and easy to travel. No plant yields more readily to treatment.

Starting Plants.

In the early spring the old plants of the preceding year will throw out many suckers from the main stock just below the surface of the ground. At some favorable time in March, April, or early May—April is best—break (not cut) slips from the tops of these suckers, and pinch from the slips all the leaves, except the bunch at the end. Let these slips stand in water for twenty-four hours and they will absorb enough moisture to keep them from wilting when they are set out; then plant them in sand placed in boxes to a depth of about six inches, planting them about two inches deep. Place these boxes in a sunny exposure and up from the ground; cover the boxes with painted glass or shaded glass, allowing a good circulation of air between the box and the glass, so that the slips will not be too much heated. These slips will take root in from two to four weeks if kept wet; the sand should never be allowed to dry out.

Setting Out the Plants.

When these plants are well rooted transplant them with care into mellow soil (never work soil wet) and shade them from the direct sun for a few days. It is well to have some plants in reserve to reset those that get broken off or eaten off by slugs or snails, or destroyed by other mischance. Plants must not remain long in sand after they are rooted as they will be weakened by lack of nourishment.

Growing Plants.

The plants will begin growing in about ten days after setting out; when they are from eight to ten inches high and have put forth at least two pairs of leaves, pinch out the terminal leaf bud. In a short time a branch will start at the axil of each leaf. Break off all these branches except two or three nearest the top. When these branches have made a growth of five or six inches and have put forth at least two pairs of strong leaves, pinch out the terminal leaf bud from each branch. Branches will, as before, start from each axillary bud; they must likewise be broken off, saving one or two on each branch. This topping process should be repeated several times, managing so that the last time shall be during the first half of July. Be careful not to have too many branches from three to six at last topping. If you have been timely and judicious in your topping, your plant will be about twenty inches at this last topping. Let the laterals that come after this topping grow to from two to four inches in length and then do your last breaking out of branches. Leave none but strong ones, and from three to six to the plant. You are now deciding the number of flowers you are to raise to the plant. and branches must guide you.

Disbudding.

You have now broken off your last branches late in July, and your plants now begin their vigorous growth. The strong branches will soon run up from three to four feet high. During this vigorous growing buds will begin to appear in leaf axils. From this time on success is only to the vigilant. None of these side buds must be allowed to grow. Each branch will indicate its determined stature by presenting at its terminal a bunch of flowers and leaf buds. We are now at the point where skill and knowledge are most needed, as well as the greatest vigilance. A little neglect at this point and you fail in your accomplishment, you will have a large number of flowers, but they will not belong to class A.

When the little buds that appear in a cluster at the very end of the lusty branch have grown to about half the size of a pea, all of them but one vigorous flower bud must be broken out. How are you to know the flower buds? If but three are there it will be the center one. You are likely to know it from its appearance. Those green leaf-like parts that are to form the sepals of the flower are longer and more pointed than those on the leaf bud. Much care must be taken in this disbudding. The stems to these buds are very brittle and break very easily. Hold the buds with one hand and take a stick like a toothpick and crowd off the buds which you wish to dispose of. You will make some mistakes here. If you should leave a leaf bud instead of a flower bud all is not lost. The leaf bud will make a branch which will in a short time present a terminal cluster like the one with which you have just dealt; then try again. This breaking out of buds must not be neglected for a few days, but must be attended to at the proper time.

Watering.

During the early period of growth the plants should not be kept too wet, yet never let the roots get dry. After the last topping water copiously. It is well to wash with the sprinkler the dust from the leaves about once a week; do this at the close of the day. Adobe soil will not stand so much watering as the loamy soil. Judgment must here be used.

Manuring.

By or before the middle of July mulch the ground to a depth of two or three inches with good stable manure.

Soil.

Any good native soil that is not alkaline is suitable for the chrysanthemum. I mean by native soil that laid in place by the ancient streams that made our valley. Lots filled from cellar excavations and street gradings are all right. There is a silt that is hauled from the beds of our creeks by some people which is not suited unless well mixed with adobe.

There is no subtle mystery about raising chrysanthemums. Do the right thing at the right time. The most difficult things to do are the rooting of plants and disbudding the extra buds in the terminal cluster.

Many people raise good plants by setting out the suckers, as each of them has a root. I have seen as good plants raised this way as from cuttings, but they are not so sure to make good flowers, and if this method of propagating is continued for two or three years the flowers will degenerate.—Mrs. G. S. Wills in San Jose Mercury.

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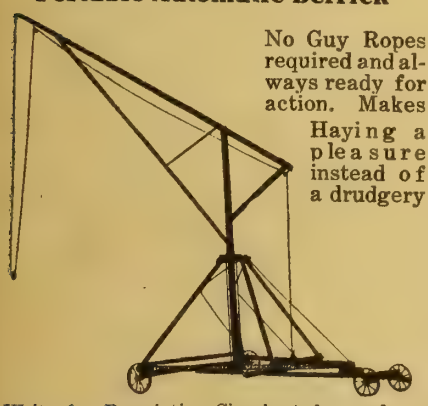

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Grafted or grown from carefully selected seed. Postal gets prices.

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Two acres of figs near Colusa gave to its owner a net $450 income per acre.

Small Fruits and Vegetables

THIS MONTH.

TIME for earliest spring planting is here. In the elevated more frostless section potatoes may be planted. Of course it is possible later frosts may catch them but the pleasure and profit in such early products is worth the trial. In such sections beets, cabbage, carrots, peas, turnips, lettuce, onions may all be planted. In the cooler regions lettuce, onions and radishes are hardy.

In the seed bed may be planted cabbage, cauliflower, pepper, celery and tomato for later planting. planting.

In the cooler sections where the wet and cold soil makes this too early for the first planting, it is wise to spade or plow under a good coating of stable manure and get ground in clean tilth for later planting. Such work lets in the air to the soil, kills out many insects aids in subduing fungi and generally benefits the soil. "Tillage is manure."

Fruit trees, berries and shrubs should receive prompt attention as to pruning and new ones should be planted.

ORIGIN OF VEGETABLES.

The potato, which was already cultivated in America when the continent was discovered, is spontaneous in Chile. It was introduced to Europe in 1580 and 1585 by the Spaniards, and almost at the same time by the English, who brought it from Virginia, where it had appeared about 1550. The sweet potato and the Jerusalem artichoke are also supposed to come from America.

Salsify is found in a wild state in Greece, Dalmatia, Italy and Algeria. According to Oliver de Seres, it has been cultivated in the south of France since the sixteenth century.

Turnips and radishes came originally from Central Europe. The beet root and the beet, which have been greatly improved by cultivation, are considered as the same species by botanists. The beet, only the stalk of which is eaten, grows wild in the Mediterranean islands, Persia and Babylonia.

Garlic, onions, shallots and leeks have long been cultivated in almost all countries, and their origin is very uncertain. That of the scallion is better known. It grows spontaneously in Siberia. One finds chives in a wild state throughout the northern hemisphere.

The radish, greatly modified by cultivation, probably had its origin in the temperate zone, but from what wild species it is derived is not exactly known.

The lettuce appears to be derived from the endive, which is found wild in temperate and southern Europe, in the Canaries, Algeria, Abyssinia and temperate Western Asia.

Wild succory is spontaneous throughout Europe, even in Sweden, in Asia Minor, Persia, the Caucasus, Afghanistan and Siberia. Cultivated succory is probably a form of endive, which is thought to have its origin in India.

Cabbage, like all vegetables which have been cultivated from remote times, is believed to be of European origin.

The artichoke is the cultivated form of the wild cardoon, indigenous to Maderia, the Canaries, Morocco, the south of France, Spain, Italy and the Mediterranean islands.

Asparagus had its origin in Europe and temperate Western Asia.

The origin of the egg plant is India; that of the broadbean is unknown, as also that of the lentil, the pea. checkpea and haricot. The last named appears to have come originally from America.

The carrot grows spontaneously throughout Europe, Asia Minor, Siberia, Northern China, Abyssinia, Northern Africa, Madeira and the Canary islands.

Chervil comes from temperate Western Asia, parsley from the South of Europe and Algeria, sorrel from Europe and Northern Asia, the mountains of India and North America. Spinach is supposed to come from Northern Asia.

For some twenty years past the crosnes has been used. This little tuber with fine savory flesh, which has long been cultivated in China and Japan, is probably indigenous to Eastern Asia.

The tomato comes from Peru, the cucumber from India and the pumpkin from Guinea.—Revue Scientifique.

SAUERKRAUT.

Solid heads of cabbage that have but little color, namely, red or green leaves, make the nicest kraut—cabbages commonly used in making slaw. There is no objection to using burst heads, if all the green is carefully cut away. Have your barrel or keg, pounder and spade thoroughly clean, and also have your spade sharp. Remove all loose and green leaves from the cabbages, quarter and remove the heart, then throw into the vessel with a sprinkling of salt; now with the spade chop the cabbages briskly; keep throwing in the prepared cabbage, and when quite a depth of cabbage has been chopped, say 18 inches, stir and salt until seasoned right for present eating. Take your pounder; we use a 4 by 4 timber, but the best pounder can easily be made as follows: Saw a timber 4 by 4 in a 12-inch length, bore a hole in the end and insert a broom handle. The pounder must be free from splinters and clean; pound vigorously until the juice comes over the chopped cabbage; throw in more prepared heads, chop with the spade, salt, and pound each layer until the vessel is almost full. Enough space must be left for the ferment, else the juice will run over and the kraut not be as good. At the last pounding the cabbage should be well covered with juice.

Spread a clean white cloth over the kraut; a wooden cover that will just slip inside the vessel; a heavy, smooth rock on this, and a clean cloth tied over the top of vessel. After fermentation, the rock, wooden cover and white cloth should be removed and washed; then replaced as before. We keep our kraut in a covered outhouse until severe cold weather. We never keep it in a cellar, although it may be as good a place to keep it.

When but a few heads are to be made up, we use a jar to keep it in, and chop the heads in a wooden bowl, using a common chopping knife. A beer bottle is the thing to use as a pounder in a jar of kraut. Other than the utensils, the proceedings are exactly the same as when using a barrel of heads.

Very little salt is required for a barrel of kraut, and as to the cabbage required, one cannot say, as the size varies so much. We use any variety of cabbage that has good solid heads.

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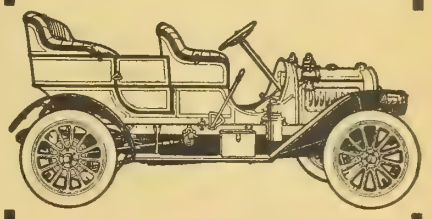

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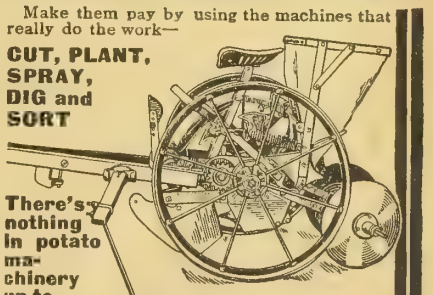

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Prune and pear growers of the north are greatly concerned over the pest of thrips, and hope some relief may be secured before the damage is done in the spring.

Losses Paid

The Following is a List of Losses Paid Recently by the CALIFORNIA MUTUAL LIVE STOCK INSURANCE ASSOCIATION:

J. D. Smith	Los Angeles	$ 85.00
E. R. Kellam	Los Angeles	$ 85.00
Connell Co.	Los Angeles	187.50
Diamond Coal Co.	Los Angeles	70.00
Garden City Van & Stage Co.	Los Angeles	100.00
Pioneer Truck Co.	Los Angeles	100.00
C. H. Eager	Los Angeles	135.00
Pioneer Truck Co.	Los Angeles	100.00
Los Angeles Creamery Co.	Los Angeles	540.00
C. E. Drayden	Los Angeles	125.00
Llewellyn Iron Works	Los Angeles	200.00
Pioneer Truck Co.	Los Angeles	100.00
Eagle Livery & Carriage Co.	Los Angeles	50.00
C. H. Fuller	Los Angeles	100.00
Great Eastern Transfer Co.	Los Angeles	110.00
J. N. Osterholl	Los Angeles	200.00
Ernest Pendleton	Los Angeles	100.00
John Stewart	Los Angeles	50.00
C. J. Flynn	Los Angeles	150.00
J. S. McKee	Los Angeles	75.00
Wm. Wilson	San Diego	200.00
Siro Tonini	San Diego	150.00
J .A. Tisdale	Mentone	150.00
S. M. Hill	Santa Ana	100.00
Miss Helen Hazell	Arlington	100.00
E. D. Morrison	Modesto	100.00
John Compasso	Napa	100.00
Chas. W. Herder	Craftonville	50.00
Long Beach Mfg. Co.	Long Beach	130.00
A. W. Banister	Bakersfield	50.00
Fred Larder	Los Gatos	350.00
Frank S. Herr	Pasadena	300.00
Rudolf Barnicott	New Castle	150.00
Jesus Saenz	Palms	30.00
P. W. Brooks	Holtville	30.00
Johnson & Greening	Fresno	150.00
L. S. Leavitt	Fresno	200.00
O. E. Kunde	Fresno	300.00
Miss Alice Millward	Fresno	100.00
J. W. Mack	Marysville	100.00
W. A. Wedderien	Marysville	30.00
John Kaelin	Sacramento	30.00
Acme Dairy	Sacramento	23.30
J. A. Gleen	Mojave	100.00
F. S. Seller	Chico	37.50
R. H. Lynn	Chico	80.00
M. T. Machado	Dutton's Landing	400.00
Frank Machado	Dutton's Landing	25.00
Asvedo Bros.	Dutton's Landing	175.00
Saiarini & Baciarini	Dutton's Landing	50.00
Baciarini & Yolo	Dutton's Landing	85.00
H. E. Kinkade	Newman	30.00
Pachaco & Brazill	Newman	30.00
Stevenson & Wagner	Newman	35.00
Manuel Barbour	Newman	30.00
Pachaco & Brazill	Newman	30.00
Joe. Fernandes	Turlock	30.00
Alfred Fliflet	Turlock	50.00
Carl Neilsen	Salinas	150.00
G. L. Martell & Son	Salinas	75.00
J. M. Ahrendes	Stockton	30.00
B. R. Beach	Stockton	6.00
Louis M. Haight	Stockton	150.00
H. C. Stohlman	Yuba City	60.00
H. C. Stohlman	Yuba City	50.00
G. T. Heidoting	Yuba City	75.00
H. C. Stoholam	Yuba City	125.00
C. W. Harmon	Tudor	150.00
A. Dacosse	Tudor	100.00
Peter Mathieson	Los Banos	37.50
R. L. Miller	Los Banos	39.00
Joe Chettero	Los Banos	50.00
A. Iacopi	Los Banos	60.00
Joe Cirimele	Los Banos	50.00
Sciarini & Baciarini	Collinsville	50.00
Sciarini & Baciarini	Collinsville	25.00
Sciarini & Baciarini	Collinsville	24.00
Tim & Stewart	Collinsville	25.00
F. E. Robertson	Denair	40.00
Geo. Minges	Ripon	30.00
J. W. Smith	Grand Island	13.05
H. Cambon	Riverside	100.00
L. & M. Madonna	Denverton	7.50
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W. H. Holliway	Oakdale	100.00
Santa Fe Exp. Co.	Oakland	75.00
Peterson & Emmington	Suisun	23.00
S. S. Hyde	Dixon	25.00
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M. N. Newborn	Manteca	40.00
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W. L. Burns	Mulberry	10.50
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Ruby Lopez	Hollister	33.00
John Compasso	Napa	100.00
Geo. Foster	Napa	25.00
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Raffaelli Bros.	Petaluma	40.00
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270-71-72 Bacon Building, Oakland, Cal.

Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

By Mrs. Minna E. Sherman

COWS.

WHAT the value of a good cow is on the farm is not enough considered. She gives milk, and that is used, but rarely is an account kept with the cow to see how certain is the profit each day the year around. The skim milk that goes to the chickens and pigs is rarely credited to the cow account but the poultry yard receives credit of the eggs laid. The pigs receive the credit of the money they bring in, and so it goes. The cow is like the wife, she gives her time readily and willingly and is not counted as a factor in earnings. Even the old rooster just now is shouting out "Look! look! at the eggs we have laid!" As he is too noisy to be overlooked the other animals are doubtless impressed with the value the old cock is to the ranch. The gentle cow never forces her personality on us but gives of richness of milk to keep the other animals growing, and gives nearly all the grain we feed her, back to us to put on the land to bring us increased richness of fruit and grain.

The Pacific Dairy Review has a brief editorial on an advertisement of a man that is willing to pay $100 each for twenty-five cows that will give three hundred pounds of butter per cow. The cows to be delivered free of charge on his ranch. While this would look like a money making proposal from a seller's point of view, yet the dairyman that has that class of cows to sell does not have to wait until he has twenty-five, for his neighbors will take them all at the ranch. Some years ago I made a sale of heifers from eighteen to twenty-four months old and realized ninty-one dollars a head for them. They were from two generations of cows that had produced over three hundred and fifty pounds of butter apiece. I sometimes hear of them from others that wish to buy similar cows. You see that this man is not likely to find anyone to furnish these cows delivered at that price.

Success.

The fact that a man advertises for these cows and appreciates their worth is no reason that he can keep them at that production. It is often said a cow is a machine; but no! she is an individual and if her likes are not understood and catered to, it soon shows in the diminished milk yield. I have sold many cows that were producing four and five hundred pounds of butter yearly and in few instances have the purchasers been able to develop from these cows others of like productiveness. It is often said to me, by men that desire the best, that they can buy better cows than they can raise. The fact is that they fail to realize that while the power to be great producer is in the heifer she must be trained to it the same as a horse is developed into a racer.

Sales.

There are many men that become fascinated with the idea of having a great herd of cows and will buy few or many of the heaviest producing cows they can find. They pay high prices and they often fail to even keep these cows up to the mark. In a few years comes a dispersion sale and they let their stock go, and they are dissatisfied with the whole business. They should then drop the idea that the dairyman is not their superior in knowledge, but they usually think it is "bad luck," not want of skill, that has made the herd unprofitable. These sales are the places for farmers of less means to buy good cattle. The old cows of fifteen or sixteen years sell for low prices. These cows will still give a few more calves, and these carefully trained to dairy work, make the lucky purchasers a breeder of fancy stock.

Testing Cows.

The value of the Babcock test for the cows comes in here, for, how many men know whether their cows produce three hundred or four hundred pounds of butter fat within the year? Without the use monthly of the Babcock test it is not possible to know how much the cows are bringing in by the year. The milkers always have their opinions as to which are the best cows in the herd and that opinion never is correct. The cow that pegs away day in and day out with an even flow of milk is the cow that pays the dividends; not the cow that gives a heavy yield at first and then tapers away to nothing.

Separator.

The separator too increases the butter fat by securing it all. If there are only a few cows, it still pays, in that the milk is sweet when it is fed to the calves and the cream is nearly all secured. On the ordinary farm the separator will not show the creamery result of leaving in the skim milk one-tenth of one per cent of butter fat; it will be more likely to leave two or three-tenths of a per cent in the skim milk. The lack of skill in the men in running it is offset in the wages, for a man that can run the Babcock and separator up to a creamery basis will have to be paid ten to twenty dollars more a month than if he had less knowledge. The ordinary milkers a few years ago regarded the Babcock test as witchcraft pure and simple.

Different Breeds.

No one should keep cows of a breed he does not like merely because some one has told him they were good dairy animals. While if the taste is not pronounced for one breed or another it may do to go slower and investigate a little as to the breed desired. The broader facts may be stated of the dairy breeds that they are profitable in one way, or another or under one condition or another. The point is, which can you buy most reasonably and which can you feed the most economically. Jerseys excel in richness of their milk; in the ease with which it separates under the pan system. This cow does well on heavy rich foods as grains and oil cakes. The Guernsey is a similar cow, a little larger animal, and gives the highest colored milk known. The yellow of this milk has caused more than one dairyman to have a bout with local inspectors about that "yellow color,

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you know!" The Aryshire and the Durham are all-around cows, producing a reasonable quantity of milk of a reasonable degree of richness. The Holsteins are much larger animals and give the largest quantity of milk of any of the breeds, many of the grades having to be milked four times a day when fresh. This milk has a smaller fat globule and it does not rise well in the pan, the milk is homogeneous, therefore, and often keeps from souring longer in consequence of its even mixture. The per cent is lower than the other breeds, often absurdly low. I once owned a cow that gave milk that averaged by the year only two and two-tenths but she gave 101 pounds a day for the first two months after she was fresh, so in the end she reaches a good high yield of butter fat yearly.—M. E. Sherman.

HOW TO RAISE CALVES ON WARM SKIMMED MILK.

We get the following information of inestimable value from a bulletin issued by Prof. C. H. Eckles, professor of Dairy Husbandry at the University of Missouri.

"The calf should be taken away from its mother by the third day or earlier, and should have its mother's milk for about two weeks. When the calf is about two weeks old, the milk may be gradually changed to skim-milk, using about a week to make the change."

Importance of Sweet Milk.

In order to make a success of raising the calf on skim-milk, the condition of the milk must be uniformly sweet. Probably nothing can be done that will produce indigestion and scours with more certainty than to feed sweet milk one day and sour the next. The younger the calf the more sensitive it is on this point.

The proper amount to feed the calf the first two or three weeks is about five or six quarts per day, and no more can be given without danger of indigestion. As the calf grows older it will take more, but it is never necessary to feed more than eight or nine quarts per day and never advisable to feed over ten. The calf should never be given all the milk it will drink. The calves must be fed in such a way that each calf secures the amount intended for it.

It is best to feed milk warm at all times and especially important that it be in this condition for young calves. Cold milk will usually cause indigestion in a young calf.

Begin feeding the calves dry corn meal as soon as they will take it, and continue as long as the skim-milk is fed. Provide hay of good quality, or pasture after the calf is three weeks or a month old.

Plenty of Water Needed.

An abundance of clean water should be accessible at all times, or at frequent intervals, as the calf is not satisfied with milk alone as a drink, and wants to drink a little water at a time, quite often during the day. This thirst for water is often overlooked when calves are raised by hand, and as a result the calf is thirsty, as well as hungry, and gorges itself with milk when it has a chance. Salt should also be within reach when the calf is old enough to eat grain and hay.

It is very important that all utensils used for feeding be kept clean. The calves should be placed in the lightest and driest portion of the barn and will not do well in dark, damp stalls.

Many a calf that would make a valuable cow is sent to the butcher because the owner would sell his milk at a good price.

TO CURE WARTS.

The common way of removing warts, by tying a silk thread around, too often proves disappointing, in that the trouble returns in a short time, perhaps in a more malignant form.

A practical horseman declares this simple remedy to be a perfect cure:

Five cents worth of blood-root and ten cents worth of chlorate of zinc. Mix together in a paste and put on twice a day. After two or three applications grease with lard until the roots come out.

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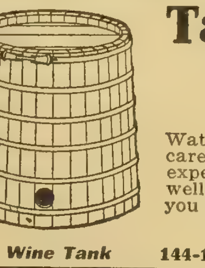

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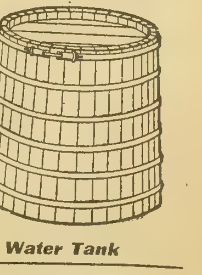

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California Cultivator

ESTABLISHED 1889

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Contents

CALIFORNIA GARDENS IN MIDWINTER, Cover.
PEAR THRIPS PROBLEM, 3.

CITRUS.—Citrus Tariff; Oranges to Market by Water; Pre-cooling Plant; Banana Culture in Hawaii, 4, 5.

DECIDUOUS.—Trees Out of Order, 7

ORNAMENTAL.—This Month; Chrysanthemum Culture, 8.

VEGETABLE.—This Month; Origin of Vegetables; Sauer Kraut, 9.

LIVE STOCK AND DAIRY.—Cows; Calves and Skim Milk; Wart Cure, 10, 11.

EDITORIAL.—Permanent Exposition; Protect Our Fruits; Labor; Can't Co-operate; Legislation for Pure Insecticides; Correction, 12.

AGRICULTURAL NOTES OF THE PACIFIC COAST.—Northern, Central, Southern, the Coast, 13.

POULTRY.—Southern California Show; Pigeon Pointers; Chicken Chat; Show Winners, 14, 15, 16.

BEES.—Bee Notes; Feeding Bees, 17.

QUERIES.—Storage of Sweet Potatoes; Ditch Manuring; Pruning; Fig Cuttings; Insect Eating Leaf; Seedling Lemons; Phosphoric Acid for Citrus Trees; Lime Application; Budding Cloth, 18, 19.

HOUSEHOLD.—Autobee; The Ring; Home-made Rugs, 20, 21.

PRODUCE MARKETS.—Los Angeles Market; San Francisco Market; Citrus Markets, 22, 23.

PERMANENT EXPOSITION.

A movement is on foot to secure an appropriation from the State Legislature now in session for the erection of a permanent exposition building on the grounds of the Sixth District Agricultural Fair Association building, or, rather, land which was formerly owned by the association within the city of Los Angeles. This land, at one time in the outskirts of the city, has become through the growth of the city, one of the most central properties and it has increased in value wonderfully. It became a most attractive property to the directors of the former association when it ceased to be used as a fair grounds. The matter was taken into the courts and it was ruled it was still the propery of the state and not of individual stockholders. The effort now is to have erected by the state on these grounds this exposition building which shall be permanently maintained as a place of displaying "Made-in-California Products."

The matter was presented at the recent State Fruit Growers' convention at Sacramento and received a unanimous endorsement. Counties in the northern part of the state have for several years found advantage in maintaining permanent exhibits in the city of Los Angeles, as it is a gathering place for tourists coming to California. But the expense connected with renting store rooms at all centrally located has been so great that it has been a burden upon every county that has maintained such an exhibit. If such a building were erected at state expense with the understanding that every county exhibitor is to have free space and the grounds and building made attractive enough that tourists would go there to secure in a short space of time an idea of California and her productions, it would prove for the counties more profitable and at the same time much less expensive than the present plan of each county renting high-priced property along the business streets.

We trust the movement will have the support of legislators and believe it will have profit in it for the producing classes of the state.

PROTECT OUR FRUITS.

Outside of the question of tariff for revenue or for protection as a political issue, there is the question of protection for our fruits and farm products, as long as protection is in vogue, which demands earnest consideration from our producers. Attention may be called to clippings which appear this week in the citrus department of this paper regarding importations of an American orange grower who is raising oranges in Mexico, in which he is quoted as saying that he hopes "Mexican fruit growers will be kindly dealt with by the revision committee." Of course California has in Washington her lobby working for the retention or increase if possible of the tariff on fruits, but we must bear in mind that importers and foreign producers are also alive to the situation and are leaving no stone unturned in order to secure free trade or at least reduction on those things which they wish to import. In addition to that the eastern manufacturer is willing to trade off the farming interests so that he may secure the retention of high tariff on his manufactured products. Only a few weeks ago this page called attention to the fact that the shoe manufacturers were working to secure free trade on hides, and of course a high protective tariff on shoes. Consistency is what the farmer demands and must insist upon if he would hold his products on an equality with those of the large manufacturing interests of the east.

As to Mr. Taft's position in this matter, we quote the following from a recent speech:

"My principle in regard to the duty to be imposed on products of the United States is that the American growers should be given the protective duty which will put them on an equality with foreign growers; that is, a duty equal to the difference in the cost of production at the point of delivery between this country and abroad, and if the present duty does not exceed that, it should be retained in the tariff law. Of course, I have no knowledge at all as to the cost in respect to fruit, but I am clear as to the application of the principle."

LABOR.

As a rule the warmest discussion before the sessions of the Country Life Commission showing the most diverse opinions was the question of labor. Some appealed for the removal of restrictions of Chinese immigration. None or at least but very few wished for any further Jap invasion. The Jap as a farm laborer has almost invariably been found tricky and treacherous and any thing but an honest laborer for his employer. Very often "the blanket man" was condemmed as equally unreliable as the Jap. This brought from Mr. Keppel, Superintendent of Los Angeles County Schools, the statement that at one time in his life he had gone from ranch to ranch, his blanket on his back, looking for work. When secured he had been invariably given permission to sleep in the shed, never being admitted to the home and the only place which seemed to be open to welcome him was the American saloon "the most damning concern on the American continent today."

What California wants is a class of labor which will increase the attractiveness of country life. This will never be done by the introduction of Oriental labor. An item was made on the opposite page of this paper a few weeks ago that in a certain community a census of its laborers had been taken which developed the fact that there were in that community 500 Japanese laborers and 75 white laborers. Would a home seeker coming to California seek such a neighborhood for the education of his children? Still more will a resident now living there remain if within his power to escape? White and Oriental labor will never mix and it will be impossible for the Commission to make a recommendation too strong in which opposition is expressed to the introduction of Oriental labor as a means of creating better rural conditions.

CAN'T CO-OPERATE.

It is very unfortunate that the cantaloupe growers of the Imperial valley are unable to get together and form a thorough going business like organization which would handle the products of those rich acres in a way which would bring some returns to the growers as well as to the middle men and railroads. Southern California can show the most perfect co-operative fruit marketing organization which any section of the world can produce, but with that example as a possible guide, the great majority of our producers seem to prefer to fight their own way alone very much as the small boy in the meadow fights the bumble bees which aare buzzing about his closed eyes.

The lesson to the cantaloupe growers of last year should have been sufficient to have opened the eyes of the grower to the needs of the hour and secured a co-operative effort which would have placed the coming year's fruit in the market at a profit. But rather than do this, the majority of the growers have decided to each go it alone and the result of the coming crop's returns is purely guess work. If enough have been discouraged so that there will be a very limited output it is possible fair prices may prevail. Sure it is the production will not be so great as last year.

LEGISLATION FOR PURE INSECTICIDES.

A bill now before Congress, introduced in fact at the last session, provides for "preventing the manufacture, sale and transportation of adulterated or misbranded fungicides, Paris Green, lead arsenates, and other insecticides, and for regulating the traffic therein." This bill has the support of several Eastern state apple growers associations, the Apple Growers Congress, the National Grange, many pomological societies, as well as the largest chemical manufacturers of the country.

This is a needed regulation and will, we trust, secure sufficient support in the present Congress to insure its passing. Every apple grower who has had occasion to use either Paris Green, or lead arsenates, knows the unreliable nature of these products. The enactment of such a law would protect both the grower and the honest manufacturer.

CORRECTION.

The Cultivator regrets making an error in the crediting of the authorship of the article on first page of last week's Cultivator to Prof. G. W. Shaw. It should have been given to A. J. Gaumnitz, who is working with Prof. Shaw. In fact, Mr. Gaumnitz has direct charge of the field work at the University Farm at Davis and is doing some excellent work which is proving of great value to grain growers of this state. The Cultivator has in hand an article written by Prof. Shaw at the same time as that of Mr. Gaumnitz on the "Possibilities of Plant Improvement in California," liberal quotations from which will be made in a later Cultivator.

Shop Talk

BOOK ON ALFALFA.—A review of this book in the Cultivator of December 10 resulted in a very large demand for it through this office, and to those who possibly overlooked the offer before, we again mention it. It is certainly a valuable book for any interested in that crop and is written by F. D. Coburn, now secretary of the Kansas Department of Agriculture. The price of the book is regularly $2.00, but for $2.50 we are ordering the book mailed postpaid and giving a year's subscription to the Cultivator as well. It is well worth the investment.

A pleased reader in Galt recently expressed his appreciation of the Cultivator in these words: "I consider the Cultivator to be worth many times its price. In fact, I often find a single copy to be worth more than the price of one year's subscription." Such expressions are an incentive to continued effort in making our paper valuable to every rancher who sees it.

Agricultural News Notes of the Pacific Coast

Northern California

The attendance at the Agricultural High School is larger than anticipated.

Many settlers are arriving at Orland attracted by the big government irrigation scheme.

A. M. Cleghorn has been appointed instructor of English in the School of Agriculture at Davis.

A joint meeting of Shasta and Tehama land owners has been held to consider irrigation matters.

Cloverdale, in Sonoma county, is making preparations for its citrus fair, which will be held in February.

One company of Nevada county has 200 Greeks cutting ice for storage. The ice there is 12 inches thick.

Vast numbers of spruce and fir trees were taken from the mountains in Nevada county for Christmas trees.

Four thousand Tehama county sheep, making 24 carloads, were recently dipped and shipped to the Miller Lux ranch, near Stockton.

Chico has a stock of last year's hay held over for the big price of this year. Many dealers maintain that hay prices will soon be lower.

Yolo county people are moving to secure the enactment of an appropriation for a state highway to connect that section with Sacramento.

A reclammation project largely in Sacramento county is under way contemplating the saving of 55,000 acres of land which at present is practically worthless.

The plant introduction garden at Chino recently received ten carloads of bamboo from Japan, which after being established and acclimatized will be distributed.

The mountains in Northern California are heavily covered with snow, it being reported that in the streets of Quincy, Plumas county, there was nine feet of snow after a recent storm.

Grape growers of Sonoma county have decided it is wise to separate their fight from the saloon fight if they are to win recognition in the present campaign for consumption of the California wines.

Anderson Valley in Shasta county has been troubled with loss of much stock by the depredations of a large panther, which was finally captured. The beast measured ten feet eight inches from tip to tip.

The Grape Growers' Association of California has sent out a four-page circular urging the grape growers of the State to co-operate in every way possible to secure relief from the ruinous prices which prevailed during the past year.

During 1908 the part of the state north of Tehachapi shipped of apricots 231 cars, cherries 208 cars, grapes 3816 cars, peaches 1980 cars, pears 2701 cars, plums 1763 cars, other fruits 2116 cars. The latter item includes apples. This makes a total of 12,917 cars of green deciduous fruit from Northern and Central California.

A Christmas turkey being dressed by a woman at Oroville proved to be a decidedly rich bird, for from its crop the woman secured one sapphire weighing two carats and one small gold nugget worth about one dollar. The turkey had been fed in the Dry Creek section, from which something like 200 diamonds have been secured.

Central California

A Watsonville boy has a thirty pound turkey which is one year old.

Santa Cruz county has about 900,000 bearing fruit trees and 100,000 non-bearing.

A most interesting farmers' institute was held at Monterey on the last days of the old year.

Alfalfa hay in the San Joaquin valley has given but very scant growth during the recent cold weather.

The report of the State Agricultural Society is issued and gives a very good idea of the agricultural resources of the state.

A big fight is scheduled before the National Congress this session between the city of San Francisco and other interests in the waters of the Hetch-Hetchy.

The Sempervirens Club of San Jose asked for state aid in better protecting the California Redwood Park, located in Santa Clara and Monterey counties.

At a recent meeting of the San Jose Grange it was reported that black scale is being very materially reduced by a parasite which it is said has not yet been named.

The institute of farmers at Clovis, Fresno county, passed resolutions favoring Parcels Post "equal to that of other civilized nations" also favoring good roads for Fresno county.

A new and patented process of evaporating vegetables has been perfected by Hanford parties which is proving very successful and is thought to promise an outlet for many California vegetables now wasted.

The Agricultural Special which made a recent trip through the San Joaquin valley was well received and a world of information secured by farmers along the line of the Southern Pacific which conducted the train.

The annual meeting of the stock holders of the Kings County Fair Association recently elected the following directors for the coming year: A. F. Nunes, A. C. Borgess, J. D. Biddle, M. P. Costa, M. P. Avilla and J. O. Hickman.

In appealing for the continuance of the present freight rate before the traffic manager, Walter M. Field of the Canners' League maintained that if the increase in freight rates was persisted in, many of the smaller canners would be ruined.

The board of supervisors in Fresno county had a warm time in electing a horticultural commissioner at a recent session. Messrs. McIntosh and Schell were the candidates. Mr. McIntosh maintains that a "Schell" game has been worked on him .

The management of the Tulare County Citrus Fair has decided that the next fair shall be held at Dinuba. Dinuba is not so strong on citrus production as some other sections of Tulare county, but she has taken a hearty interest in the fair and made a fine display at the Exeter exhibit.

Orange trees in Kern county especially near Bakersfield were severely injured by the recent cold weather. In that section it was the coldest in the history of the county. In the city of Bakersfield at noontime of the coldest day the thermometer registered 30 degrees which was the highest of the day.

Southern California

Calexico is taking steps to hold a farmers' institute.

Holtville is taking steps to secure the erection of a sugar factory.

One farmer at Calexico reports $2400 return from a forty acre alfalfa field.

A large acreage of apples will be planted near Oro Grande, San Bernardino county.

Redlands shipped 151 cars of holiday fruit this season as against 231 last season.

Beet growers are looking with some concern on the efforts made to reduce the tariff on sugar.

The Santa Ana Valley Irrigation Company is discussing the advisability of increasing its capital stock.

The Coachella Valley output of melons it is estimated will be about 50 per cent that of last year.

Capital has been secured and arrangements are being made for a meat packing house at Calexico.

Santa Ana is having trouble with its sewer farm, as property owners do not wish its location near them.

There will be a great increase in the quantity of grapes shipped out of Imperial valley the coming season.

Shipments of live stock from the Imperial Valley by one train last week carried out $9000 worth of hogs.

The California Vegetable Union, with offices in Los Angeles, ships annually about 3500 carloads of vegetables.

The re-survey of the Imperial valley went into force in nearly all of the townships of Imperial valley on January first.

The increasing price of celery looks exceedingly good to the Orange county celery growers. About 125 cars a week are being moved.

Mound, Ventura county, has a most active and helpful farmers' club. At its meeting last week it was addressed by Professor Cook of Pomona.

Many cattle being shipped for slaughter out of San Luis Obispo county are now compelled to be dipped because of being infected with Texas fever tick.

The Oxnard Sugar Company entertains its employees and beet growers at a barbecue at the factory this week. It is estimated at least a thousand beet growers will be present.

The Antelope Valley, especially at Lancaster, was covered with a mantle of snow during the recent rain. It is estimated that no less than nine inches covered the ground at Palmdale.

The Imperial and Coachella melon growers shipped last year 631 cars of melons to central states east of the Rocky Mountains, 395 to other western points and 896 cars to Atlantic coast points.

The Oxnard Sugar Company is preparing to run a branch railway for the purpose of carrying beets from several ranches east of Oxnard. This road will increase the acreage planted to beets about 800 acres.

The American Nile Cotton Company has been incorporated in Imperial county with $25,000 capital, and the following elected directors for the next year: W. F. Holt, D. R. Crawford, George A. Carter, J. R. Loftus, and M. L. Pellet.

Recent floods in the Colorado river have done no damage to the big Laguna dam.

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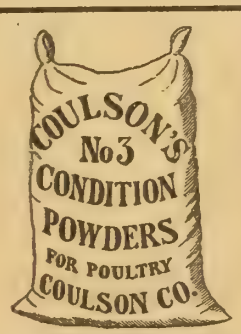

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Eggs $1.50 per 15; $7.50 per 100; $60 per 1000.

S. E. Gregg East Adams St. Riverside, Cal.

White Wyandottes

My San Jose Winnings: 1st, 2nd and 3rd Cock; 1st Cockerel; 1st, 2nd and 3rd Hen; 1st and 2nd Pullet. The above winnings were made out of ten entries.

Box 60, R. No. 1 Mrs. C. D. Hubbard San Fernando, Cal.

Profit in the Poultry Yard

By Mrs. Frank Metcalf

We solicit short articles of a practical nature from the fancier and utility breeder, giving their experience with poultry. All inquiries pertaining to feed, management, disease and its prevention will be answered through these columns.

SOUTHERN CALIFORNIA SHOW.

The Poultry Breeders' Association of Southern California has just held a very successful show at Chutes Park, Los Angeles, lasting from Dec. 31st, 1908, to Jan. 6th, 1909, and being the fourth annual exhibit held under the auspices of this association.

The officers in charge are R. L. Walton, Tropico, president; C. M. Walton, Glendale, first vice-president; E. E. E. Merson, Los Angeles, second vice-president; S. E. Salisbury, Monrovia, secretary; J. L. Harrison, Pasadena, treasurer. The judges are S. Tyler, Pasadena; H. W. Gunston, South Pasadena, and G. W. Masterson, Duarte.

There were 1029 birds entered, a few less than for 1907, but for a "hard times year" a very satisfactory showing, while the association congratulates itself and the breeders generally upon the greater merit and higher quality of this year's birds.

All varieties were well represented, from the lordly Brahma to the tiny bantam, and all seemed in "high feather" and excellent health, proclaiming California's climate agrees with chickens as well as humans.

The blacks seem to suffer less from the effects of the strong sunshine than any other color, and were majestic with rich green sheen, and mostly free from the purple tinge which makes black so difficult to hold, in perfection. Some of the whites would have been the better for a bath, others were immaculate and snowy. The Buffs showed the effects of the sunshine by shafting in many cages, as did most of the Reds, but as a whole the show compared very favorably with many eastern exhibits.

Some specimens were of immense size, one light Brahma cock in particular, whose head reached nearly to the shoulder of my nine-year-old daughter, with whom he was photographed, weighing 14 pounds.

Two other light Brahmas weighed 12 pounds each, and would have delighted the heart of "Uncle Ike" Felch if he could have seen them. One Black Orpington also weighed 12 pounds, and was a beauty.

There were eighteen classes of standard fowls and twenty varieties of Bantams represented. White Rocks led in the standard class, with 164 entries. White Leghorns came next with 124 birds, double the number shown last year, and testifying to the increased interest taken in Southern California in this utility breed. Wyandottes numbered 119, and R. I. Reds followed with 115. There were 82 Orpingtons on exhibition, Blacks, Buffs, Jubilees and Whites, and 42 Minorcas.

There were a few of the newer and scarcer breeds, one pair of Black Ravens shown by the originator, G. Irwin Royce, and trio of Buckeyes, dark red and gamy, shown by the originator, Mrs. Frank Metcalf, who also exhibited a trio of her latest love, "California Cardinals," little, dark red beauties. Dr. Winslow of Monrovia had two pairs of his R. I. Red Bantams on exhibition, and very handsome little fellows they were. I understand the genial doctor is the originator of these pretty birds, for which he is to be congratulated. G. Irwin Royce, president of the Bantam Club, and originator of the popular Bluettes, showed a decided novelty in a pair of Red, White and Blue Bantams, built along approved laying lines, and with pleasing plumage, nicely blended naturally, not colored artificially, as some might suppose.

People are looking more and more to utility poultry, and a fine exhibit of fourteen display pens, consisting of one cock and eight hens each, in seven varieties, bore testimony to the success of their efforts along this line.

A notable display of ducks consisted of two pens of White Indian Runners, a new variety, combining the shape of the Runner and the plumage of the Pekin. A pen of Buff Orpington ducks also attracted much attention, and one pen of Pekins, an old, tried and true variety, was shown.

Thanks are due to C. M. Walton for courtesy in giving the above figures, and whose valuable time was encroached upon mercilessly in our search for facts.

The fourth annual exhibition of the Poultry Breeders of Southern California has taught some valuable lessons. The old theory that fine feathers and utility qualities do not combine is exploded as one walks through these well-filled aisles where beautiful birds of every color vie with each other in proclaiming their practical worth. Their weight as well as the enviable egg records of some of them is surprising.

The judges found a difficult task confronting them, but Gunston's smiles when he reached the Red alley were good to see and he professed himself well satisfied with the quality of the birds, by which all who know Gunston will realize that the under color was O. K. The surface spoke for itself and a finer class of R. I. Reds would be hard to find. The Buffs, especially Wyandottes, were that even clear buff, so difficult to obtain and the fifteen birds ranked very high.

White Rocks and Dottes were both strong although some dissatisfaction about awards was found as is always the case in such a large class. A pen of the new Columbian Plymouth Rock was quite a novelty but did not compare with the older Columbian Wyandottes, although when bred as long they will likely do so.

Buff Rocks were a good class and the winning cock was simply grand. Barred Rocks showed up well as to quaity, but were not a large class. The difficulty of getting really good show birds in this grand old utility breed is becoming greater every year as the exactions of the standard are increased. Cornish fowls are not backward about coming forward and the quality of those shown was of the very best and with better combs than is usually found on this breed.

Two tireless brooders were placed upon exhibition and were very interesting and well worth the price of admission as any one at all handy with tools could go home and construct one. The Philo appears to the writer as be-

ing for the most practical. But a good hen is the best ever.

There is no better place to visit than a poultry show, and a day spent among fanciers will convince the most skeptical that there is a fraternal feeling among chicken cranks which makes them all akin, and the magical word, "Poultry" levels all class distinctions and doctor, lawyer, millionaire and mechanic mingle with but a single thought, and that thought is Poultry. Better poultry and more of it—that is the slogan. Without poultry shows fine breeding would soon become a lost art and instead of the beautiful plumage and distinct types we now see, all would degenerate into a mongrel mixup, with neither beauty nor utility to commend them.

The public should support these shows well by their attendance and the valuable lessons learned will never be forgotten.—Mrs. Metcalf.

PIGEON POINTERS.

Fresh water should be given twice daily.

Buy only the best of grain; avoid damaged stuff.

Do not forget that profit can be derived only from mated pairs.

In order that it may easily be taken out and cleaned; the floor of each nest box should be movable.

Sawdust should not be used in the nest, as it harbors lice.

Never add new birds to a flock already started, if you possibly can help it.

After seven or eight years' breeding, the usefulness of the bird is ended.

Between the ages of three and five years, the pigeons are in their prime.

For want of proper experience, the first year the parent stock are apt to be more or less careless and neglectful. After giving the feed, it is best to leave the loft, as pigeons are apt to forget their young if watched while they are feeding.

It is estimated that a pigeon of the average size will need an ounce of food a day, together with plenty of grit, salt, and fresh water.

Where a loss of appetite and indisposition of the bird is noticed, a good remedy is to feed a little hempseed, add precipatated chalk to the drinking water, and keep a good supply of grit and salt-cat within reach. It will greatly help if the bird is isolated for a day or two.

Squabs can not see until about eight days old.

A good weight for dressed squabs is eight pounds to the dozen.

The eggs hatch on the eighteenth day of incubation.

In stocking the loft, allow two nests for each pair of breeders.

As a rule, the breeding season extends from March to September.

The first egg is generally laid about two weeks after the nest is made.

While the house must be dry and warm, it is not advisable to add artificial heat, excepting in the case of very large structures.

The Homer is a strong, well-built bird, of good size, thrives in confinement, is an earnest breeder and a careful feeder.

The Runt is the largest of the pigeon family, but they are slow breeders.

Never feed new grain, as it is apt to cause bowel troubles.

Rye is a grain that should never be fed, as it is very laxative and liable to cause severe intestinal irritation and death.

Hempseed must never be fed liber-

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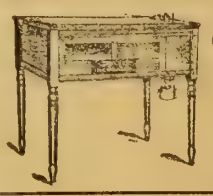

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ally, as it is very heating and fattening.

An overcrowded loft is both unprofitable and dangerous.

When the young birds are about two weeks old, the wing and tail feathers generally start growing. The small feathers follow these.

The old birds quit feeding their young as soon as they hatch out a new pair of squabs.

It is a mistake to build the house directly on the ground. Such lofts are usually damp, and besides are hard to keep rat proof.

There should be no cross-pieces in the middle of the fly, as birds are often injured by flying against them in a sudden flight.

The small, round louse, found on the head and body, is the most troublesome.

Before placing new stock in the loft, it should be quarantined for a week or so.—Petaluma Poultry Journal.

CHICKEN CHAT.

Turkey and Hen Died.

I have lost a turkey hen, a pullet and a young rooster. No two of these were sick at once, but they all acted the same. They begin by stretching up their necks and acting as if they had swallowed something that would not go down; that was the only symptom for several days, then they began to mope and act as if hungry, but unable to swallow. Examination showed nothing wrong with mouth or throat, and no lump in the crop except in the case of the turkey a few days before she died. I gave her sweet oil and rubbed the crop, but could do no good. Water ran out of their mouths when they bent their heads down to eat. They attempted to eat to the very last, yet seemed to starve to death. Another rooster is beginning to stretch his neck. The trouble has only appeared among those which are running out. They are fed on wheat and Egyptian corn, and have pure water. The droppings appear nearly natural—perhaps a trifle whiter than usual, and with a little green in them. The combs look red until nearly the last, when they get a little dark. They are sick about two weeks, the turkey longer than that.—Mrs. S., Pomona.

If your fowls had access to barley, I should think perhaps they might have barley beards choking them up somewhere, as their symptoms were exactly the same as those in a horse we had, which we thought had lockjaw for a few days, but by using plenty of linseed oil we saved her.

If there is any alkali land near you, the birds may have picked up chunks of that, which would cause these symptoms, as also would the deadly nightshade berries so common here.

Or, there may have been some unslaked lime around, which they got at. It must have been something they got while running out, if those kept in are not affected; some poisonous food, which should be looked after: if not barley.

* * *

Pigeons.

I bought 75 pairs of pigeons. Some are mated and some not. I am trying to coax them out to hunt their living, but it seems quite a task. They are Homers. Will they finally do so? Does it pay to raise squabs if one has to feed them entirely? I don't see how I can separate my pigeons—the mated from the unmated—if I let them fly out.—C. A. B., Chatsworth.

Pigeons will not forage for a living after having been fed, so it is useless to try to teach them to do so. Squabs are considered very profitable, and are less trouble than other fowls, for the old bird feeds the young entirely while in the nest, and squabs are marketed before they learn to fly at all.

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Winners of prizes in the Southern California Poultry Show just closing at Chutes Park are as follows:

Plymouth Rocks. Barred: Fred Espee, D. F. Wieland. Whites: E. D. Gutting, E. E. Emerson, G. A. Taplin, H. H. Mumford, J. W. Whitney, A. Rankin. Buffs: F. Esterwold, S. E. Salisbury. Columbians: John Brenton.

Wyandottes. Silver Laced: A. E. Nelson. Golden Laced: J. P. English. Whites: Huskins and Purcell, White Wyandotte Farm, G. M. Johnston, Mrs. E. B. Strong, Miss A. M. Curtis, A. W. Huskins, Edison Early. Buffs: O. S. Hoffman, A. W. Huskins. Columbians: A. H. Memmler A. B. White, James Underleiter, W. W. Felgate, J. W. Whitney. Partridge: C. L. Hogue, Charles Andrews.

Rhode Island Reds. Single Combs: Lake Avenue Poultry Yard, W. F. Cleveland, A. B. White, C. E. Winslow, W. F. Greenleaf, H. F. Thompson, C. L. Hogue ,Rose Combs: C. E. Winslow, W. H. Pickering.

Black Cochins. W. J. Blackman.

Langshans. Blacks: J. W. Wright, J. F. Boyd

Leghorns. S. C. Whites: Swanson & Johnson, Goodman Bros., Rancho Los Encinas, Olin L. Livesey. S. C. Buffs: Lindgren Bros., S. E. Salisbury, Mrs. W. H. Obear. R. C. Buffs: Dr. Holmes. Partridges: Chas. Andrews.

Minorcas. S. C. Whites: E. E. Saunders, T. H. Bowen, S. C. Blacks: B. G. Page, B. E. Ross, H. E. Cobb, C. C. Bonnell, Dr. E. Palmer, R. Oldworth. R. C. Blacks: Eleanore Farm, J. M. Wright.

Light Brahmas: W. R. Struthers, John Holt.

Mottled Anconas: J. H. Weller.

Orpingtons. S. C. Buffs: C. H. Towle, Goodacre Bros., George Sills, J. J. Dean, P. P. Garrett, Mrs. A. T. Lloyd, S. C. Blacks: C. A. Lathan, B. H. Lloyd.

Cornish Fowls: Alex Aikman, J. D. Mercer.

Special prizes not awarded as we go to press.

Bees and Their Care

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he

BEE NOTES.

He will be willing to keep a few bees—yes, he would be very glad to do so if he could place a few colonies in his orchard without having to "everlasting swarm."

This difficulty may be very largely overcome.

Bees swarm primarily because of a lack of room. If, instead of using a single hive, we use one of double capacity, one on top of the other, the swarming tendency will be very materially curtailed.

I therefore advise the farmer and fruit grower to use hives of large size, or else use hives of ordinary size one piled on top of the other.

The bees and queen should be given unlimited room, and they should be run for extracted or chunk honey—not for honey in the little section boxes that one sees in stores.

It is assumed that the farmer fruit grower does not care for honey in sections. For his own family, this chunk honey stowed away in large stone crocks will suit his purpose quite as well as that stored in the small boxes seen in the groceries.

For that reason the honey should be stored in regular frames or "racks," as some call them, that hold the comb. It may then be taken off and stored in the crocks.

At the beginning of the season one story of a Langstroth hive will be enough. Just before fruit-bloom opens up, another story should be added, containing empty combs or frames of comb foundation. As the season advances another story should be added.

In the meantime a large unobstructed entrance should be provided at the bottom. If the bees cluster out in front they will be almost sure to swarm; so at all times there should be enough room provided so they can be kept inside of the hive and at work.

Colonies so manipulated may store for the fruit grower, from fruit bloom and clover, anywhere from 50 to 200 pounds of fine honey, which will be worth at the very lowest calculation, in the form of chunk honey, at the local groceries, not less than 10 cents per pound.

It goes to show, then, that in a fair season our fruit-grower farmer, to say nothing of the actual benefit of the bees in scattering pollen, may get anywhere from $5 to $20 per hive.

But if the latter figure is reached, the fruit grower must be willing to spend a little time on the bees—perhaps an hour to the hive for an ordinary season.

Some colonies handled in the manner explained may swarm; but as a general thing there will not be over five per cent of such swarms.

As a precaution in such cases, put over the entrance of each colony an Alley trap. This will allow the workers bees to pass out and in freely; but when the queen comes out with a swarm, she is trapped in a compartment, because she cannot go through the same slot through which the workers can pass.

While the swarm is in the air, the trap containing the queen is taken off, the old hive is removed from the stand from which the swarm came, and another (empty) is put in its place.

When we speak of an "empty" hive we mean one containing frames of foundation or combs.

The trap is then placed in front of the new hive now on the old stand. In fifteen or twenty minutes—possibly longer—the swarm in the air will return and go into the new hive, hiving itself automatically.

The queen is released from the trap, when she will go into the swarm. The bees will then start housekeeping anew.

In the meantime there has been no climbing of trees, no pounding on tin pans, and no general interruption of farm work.

When the swarm comes out the farmer's wife or one of the children may make the substitution of hives as explained, leaving the farmer in the field to continue his work.

By modern methods it is not necessary that the farmer himself give very much attention to the bees. He can turn that all over to his wife or children and if he will let them have all the money they can make from them we may rest assured they will soon acquire the art of handling them and at the same time lay aside a nice little sum of money.

It should be stated in all fairness that there are some seasons when the bees will hardly make their own living.

Indeed, they may require to be fed sugar sirup in order to keep them from starving outright. But usually there is only one poor season out of four or five.

In the good years the bees will more than make up the cost expended on them several times over

The keeping of a few colonies—eight or ten—will give very much larger returns per hive than the keeping of a larger number.

FEEDING BEES.

If the bees are gathering little or no honey, feed a pint of sirup every other day to stimulate brood rearing. Bees reared about this time will constitute the colony that will winter best.

Look out for robber bees. Give the feed toward evening, after they have stopped flying.

In feeding use a two quart Mason jar, and punch a lot of small holes in the metal cap; or get the perforated caps from some supply house, and after putting the sirup in the jar screw the cap on.

Secure a board the size of the outside edges of the hive, and cut a round hole in the center, just large enough for the metal cap to set down in, and place it over the brood body of the hive. Place an empty hive body on, put the feed in, and place the lid of the hive over all.

See that no colonies are queenless at this season.

Give frames of hatching brood from the stronger to the weaker.

Make every colony strong, or else the bee-moths will destroy them.

To avoid the anger of bees, no method has ever been found that compares with the use of smoke. This evidently frightens them more than any other thing ever tried.

Since modern science has done so much to simplify the care and management of bees, there is no reason why every family living in the country should not keep a few colonies for its own use.

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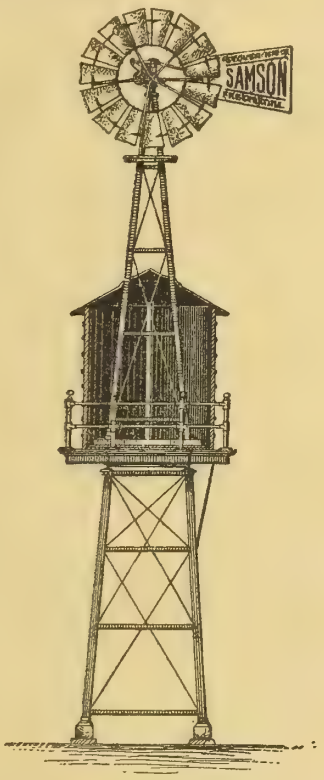

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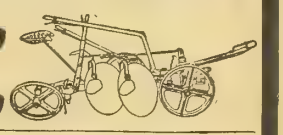

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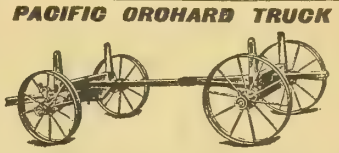
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Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Uusigned communications receive no attention.

Storage of Sweet Potatoes.

How can I keep sweet potatoes during the winter months here?—W. H., Sunland.

Any method that will keep the potatoes dry and at a temperature nearly uniform will succeed. And in well drained sandy loam I have kept them perfectly in the ground where they grew. For a small quantity, I have been very successful in keeping them in perfectly dry sand in the barn. But no method known to me will keep sweet potatoes over winter that have been carelessly or roughly handled. They are very susceptible to bruising, and while it may not show at once, it will be very apparent before spring. They should be dug before frost has killed the vines, and handled as carefully as you would handle eggs. Allow them at least a day in the sun to dry before putting them away. It is a disputed question among growers whether it pays to store for a higher price—many are of the opinion that the risk from decay more than equals any advance in price.—Q. A. L.

Ditch Manuring.

Under "Queries and Replies," on page 613 of December 24th issue, I notice the query on "Ditch Manuring." Perhaps the subscriber has reference to the spreading of manure in ditches. I have known some who open deep, wide furrows with single shovel, two furrows between each two rows. The wagons drive between the furrows and the manure is shoveled into the furrows or trenches instead of being spread on the surface. As fast as the trenches are filled the furrows are closed with a common cultivator on which are fastened at proper angle two boards two feet long in such a manner as to draw the dirt from sides of furrow back over the manure, covering it completely and immediately. I have observed this method in one grove in West Riverside, and understand it has been followed by others. The idea is, I think, to conserve the liquid manure by preventing evaporation from the surface, or finer particles from being blown away. It seems easier to cover the manure this way than by plowing it in when plowing would be otherwise unnecessary, as in fall or early winter.—D. E. Furrow, Riverside.

Mr. Furrow adds in a postscript that this custom, which has been followed by a few, has not received the endorsement of the citrus experiment station located at Riverside; in fact, the general preference in Riverside is to scatter broadcast during winter season, then plow under the same as green manuring, at springtime. Regarding Mr. Furrow's point of conserving, by covering the liquid manure, which if left on the surface would dry away, we tnink it is hardly well taken, because the evaporation of the liquid does not necessarily carry with it the salts which contain the fertilizing element. Of course, where fertilizer has been partially decayed and ammonia generated by this process, the escape of ammonia does cause loss of nitrogen. But manure containing the liquids of the stable taken directly from the stable have but little ammonia to be lost in this way. We thank Mr. Furrow for his statement of this system, and will be glad to hear from him again, or other subscribers as to their opinion on it.

Pruning.

How should apple and pear trees be pruned? My trees are two years old, with long, straight limbs. Should they be cut back? How can I tell the difference between a leaf and a fruit bud on peach, apricot and plum trees? Will Bordeaux mixture benefit grape vines?—E. H., Riverside.

We hope to give next week more explicit instructions regarding pruning of deciduous trees. In a word, at planting, the young trees should be cut back to say 30 inches. The first season's growth should be kept off that part of the stem which is close to the ground. The second year leave say three or four strong limbs so separated as to balance the tree well, cutting back to six or twelve inches. Cut to outside or inside buds according to habit of growth of tree and to your desire of growing an open or compact crop. The next year allow two or three laterals to each of these main branches and cut back at least half the preceding season's growth.

The leaf bud is not so large nor thick ordinarily as the fruiting bud. The terminal bud is usually—whether on main stem or spur—a fruiting bud.

Bordeaux mixture is used on vineyards to prevent spread of mildew, which affects the grapes when they start in the spring time. Many up-to-date vineyardists spray thoroughly in winter and then sulphur at blossoming time and later to prevent the spread of this pest of the vineyards.

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 555-557 S. Los Angeles street, Los Angeles.

Pruning.

Please give hints on pruning and planting of young trees. I am well pleased with your paper.—I. T. S., Fortuna.

Your query will be given answer in deciduous department of next week's paper.

Fig Cuttings.

I notice in your paper of December 17 an article on fig culture, stating that valuable specimens of cuttings would be distributed. I would be glad to know where I can apply for the cuttings.—D. B., Hanford.

The particular charge of these cuttings to which you refer is in the hands of Mr. Rixford, who is under the direction of Prof. Walter T. Swingle of the Bureau of Plant Industry, Department of Agriculture. It is possible they might be secured by addressing Mr. Rixford, who lives in San Francisco, but we think the better way and possibly the quicker would be to write to the Bureau of Plant Industry, Department of Agriculture, Washington, D. C. To secure these cuttings you must agree to plant and care for seedling figs, which will also be supplied to you by the department.

Insect Eating Leaf.

Please inform me through the Cultivator what insect attacked the enclosed orange leaves.—G. O., Ontario.

The leaves enclosed have been attacked by some mandibulate insect and the edges of all and almost all of one entire leaf have been eaten. It is an injury such as might have been given by the cut worm or some other similar eating insect. To say what insect it was would of course be utterly impossible. If our subscriber will secure the insect and send in to this office we will identify and give information.

Seedling Lemons.

Is anything known positively about seedling lemons as a stock for budding citrus trees? The opinion is common that they are liable to gum disease. I have observed that they are quicker and stronger than either the sweet or the grapefruit seedling.—D. E. F., Riverside.

We think the opinion that the lemon stock is susceptible to gummosis is correct. At any rate, we know it has been tried for many years, and the sweet seedling or sometimes the sour orange seedling or the pomelo stock is considered the best. The vast majority of our trees are on the sweet seedling root. You say truly the lemon root gives a strong growing healthy looking tree, but one very susceptible to disease.

Phosphoric Acid for Citrus Trees.

The soil in my citrus orchard is deficient in phosphoric acid and lime and I have been advised to use high

grade 18 to 20 per cent phosphate fertilizer, preferably the Thomas phosphate as it contains a great deal of lime. Is the Thomas phosphate as quickly available as superphosphate, both being the same grade, and how much lime do I lose by using the latter?—J. A. W., Escondido.

If your soil is the red or iron soil, the Thomas phosphate would be best, while the acid treated phosphate would be preferable in case of the darker colored soils. As a rule, the superphosphate or that which has been treated with the acid is preferred, at least where it has the same percentage of phosphoric acid as the other. It is, of course more quickly available.

Lime Application.

Is sugar factory lime good to apply to soils? Is air slaked better? I notice in a recent Cultivator that unslaked lime is preferable. Is gypsum to be preferred in any case? When I irrigate, if the ground is not immediately cultivated, very often it becomes lumpy and before the season is over forms a crust of three or four inches just below the cultivated mulch. Have had a cover crop for three years.—D. P., Covina.

The sugar factory lime has been applied to soils with most excellent results and from your description we believe it would make a good application on your soil. Plainly the need of humus is there notwithstanding your green fertilizing, and we think that should be continued and an effort be made to secure as heavy a crop to plow under as possible. This, with the application of lime, will tend to make your soil lighter and more easily handled. The factor in favor of sugar factory lime is that it is much cheaper than the air slaked or the hydrated lime about which the paper recently spoke. We do not think there would be any material gain in using gypsum in preference to lime and the gypsum would be very much more expensive. We hope to be able to give more complete answer as to comparison of the different limes and gypsum in a later issue.

Budding Cloth.

Please give me formula for making waxed budding cloth. Also can you give me the latest method of budding old trees?—A. E. R., Rialto.

Resin, 6 lbs.; beeswax, 2 lbs.; linseed oil, 1 pint. Break the resin into small pieces, cut up the beeswax and place the two together in a suitable iron pot. Pour the linseed oil over them. Set the pot over a slow fire and allow the materials to melt. For waxed cloth, saturate thin muslin with the wax. Prepare the cloth by tearing it into strips four or five inches wide and winding it around sticks about a foot or so in length and one inch thick. The rolls should not be more than two inches thick, else the wax will not penetrate to the center. Melt the wax over a slow fire, place the rolls in it and allow to remain there until the wax has penetrated the cloth. The wax should not be allowed to become too hot, else there is danger of burning the cloth. Have it just hot enough to keep the wax in a melted condition. As soon as it is saturated, remove the cloth from the wax and store away. When required for use, unroll the desired length and tear it into strips one-half to three-quarters of an inch wide. Some people, instead of cutting the cloth into strips, stretch out the cloth and apply the hot wax to its surface with a brush.

Some prefer to cut back an old tree in the springtime quite severely so that it sends out new shoots all around the head of the trunk or limbs at the point of cutting off. These strong young shoots are allowed to grow until, say, September or the first of October, when they are budded just as a young tree would be in nursery rows. Others prefer to insert the bud in the old bark at points where it is desirable to have the new branches start. These buds are less liable to take than the other, but if they do, make a very successful union, and time is gained over the former process. This budding is almost invariably done in the spring. Budding in the old bark is seldom successfully done at the fall budding.

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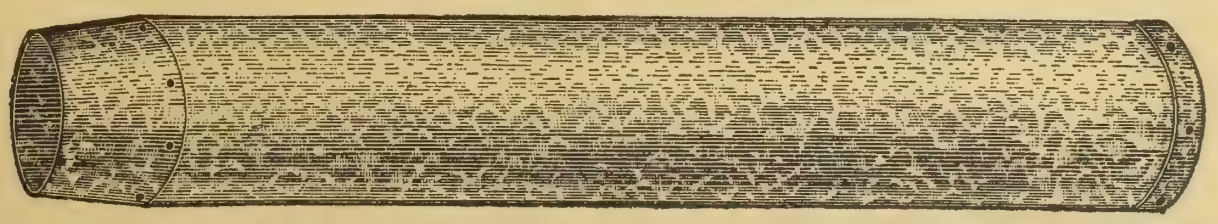

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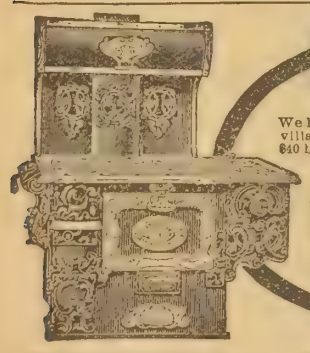

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Wind-tossed, with stem atilt;
One night unseen
Some gasoline
Onto this rose was spilt.

Adulterated flower juice
A bee did sip next morn;
And now he does
No longer buzz,
But honks just like a horn.
—F. P. Pitzer, in Harper's Weekly.

THE RING.

"I SAW you making eyes at the city chap," growled Bert Linwood. "I tell you, Betty, I ain't going to have my wife flirting with a lot of dudes who are only laughing at her."

"I'm not your wife yet," snapped Bett "and I'm never going to be. I bowed to Mr. Mines, but I didn't make eyes at him."

" You did so," insisted Bert. "I saw you. You don't have to grin like that every time you bow."

Betty's eyes began to fill with tears. She loved Bert; she had loved him for years, but this new unreasoning jealousy was spoiling her life. She drew off the ring and handed it to him.

"You'd better take that," she said. "You might use it in Turkey. Men lock their wives up over there. That's the sort of place you want to live in."

"I don't want the ring," he demurred. "I just want you to behave yourself."

"I guess I can't behave the way you want me to," she said. "You don't want me to be civil to any other man. Look how you wanted to thrash the clown at the circus last month just because he pretended to admire me. He was only joking, but you declared I must have given him encouragement. I was just laughing at him because he was funny."

"I didn't see where he was funny," snapped Bert, still smarting at the recollection of the cleverness with which the clown had turned his objections into comedy. "If you feel that way about it I guess I might as well take the old ring."

He tucked it into his vest pocket and, with an elaborate assumption of indifference, sauntered away.

Betty sought a quiet corner and sat down for a good cry.

It was always like this, Bert's unreasonable jealously spoiled every merry-making, but she had hoped that the Sunday school picnic might pass off pleasantly. It was at Canoe portage the year before that Bert had proposed, and she wanted the anniversary to be as happy a day.

Had it not been for Martha Spriggs, Betty would have enjoyed her cry in solitude, but that energetic spinster seemed to scent trouble, and she shortly appeared upon the scene. Bit by bit she drew the story from Betty and adminstered comfort. Then she bustled about the boat.

Most of the excursionists belonged to the same church. The rest were old friends, and before the steamer came in sight of Portage Island landing everyone knew of the trouble.

Bert was sensible of a change in the attitude of the crowd, but he pretended indifference and told himself that "if that little cry baby wanted to tell her troubles he was well rid of her."

After landing he stood on the dock watching the steamer continue on her way down to the end of the lake, and then strolled over to the grove where most of the shady spots under the trees were occupied by the basket parties.

The clean white tablecloths covered with a display of eatables tempting both in appearance and odor reminded him that Betty had packed a basket for the two of them, but Betty was sitting with Martha Spriggs and her crowd, and appeared to be blissfully ignorant of his fate.

He strolled about in the hope that someone might invite him to sit down and have a bite with them. As a rule, a dozen invitations would have been hurled at him upon his appearance, but now all seemed engrossed with their own parties, and though he went the whole length of the grove none asked him to share the feast.

Bert went miserably back to the dock. Here at least he did not have to look at Betty and the city chap (who was Martha Spriggs' nephew) chatting gaily over a bountiful lunch. It was the final touch of misery.

The island was state land well out in the lake. It was deserted except when picnic parties came, and there was no chance of obtaining food, neither were there small boats by the aid of which he might gain the mainland.

He had breakfasted early on account of the picnic, and now he was downright hungry. He would not give Miss Spriggs the satisfaction of knowing that he had been forced to ask for food, as he could see clearly that it was she who had put the entire excursion party up to ignoring his famished condition.

But pride is a poor substitute for provender, and the sight of the 200 or 300 picnickers all eating was more than he could stand.

He sought out the little place where he and Betty had lunched the year before. It was a little cove well sheltered from the rest of the shore, and there he lay down under the shade and sought to take a nap.

Even sleep appeared to have deserted him. He tossed restlessly about on the grass, but no sleep came and he was just about to return to the grove when a light footfall arrested his attention.

He lay back on the grass in the hope that his presence might pass unnoticed, but whoever it was was coming straight toward his retreat and presently he heard his name spoken and looked up to encounter Betty's pitying gaze.

"It was a mean trick," she said, penitently, "but I could not help myself. Anyhow, I kept two sandwiches for you, Bert. I'm sorry that there is not more, but it was all I could do to hide these. Miss Spriggs would never forgive me if she knew I brought them. I saw you going across the grove, and knew where to find you."

"You're a darling," said Bert as he bit hungrily into the bread and meat "That old maid would not have cared if I had starved to death."

"I guess it wasn't as bad as that," laughed Betty, "but I didn't want to see you go hungry. I must hurry back now, or they will find out."

"Don't go yet," he pleaded. "I've a whole lot to say to you."

"But they will be looking for me," she pleaded, "and I promised. I can't stop, Bert."

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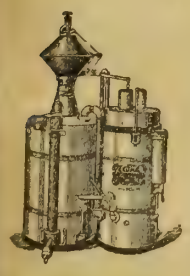
Light and Cook WITH **Colt** TRADE MARK **Acetylene**



Favor us with an inquiry concerning Colt Acetylene. We shall take pleasure in sending you free of charge our excellently compiled 44-Page Catalogue containing complete and instructive matter regarding piping, fixtures, stoves and burner pertaining to this wonderful and inexpensive lighting system.

Fowler Shankland, Pacific Coast Distributor

204 Severance Building
Cor. 6th and Main, Los Angeles
Phones: F7514; Main 4830

$75 to $95 PER MONTH

For Men or Women

15 to 35 years of age, after short period of instruction in railroad and commercial telegraphy. Pleasant, clean work, short hours. We place all graduates. Demand is greater than supply, due to recent eight hour law. There is a

BIG FUTURE

for the ambitious. Many high railroad officials began as operators. Only a nominal charge for instruction. We run this school not to make money, but to supply operators for our system.

Write **S. P. TELEGRAPH SCHOOL**
542 Central Ave. Los Angeles, Cal.
This ad may not appear again. Write NOW

Crimson Winter RHUBARB

$1.50 a dozen, $6.00 per 100, $40.00 per 1000. Now is a good time to plant. Pedigreed Stock. Fruit Trees and Berry Plants of all kinds.

J. B. Wagner, Pasadena, Cal., Barb Specialist.

BOYS LEAVE THE FARM

When good, clean, manly amusement is not provided. But you can

KEEP THEM HOME

with a Portable Billiard and Pool Table? All sizes. All prizes. Catalog?

C. Ridderhof, Laughlin Bldg., Los Angeles

When writing advertisers, mention Cultivator.

"Yes, you can," he declared as he laid a detaining hand upon her wrist. "You can stop, and you're going to. It will be all right when you go back, for you can tell old Miss Spriggs that her cure worked."

"What do you mean?" she asked wonderingly. "Miss Martha spoke of no cure."

"But she was working one," he explained. "She says the way to a man's heart is through his stomach, and she's trying it on me. But it ain't that," he said fiercely, "it's because I realize what a fool I've been. I want you to forget all that I said about young Mines and give me another chance. I ought to be glad that the girl I'm going to marry is such a favorite. I guess I am now."

Hope leaped into Betty's eyes, but she shrank back as Bert offered the ring.

"I'm afraid," she whispered. "You see, Bert, it's happened so many times, and it always spoils my pleasure because you get jealous when we get in a crowd. I don't care for anyone but you, but a girl has got to be pleasant to people she knows, and you won't realize that."

"I do now," he said soberly. "Like the people you read about in the [illegible] I've been fasting and meditating. It's been good for me, too. Won't you take the ring and give me another try, Betty? I'm cured this time, and if I ever do start to kick you yell 'Lunch' at me and see me curl up."

Three hours later they crossed the gangplank of the steamer homeward bound, and Martha Spriggs, on the upper deck, smiled softly to herself.

"Men ain't got no hearts," she told herself for the thousandth time. "They got stomach and brains, and most on 'em's got more stomach than brains."—Jacksonville Times.

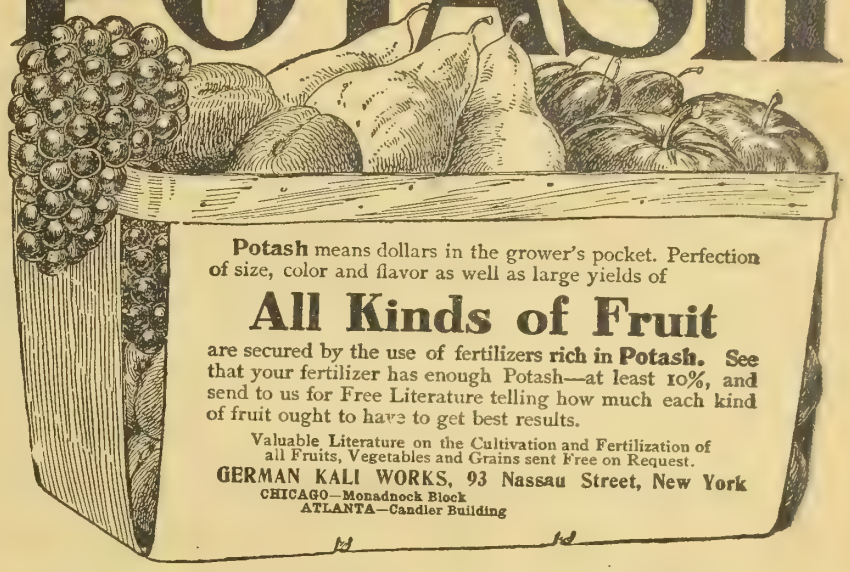
Pretty Home-made Rugs

THERE are occasions when one desires some trifling yet useful occupation, and by devoting the idle hour to preparing material for pretty and serviceable rugs one can soon have enough balls for several of them and they can be knit or crocheted into rugs of any desired size. The crocheted rugs offer more varieties of forms than any other and they are very neat and durable. The pieces are cut into narrow, even strips as for carpet rags, then they are neatly sewed together and wound into balls. A pretty one is made by making a chain five inches long and working all around in single stitch, widening here and there to keep it flat, and any one who understands using the crochet hook can make one of these rugs, and one can use their own taste and ingenuity in arranging the colors.

A lovely crocheted rug, oval in form, was made entirely of woolen pieces and was shaded from pink in the center to garnet on the outside, and the faded and light colored woolen pieces were colored red with the diamond dye for wool, the different shades of the same color being produced by using the dyes in different strengths.

Perhaps the easiest way to make a rug is to cut the cloth in strips about three inches wide, then lay three or four of the strips together, lay them on a foundation made of some stout material and of the shape and size you want the rug to be. Stitch the first row through the center, and turn back, and stitch the next row as close to this as possible, and keep on in this way until the rug is finished. The strips can be cut into fine fringe as you sew each one on to the foundation, they can all be sewed on and then cut into fringe. This is a nice way to utilize old ribbons, as there can be nothing nicer than a soft rug of this kind for the bedside. If desired the colors may be arranged in a simple pattern, adding greatly to the beauty of the rug. Thesse homemade rugs are just as serviceable and help to beautify the home as much as the high priced ready made articles.—M. H.

POTASH



Potash means dollars in the grower's pocket. Perfection of size, color and flavor as well as large yields of

All Kinds of Fruit

are secured by the use of fertilizers **rich in Potash.** See that your fertilizer has enough Potash—at least 10%, and send to us for Free Literature telling how much each kind of fruit ought to have to get best results.

Valuable Literature on the Cultivation and Fertilization of all Fruits, Vegetables and Grains sent Free on Request.

GERMAN KALI WORKS, 93 Nassau Street, New York
CHICAGO—Monadnock Block
ATLANTA—Candler Building

Meyer, Wilson & Co., San Francisco, Cal., are Sole Agents for the Pacific Coast

Malthoid Roofing

F. P. Wilson, owner of the Wilson Building, Dallas, Texas, says: "My roofing laid in 1904 has given excellent satisfaction in every particular. I advise anyone who intends putting on a good roof to investigate the merits of Malthoid before making purchase."

The Paraffine Paint Co. San Francisco California

E. G. Judah, General Representative, Security Bldg, Los Angeles

$16.30 buys this handsome six-hole Nickle-Trimmed Cast Range direct from the Manufacturer

without high shelf. With high shelf, just as shown in the cut, $19.97; large oven, six cooking holes, best quality of iron. Burns coal or wood. Handsome nickle trimmings. OUR TERMS are the most liberal ever made. You can pay after you receive the range. You can take it into your own home and use it 30 days. If you don't find it exactly as represented, the biggest bargain you ever saw you won't have to keep it.

Write today for our beautifully illustrated Stove Catalogue No. 101-C. A postal card will do it. Don't buy until you get it.

P. F. Ross & Co.

268 Market St. San Francisco, Cal.

201 Killed

in one day with one bottle

Bille's Gopher Poison

Circular with affidavit and many testimonials. Not a common Poison—in a class by itself. Endorsed by Agricultural Experiment Stations. $1.25 for large bottle. Money refunded if not as represented. If not sold by your dealer, we will prepay express on two bottles on receipt of $2.50. Or $1.75 for one bottle Poison and one bottle Poultry Remedy (best made) express prepaid. Send for free Booklet. Send us 10 names of persons having poultry and we will mail you an Egg Separator. Very handy and useful.

West Coast Mill

Los Angeles, Cal.

SECOND HAND PIPE

We will sell you pipe that can be used for any purpose. ***Satisfaction guaranteed*** or money returned. We handle all sizes of standard pipe and casing. Shipments made on same day as order is received. Price of pipe is low now. Write for our prices.

Pacific Pipe Company

S. W. Corner Howard and Main Streets, San Francisco, California

The Produce Markets

Los Angeles Markets

LOS ANGELES, Cal., Jan. 6, 1909.

Butter.

Butter is exactly the same in quotation as last week. There is a good supply in storage but so controlled that it is predicted that a fair price will prevail until the end of the season.

Produce Exchange wholesale quotations are commands 2½ cents in advance of quotations.

Creamery ex per roll	67½
Firsts	62½
Dairy per roll	62
Eastern extra per roll	65
Ladles	24
Cooking	24
"Butterine"	16@20

Cheese.

Southern California Anchor	17@19
Northern fresh	16@16½
Longhorn	18@19
Eastern singles	15½@16¾
Cheddars	17
Swiss	17@17½
Imported Swiss	27@28
Daisy	17¼@17¾
Oregon	16½
Limburger	18@18½

Eggs and Poultry.

Fresh eggs have advanced from 1 to 3 cents per doz. The storage stocks are running so low that the increase in supply of fresh is taken at an advance on former quotations. Market is very firm.

Eggs local candled	41@43
Eggs case count buying price	38
Storage selected	34@35
Eastern storage short time	35@37

Dealers pay for live stock.

Hens per pound	12@14
Young roosters per pound	16
Fryers	16
Broilers per lb	21
Roasters	15@16
Old rooster	7
Turkeys	16@20
Geese	12@13
Ducks	12@13
Squabs	1.25@1.75

Live Stock.

The following quotations are f.o. b., Los Angeles, on all stock.

Hogs from 175 to 200 pounds	6¼
Prime steers	4¾
Heifers	3¾@4
Calves per pound	4½@5
Sheep ewes per head	3.25@3.75
Lambs per head	2.50@3.00
Wethers	4.00@4.50

Potatoes.

Wholesale prices are:

Sweets per ctl	1.50@1.60
Northern Early Rose fy	2.00
Northern Burbanks fy	1.10@1.30
Local Burbanks	1.50
Highland fancy	1.00@1.30
Coast	1.65
Salinas	1.65
Oregons Early Rose	1.85@2.00

Onions.

Wholesale quotations:

Australian Browns	1.75
Danvers	1.75
Globes	1.50
Garlic	12

Vegetables.

Asparagus per doz	1.25
Artichokes per doz Northern	1.50
Beets per doz	40
Bell peppers per lb	10
Beans string	11@12
Beans Limas per lb	8
Brussels sprouts per lb	11
Cabbage sack	1.40@1.65
Cabbage red	3
Celery per crate	3.00
Chili per lb	5
Chili dried	10@11
Chicory per doz	40
Cucumbers per doz hot house	40@75
Cauliflower per doz	50@75
Carrots per doz	35@40
Egg plant per lb	6
Green onions per doz bunches	25@35
Horseradish per lb	12
Lettuce per crate	1.25@1.35
Lettuce choice	75
Mushrooms per lb	35
Peas sugar per lb	8@10
Parsley	30@40
Parsnips	35@40
Rutabaga per doz	40
Rhubarb	1.25
Radishes per doz	15@20
Salsify	40
Summer squash per box	1.40
Spinach per doz	17@20
Turnips doz bunches	30
Tomatoes lug box	80@1.25

Citrus Fruits.

Navels fy	2.00@2.25
Navels ch	1.50
Tangerines	1.85
Grapefruit seedless	3.50
Grapefruit seedlings	3.00
Lemons fy	2.50
Lemons choice	1.00@1.50
Limes per basket	50

Fresh Fruits.

Wholesale prices on the market are:

Baldwine 4 tier	1.85@2.00
Bellflowers	1.00@1.15
Newton Pippins	1.10
Fall Pippins	1.25
Alexandria 4-tier	1.00@1.10
Colorado Jonathans	2.50@2.75
Red Pearmains	85@1.00
Spitzenberg	2.00@2.50
Casaba doz	75@1.25
Christmas melons per crate	75@1.25
Figs per fig box	1.25
Figs black per fig box	1.25
Guavas per basket	6
Grapes Tokay	1.50
Grapes Red Emperors	1.50
Pears lb	6
Pears Winter Nellis per box	1.25
Persimmons per lb	6@8
Pomegranates per box	1.75
Quinces	75
Strawberries per box	12

Beans Dried.

Wholesale prices:

Limas per ctl	4.50@4.75
Pink No 1	3.00
Lady Washington	4.25
Small white	5.00
Black eyes	3.50@3.65
Garvanzas	4.50
Lentils	7.00@8.00
Bayou	3.50

Honey.

Wholesale quotations:

Extracted Water White	8
Extracted Light Amber	6@6½
Comb W W	16
Comb white	15
Beeswax	30

Hay.

Prices paid to producers f. o. b. Los Angeles are as follows:

Barley No 1	17.00@19.00
Barley No 2	15.00@17.00
Alfalfa northern per ton	14.00@15.00
Alfalfa local	15.00@17.00
Tame oat No 1	18.00@20.00
Wheat No 1	16.00@18.00
Wheat No 2	14.00@16.00

Grains.

Wholesale selling price f. o. b., Los Angeles.

Wheat new per ctl	1.90
Kaffr corn	1.80
Corn Eastern sacked	1.80
White oats	1.85
Seed Rye	1.25

Feed Stuff.

Wholesale selling price F. O. B. Los Angeles as follows:

Cracked corn	1.85
Shorts	1.80
Bran	1.65
Oil cake meal	2.50
Feed meal	1.90
Rolled barley	1.65

San Francisco Markets

SAN FRANCISCO, Jan. 5, 1909.

Butter.

Immediately after last week's quotations butter advanced ½ cent that is to 37 after which it sagged under heavy receipts until it now stands at 34½. Heavy receipts hold quotations down but the market is in good tone at this time.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras per lb	34½
California firsts	32
California seconds	26
California thirds	20
Ladles extra	23
Firsts	21
Storage Cal ex	30½

Cheese.

California young American fy	16
Firsts	15½
California flats fy	14½
Firsts	14
Young American Oregon fy	16½
Eastern N. Y. Cheddars fy	17
Eastern fy	16½
Oregon flat fy	14

Eggs and Poultry.

Eggs have repeatedly advanced and delivered during the week. An advance was made after last week's quotation to 45 then down to 44 and again up to 46½ where they now stand with firm market.

Official quotations of the S. F. Wholesale Dairy & Produce Ex. are:

Fresh ranch extras	46½
Eggs first per doz	44
Eggs second	40
Cal Storage	36
Firsts	32½
Eastern Storage ex	32
Eastern firsts	31
Eastern seconds	29
Hens per doz	4.00@6.00
Hens extra	7.00@9.00
Young roosters	6.00@7.00
Old roosters	4.00@4.50
Fryers per doz	5.00@6.00
Broilers per doz	4.00@5.00
Geese per pair	2.00@2.25
Goslings per pair	1.75@2.00
Ducks young	6.00@8.00
Live Turkeys	20@25
Dressed Turkeys	27@30
Pigeons young	2.00@2.25

Live Stock.

San Francisco prices gross weight:

Steers No. 1	4¼@4½
Do second quality	3½@3¾
No. 1 cows and heifers	3¼@3½
Second quality	3
Hogs 100 to 150	5¾
Hogs 150 to 250	6@6¼
Rough heavy	4½@5
Calves per lb	4@5
Lambs spring	4½@4¾
Wethers No. 1	4¼@4½
Ewes No. 1	3¾@4

Potatoes.

Wholesale market quotations:

River whites fy	85@1.00
River whites poor	65@80
Salinas Burbanks	1.25@1.45
Sweets per crate	1.35@1.50
Sweets sacks	1.00@1.25
Oregon Burbank	1.00@1.15
Early Rose, seed	1.25@1.30

Vegetables.

Wholesale quotations:

Bell peppers per lb	12½@15
Brussels Sprouts	46
Celery per doz	40@60
Celery per crate	75@1.25
Cucumbers per doz	1.00@1.25
Chili peppers per lb	4@5
Corn per sack	1.50@1.75
Egg plant per lb	12½@15
Green peas per lb	12½@15
Lima beans	6@8
Mushrooms per box	1.00@1.25
Marrowfat squash per ton	10.00@15.00
Squash per box Southern	1.00@1.50
Onions green per box	70@75
Okra per box	1.25@1.50
Rhubarb per lb	4@5
Tomatoes box	50@75
String beans	17½@20
Wax beans	15@17½
Garlic new	6½@8

Onions.

Onions per sack	1.00@1.25

Citrus Fruits.

Navels ch	2.00@2.50
New Navels fy and large sizes	3.00@4.00
Tangerines crates	75@1.00
Grapefruit seedless	3.00@4.00
Grapefruit seedlings	1.00@2.00
Lemons ch	2.00@2.50
Lemons fy	2.50@3.25
Limes	4.00@5.00

Fresh Fruits.

Bellflowers	85@1.00
Bellflowers No 2	60@65
Spitzenberg	1.50@2.50
Newton Pippins	85@1.15
Grapes per crate	90@1.00
Winter Nellis	75@1.50
Persimmons	75@1.00
Quinces per box	50@65

Nuts.

Walnuts No. 1	13½
Walnuts No 2	
Almonds nonp	11½
Almonds IXL	10½@11
Ne Plus Ultra	9¼
Chestnuts, Cal	9½@14

Beans Dried.

Limas	4.00@4.15
Pink	2.45@2.50
Small white	4.50@4.70
Large white	3.75@3.85
Black eyes	3.25
Red Kidneys	3.50
Garvanzas	2.90@3.10
Bayo	3.00@3.10
Horse beans	1.75@2.25
Cranberry	2.90@3.10

Hops.

Hops new crop	5@7

Honey.

White comb	15½@16
Amber	10
Extracted W W	7@8
Extracted light amber	5½@6
Beeswax No 1 per lb	25@27
Beeswax No 2 per lb	24@25

Hay.

Choice wheat hay	20.00@22.00
Good wheat hay	18.00@19.50
Other grades same	16.00@17.50
Wheat & oat	16.00@20.00
Tame oat	16.00@20.00
Wild oat	15.00@18.00
Stock hay	12.00@13.00
Alfalfa	14.50@18.50
Straw per bale	60@95

Grains.

Wheat No 1	1.67½@1.70
Barley new	1.42½@1.45
Corn large yellow	1.80@1.85
Oats white	1.67½@1.75
Oats gray	1.65@1.72½
Rye new crop	1.45@1.50

Feed Stuff.

Bran per ton	29.00@31.00
Feed cornmeal per ton	37.00@38.00
Cracked corn per ton	38.00@39.00
Rolled barley per ton	30.00@31.00
Oil cake meal per ton	38.00@39.50
Cocoanut cake per ton	25.50@26.50
Middlings	33.50@36.00

Citrus Market

LOS ANGELES, Cal., Jan. 6, 1908

The orange market is much weaker owing to extreme weather over the East which lessens demand and makes impossible the best handling. About 85 or 90 cars per day are being forwarded. Some houses are opening but there is no likelihood of any material increase of shipments till the market strengthens.

Lemons are higher and the market is very firm. The imports will be affected by the disaster in Sicily and Italy and the cold weather in this state will reduce the spring crop so that the indication to hold is strong.

Shipments.

Total shipments since Nov. 1, 1908 oranges, 1958, lemons 675.

NEW YORK, Jan. 4.—Twenty-one cars navels, three cars lemons and three cars Arizona navels sold. The market is easier and considerably lower on all sizes and grades of navels. The lemon market is very strong and prices are higher. Weather mild, cloudy, muggy.

Aurora fy or E Peycke Co	$2.00
Deal sd E Peycke Co	2.05
Corona Queen ex ch Spence Ft Co	2.20
Premium ch Benchley Ft Co	2.10
Golden Flower ex fy Red. GO Ass'n	2.35
Heap Good fy Pattee & Lett	2.15
Orchid fy Altland Ft Co	2.00
Rescue ch Stewart Ft Co	1.90
Gobbler fy or Stewart Ft Co	2.10
Niagara fy Stewart Ft Co	2.40
ARIZONA NAVELS—	
Desert boxes	3.65
Cactus	2.90
Merit	2.70
Desert, half boxes	2.95
Cactus	2.00
CALIFORNIA LEMONS—	
Arab SA Ft Ex	2.60
Camel QC Ft Ex	2.45
Indpendent fy Growers' Ft Ex	2.85

Car lemons sold for the benefit of the earthquake sufferers in Sicily grossed $2023.

CLEVELAND, Jan. 4.—Rain predicted. The market is firm on good stock navels and lemons. Six cars sold. Fourteen cars on track. Two cars Florida oranges sold, $1.65 to $2.25, average $1.90. There is one car Florida oranges on track.

NAVELS—	
Lochinvar RH Ft Ex Highlands	2.50
Tiger ex ch SB Ft Ex Colton	2.30
Conqueror Ind Ft Co	2.20
LEMONS—	
Arab SA Ft Ex San Dimas	2.20
Pet SA Ft Ex San Dimas	2.55
Duck SA Ft Ex San Dimas	1.85
Golden Strand	2.10

PHILADELPHIA, Jan. 4.—Two cars navels sold. The weather is cloudy and warmer. The market is strong on large sizes navels. Three cars on track. Nine cars Florida oranges sold from $1.60 to $2.40, average $1.95. The market is higher on Floridas.

NAVELS—	
Puritan ex ch SB Ft Ex Rialto	3.00
State fy Randolph Ft Co	2.34
BENEFIT SALE—	

A car of Liberty and Foxaway brand of lemons (Loveless Fruit Company, Escondido) was sold for the benefit of the earthquake sufferers by the California Fruit Growers' Exchange, the car grossing over $2500.

ST. LOUIS, Jan. 4.—Weather cool. The market is strong on large sizes navels. The market on lemons is weak. Five cars sold, twelve cars on track.

NAVELS—	
Pico Semi-Tropic Ft Ex Whittier	2.15
Pocahontas TCC Ft Ex Zante	2.20
Hiawatha TCC Ft Ex Zante	2.10
Full Value TCC Ft Ex Zante	1.90
Lochinvar RH Ft Ex E. Hghld	2.65
Belt RH Ft Ex E. Hgld	2.55

CINCINNATI, Jan. 4.—Weather cool. The market is steady. One car lemons sold, also four cars Florida oranges. Florida Brights sold $1.85 to $2.25, Russets $1.65 to $2.20. There are six cars of California citrus fruit on track here.

BOSTON, Jan. 4.—Ten cars sold. It is raining. The market is easier on navels, unchanged on lemons. There are fifteen cars on track.

PITTSBURG, Jan. 4.—Four cars sold, five on track. The market is lower on navels, steady on lemons. Five cars of Florida oranges sold, average $1.85 per box. The market is steady on Floridas. Weather favorable.

Cream Separators, all sizes, all prices. O. J. Weber Co., 555-557 S. Los Angeles street, Los Angeles.

Nineteenth Annual Statement

State Mutual Building and Loan Association

OF LOS ANGELES

Office 223 South Spring St. Jan. 1, 1909

ASSETS

Loans and advances (secured)	$2,105,992.92
Accrued interest on loans	3,087.65
Furniture and fixtures	5,000.00
Cash on hand and in bank	30,059.55
	$2,144,140.12

LIABILITIES

Permanent capital stock and surplus	$ 113,340.79
Ordinary capital stock, surplus and reserve	828,629.02
Investment certificates	920,641.20
Payments on definite contract loans	244,483.40
Uncompleted loans	20,000.00
Matured coupons and miscellaneous accounts	17,045.71
	$2,144,140.12

In the year 1908 this association made 523 real estate loans, amounting to $612,650, made principally for building purposes.

In the 19 years of its existence, it has never failed to meet all demands when due, and has repaid its investors in that time over $3,000,000.

6%

Interest Paid

Directors and Officers

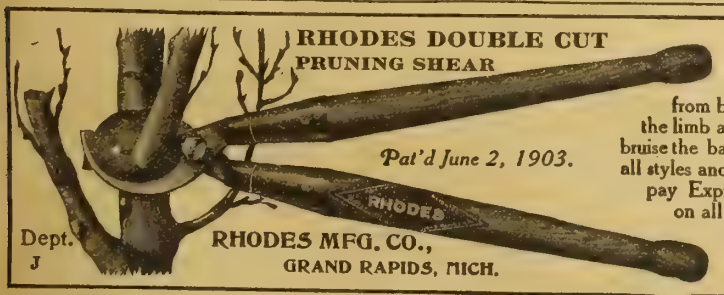
DR. W. G. COCHRAN, President.
A. E. POMEROY, Vice-President.
J. M. ELLIOTT, Vice-President.
W. D. WOOLWINE, Treasurer.
C. J. WADE, Secretary.

D. M. CUTHBERT, Loan Inspector.

Farm Implements

Sold direct to farmers, ranchers and consumers. We have no agents or dealers to whom we pay any commission. We also carry blacksmith coal, tools, and hardware not usually sold by implement dealers. The best of everything needed on the farm at the very lowest living price. Give us a mail order. Why not?

Los Angeles Vehicle & Implement Co.
110-112 No. Los Angeles St., Los Angeles, California



THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. We pay Express charges on all orders. Write for circular and prices.

Crimson Winter Rhubarb

$1.50 Per Dozen. $6.00 Per Hundred. $40.00 Per Thousand.
Superlative and other berry plants. Pedigreed stock only.
J. B. WAGNER - ***The Rhubarb and Berry Specialist***
Pasadena, California

When writing advertisers, mention Cultivator.

300,000 Eucalyptus

Fruit Trees
Shade Trees
Roses Shrubs
Palms Ferns

And everything that you need for your ranch or garden. Send for free catalogue

Sycamore Grove Nurseries
SAINT & WARNER
4584 Pasadena Ave. **Los Angeles**

FOR SALE

One 45 H. P. Steam Tubular Boiler.
One Dow Steam Pump.
One 5,000 gallon Iron Tank.
One 3,000 gallon Iron Tank.
One 4 H. P. Fairbanks Gasoline Engine.
All in good condition and cheap for cash.

West Highlands Water Company
Home Phone 772 **Highland, Cal.**

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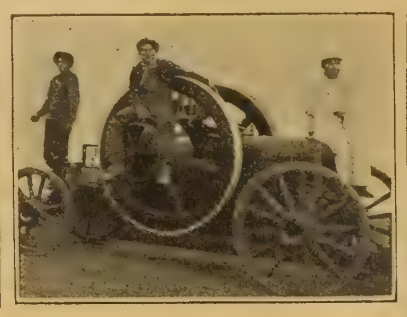

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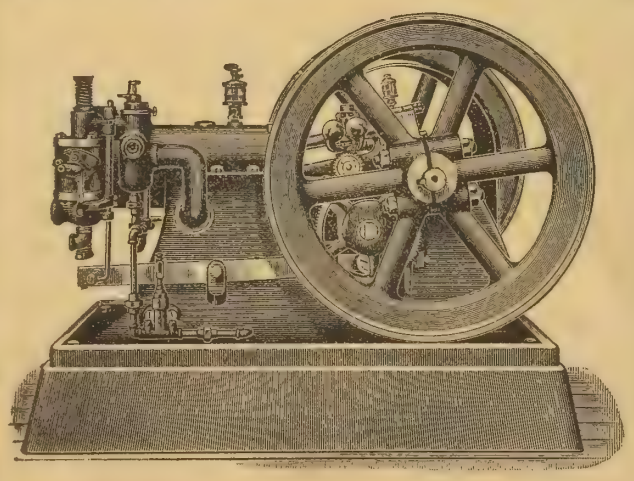

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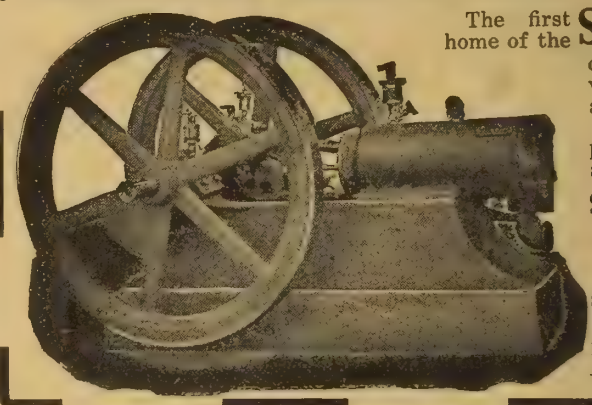

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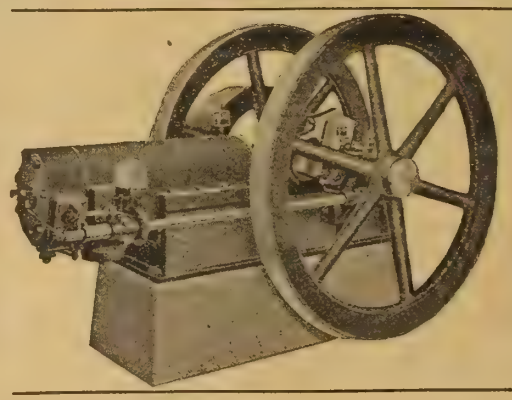

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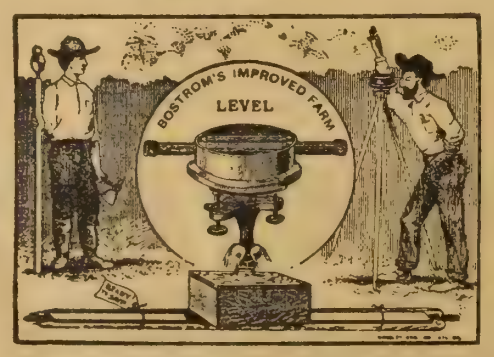

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California Cultivator

Published Weekly — One Dollar a Year

Los Angeles — January 14, 1909 — San Francisco

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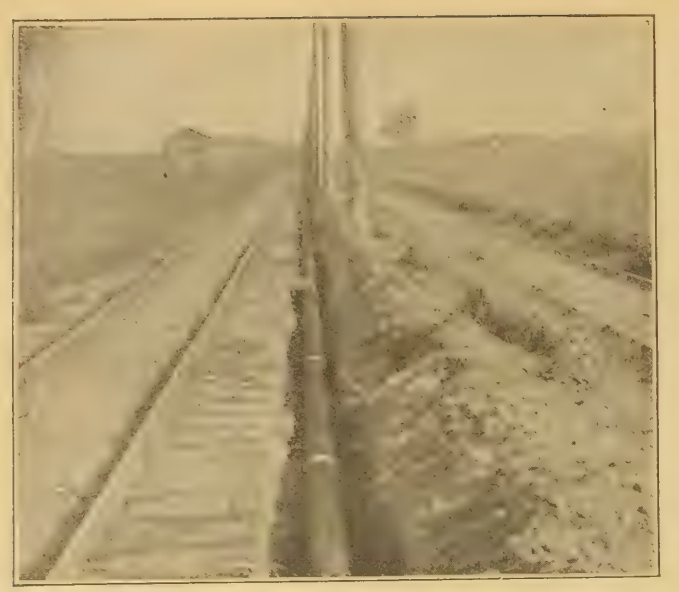

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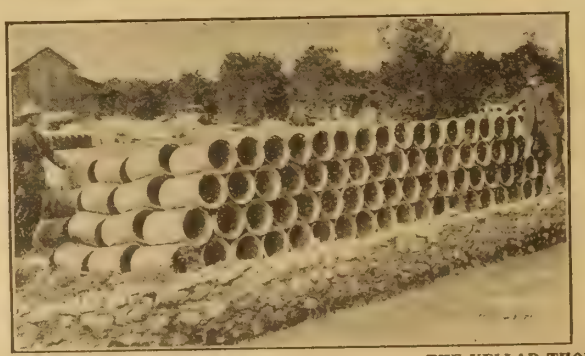

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California Cultivator

Vol. XXXII—No. 2 Los Angeles, California, Thursday, January 14, 1909 Subscription $1 a Year

A Few Hints on Deciduous Pruning

The Trees Need Constant Care in Order to Have the Most Shapely Appearance and Power to Hold Big Crops Without Breaking or Being Ruined by Bending Limbs

SOME people go so far as to maintain that a deciduous tree properly grown should never be touched with pruning knife. "It is not Nature's way and Nature knows best how to meet her own requirements" is often asserted as a reason of the non-pruner. There is a certain degree of truth in that statement, but followed absolutely it would lead to Nature's way of producing fruit when she pleases. When man takes charge of an orchard it is to force the bearing capacity of the trees vastly beyond the way which Nature intended. This is not only true of plants and trees but of animal life as well. The productive power of our dairies left to Nature's way would mean the ruination of dairymen under modern conditions. The same is true to fully as great an extent in the orchard.

Of course there are some trees like the walnut, the fig and even the orange which require the minimum of pruning. But even such trees require most careful attention during their younger earlier years.

One point which should be more strongly impressed upon all planters is to give greater care to young trees by doing "thumb pruning" and take off more twigs with small knife. This would save the use of the saw and consequent serious wounds and sometimes ruined trees by taking off large limbs later. But unfortunately there are but very few orchards in this state which have had this earlier care.

It is entirely beyond the limits of this paper to give any explicit directions in the line of keeping up the young orchard or in correcting the mistakes of earlier care of orchards now in bearing. The best place to secure such complete information is in the field with an expert pruner or next to that to carefully read some of the books especially devoted to pruning. Probably one of the best of these books is Bailey's "Pruning Book." This is a $1.50 book which treats of pruning in all its phases and most thoroughly illustrates almost every feature of pruning work.

Owing to the many queries which are continually coming to the Cultivator, it may prove valuable to give a few general hints which may lead the pruner to more thoroughly investigate either by association with the expert or by close observation and reading. Bear in mind that this is more in the nature of hints and is in no sense a complete work nor even written with any expectation of any professional pruner reading it.

The Young Tree.

In planting the young trees, no matter what the variety, give clean cut ends to all roots which may have been bruised in taking up. This is too seldom done and owing to the fact that the work is covered from sight when the roots are under the ground, the grower seldom knows the real cause of lack of thrift which is sometimes indicated in young trees, which may be traced directly to this habit of burying mangled and broken roots, which are susceptible to fungous and other diseases. The ends should be clean cut. The best tool for this is a sharp knife which does not mangle the bark at all. The ordinary pruning shears if very sharp do very satisfactory work, but the knife is preferable. Some planters prefer a modification of the Stringfellow method. The Stringfellow method consists of reducing the entire tree to almost a cutting, that is, of removing very largely of the roots and nearly all of the top. Planters who have tried this differ as to their opinion, but we believe this extreme custom has attracted attention to the advisability of reducing both root system and top.

The writer of this well remembers his experience in planting a prune orchard many years ago. The owner had bought the trees with a great deal of satisfaction because of the exceptional strong growth they had made. They did have a magnificent root system and the trunks were as a rule an inch or more in diameter. After pruning the roots, trees were planted and after tamping the soil and following with irrigation water to give a further settling, an attendant was given a stick 16 inches long and told to place that beside each tree and clip off each top even with the top of the stick. That is every tree was topped exactly 16 inches from the ground. As many of these trees had been six and eight feet tall, this left the greater part of the tree lying on the ground beside it. This topping work was nearly done when the owner drove in to make inspection. Having but little experience with prune trees he was completely dumfounded at the fearful waste of cutting off these tops and gave immediate instructions to stop taking so much of the trunk off. The remainder were pruned according to his instructions, four or five feet tall. Of course he left the orchard in no amiable frame of mind because of the great waste in cutting back his trees. Within five years from that time the wisdom of the short topping was most conclusively proved in that orchard. The tall pruned trees had been affected by the wind to such an extent that they were leaning badly and many were already beginning to sunburn on the southwest side. The greater part of the orchard which had been pruned 16 inches high had shapely tops, perfectly upright, with a well balanced head, branching out some limbs even with the ground, others up as high as the 16 inches, which was the original height. These trees had the fruit nearer the ground, the wind had less purchase upon it and were magnificent prune trees. We regret very much that long life was not given to this orchard that it might have been proved, as we believe it would have, that the low pruned trees were far longer lived trees, for the sunburn already beginning to come on the trunks of the tall pruned trees would certainly weaken their vitality. A later owner, however, decided that oranges would be more profitable and the prunes were compelled to give way to oranges, as has been the case with many other fruits in the history of California planting.

First Year's Pruning.

During the first year the orchardist should watch his trees, and as the growth starts and the small branchlet indicates thrift, and is so located as to balance the tree, it should be encouraged, but where too many come out on one side or otherwise the twig denotes it will not be needed as a future foundation branch for the tree, it should be rubbed off. Here is where the pruner will save the use of saw in later years. Trees allowed to grow at will for the first two or three years grow such a crop of cross limbs and sometimes undesirable suckers that the mature tree ultimately becomes a mass of tangled wood massed together. We have seen such trees where to bring them into desirable shape a half or more of the top had to be removed. This great waste is not necessary if the grower will use common sense and his eyes for two or three years.

When the trees become dormant after the first summer's growth, the branches on nearly all of the deciduous fruits, such as peaches, apricots, plums, pears, apples, etc., may be topped back somewhat similar to the topping back of the young trees when planted. These main branches of the first year, like the trunk, are merely a foundation to hold up the fruit bearing wood of a later year. Like the foundation of a house, there is no reason for going beyond reason in this matter. As a rule the first year's growth is left altogether too long. On peaches, prunes, etc., we would suggest not leaving more than six or eight inches of trunk, no matter how thrifty the former year's growth may have been. Three or four of these branches will be sufficient to form a good head of the tree and of course these should be distributed on all sides so as to balance and secure as proper spacing of the tree as possible. If a strong prevailing wind is inclined to tip trees when they get to be larger, the main branches on the side toward the wind may be left slightly longer so as to overcome the wind tendency. With the apricot, however, this is not necessary, in fact, with it some pruners follow the reverse method, because, as every orchardist has observed, the apricot limbs reach out toward the prevailing wind.

One point which must be insisted upon in forming the young tree is that there shall be no narrow crotch formed by two limbs growing up closely together or one large limb coming off from the trunk in such a manner that it will have a tendency to split down when carrying a heavy load of fruit. Limbs which come off from the trunk more nearly at right angles and have a firm junction are the only ones which should be encouraged. Strong sucker growing limbs coming from near the base of the tree often have this form of junction, which, if allowed to grow, will later split down and may completely ruin the tree. Where earlier lack of care has permitted these crotches, the only salvation for the tree is by bolting. We have seen valuable trees saved in this way by boring completely through the limbs just above the crotch and putting say a half-inch bolt through so as to hold the two limbs together. The tree soon grows over this bolt and no harm seems to come from it. For thus boring these holes, the writer had an ordinary half-inch bit lengthened in the shank by the blacksmith so as to permit the boring the hole all from one side. This made the insertion of the bolt an easy matter.

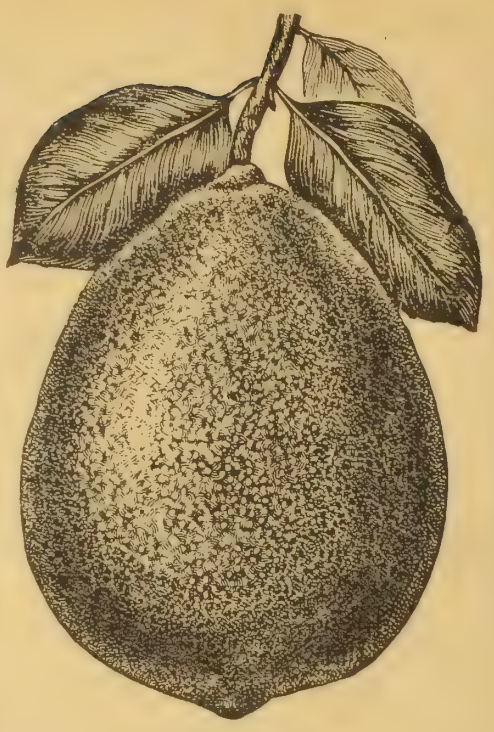
Second Year's Pruning.

At the end of the second year's growth, the branches left after the first year's pruning will have sent out a large number of shoots, probably much more than necessary. If these have been thumb pruned during growth, the pruning shear work will be confined to simply cutting back. This should not be quite so severe as last year, and the length will depend somewhat upon the habit of the tree, that is, the more compactly growing tree will require longer branches in order to separate the top than will that of the more spreading habit. No definite rule can be

Continued on Page 31.

The Wonderful New

Ponderosa Lemon



This truly ever-bearing variety produces lemons of remarkable size. The trees are strong and healthy, easily cultivated and enormously productive. They bloom and bear fruit when quite young. The flowers are pure white, with yellow stamens, and as fragrant as orange blossoms. The beautiful foliage is thick, glossy, and resists insect attacks admirably. A tree of this sort, covered with masses of flowers and large, handsome lemons is a sight to behold. The lemons are excellent for culinary purposes. Usefulness and beauty are combined in a high degree in this remarkable plant. Send for catalogue.

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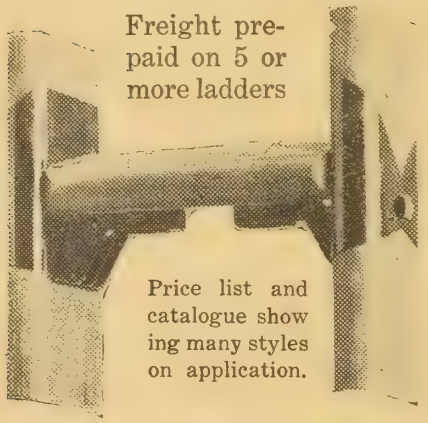

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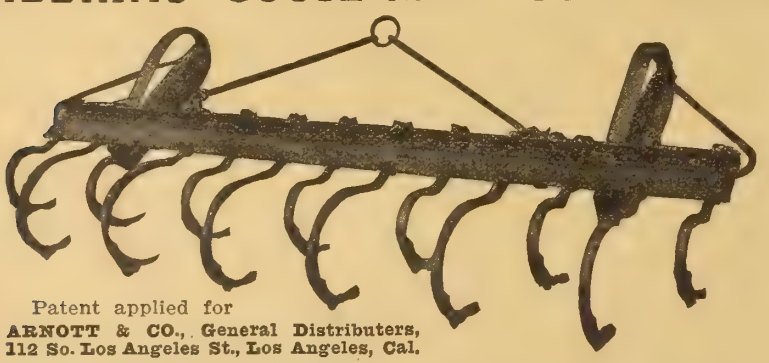

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Sack forms semi-circle about picker's body—is supported by straps over both shoulders and held tight by belt around body. The picker can thus work with ease either on ground or ladder. When full, it does not extend below the hips.

A great feature of the Brewster Sack is the patent gate (see illustration) WHICH PRACTICALLY ELIMINATES BRUISING. Simply unfasten a hook—the gate drops—and the fruit can be quickly but very gently poured out.

The sack holds as much fruit as the old style sack.

Made in two grades.

Regular picking sack grade, sent express prepaid for $1.50.

Special extra quality—that will outlast two ordinary picking sacks—express prepaid $1.75.

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We want reliable men in every locality to demonstrate this sack and act as our agents.

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With the Citrus Growers

ADVERTISE ORANGES AND LEMONS.

FROM an address on advertising by E. O. McCormick before the meeting of the California Fruit Growers' Exchange at Kansas City we quote as follows:

"It has ever been a wonder to me how it can be that men and organizations can muster up the courage to put large sums of money into lands, factories, machinery and materials, incur big payroll liabilities and other obligations; then, when it comes to the most important factor of all—that of making the product known; or, in other words, making the people want it; to hesitate—to consider the publicity as a something apart from the business—a something to be, or not to be done, dependent on the judgment, or perhaps whim of some individual—or to think of it as an expense, or say a gamble. It seems to be true, however, even in these days so full of precedent, that many manufacturers, merchants and dealers who are never satisfied except they have the very best procurable in machinery and men, location and materials, either fall down entirely, when it comes to advertising, or do it with such half-hearted interest and doubt that such trials as they reluctantly accede to are failures. Perhaps I should not term them failures in fact; they are not generally failures as far as they go—but rather failures, because they don't go far enough.

A Commodity.

"Now if I can aid in dispelling doubts which may be entertained by any of the members of this association as to the efficiency of advertising, for promoting its business—enlarging it where it is already established, extending it into new regions, I will be doing about the greatest service it is in my power to render you. To start with, you must recognize advertising as a commodity. It is imperatively necessary that you get this truth fixed firmly in your minds before you can hope to give it that broad consideration which its importance demands. Get away at once and forever, from the idea that it is an expense.

It is not an expense, it is a commodity; just as necessary a commodity in the selling of oranges, as business is conducted today, as are the oranges themselves. I do not mean by this assertion that you cannot go on selling oranges forever without any advertising; but if I understand right, one of the purposes of this convention is to see if means can be devised which will increase the consumption of oranges and thereby increase the sales of the product.

Salesmanship.

"There is no mystery or magic about advertising—that is to say, no more mystery than attaches to doing any other thing well. It is not an experiment. Properly done it is simply good salesmanship. It does simultaneously in a thousand or a million places what an individual can do only in one place at a time. Paradoxically it not only does not supersede the salesman, but is his greatest ally. The better the advertising the better the ally. It is the advance agent of the salesman. It predisposes the dealers and the public and clears the route of the salesman of many of its thorns. Good salesmanship is the ability to induce people to buy your things equally with, or in place of, the stuff that others have to sell. If judicious advertising will assist in creating a demand for oranges, it will add much to the chances of the success of the salesman in his work. That it will do this may be predicated on what it has done in other fields. If you look for evidence of the results of advertising, you may pick it up in the things you do every day.

"There is no limit to the things that may be profitably advertised. Surely, if the staff of life and the graveyard can be promoted by this means there is a chance for the orange. If this be true, then we have only to give our serious attention to the how of the advertising; consider the character and search for the very best method.

Specialize.

"Let us start with a full realization that we live in an age of specialization. Your own business of selling oranges is an illustration of that fact. The grower is all right as a grower; when it comes to marketing he is not in it. That is your speciality. The picked fruit represents the full complement of his investment in capital, intelligence and labor in the orchard. You do not invade his field of activity. His specialty is in studying grafting and planting and spraying and the many other problems and secrets of the still life of the grave—the plowing and irrigating.

What to Use.

"As to the mediums to be used, you know, of course, that the most direct and most easily employed means at our ready command for use in educating desire is the newspaper.

"Reading the newspaper is as intimate a part of our every day life as sleeping and eating. It is a rare person who does not at least glance over his daily or weekly paper, and to the great majority of people it is the only avenue open to their minds accessible to those who have things to sell. The peculiar strength which is all its own is well put by a recent writer in the following words: 'The newspaper carries suggestion into the family circle at leisure moments in parlor or library, where no salesman is ever permitted to enter. It is in closer touch than any other printed thing. To start with, there are in the older communities a vast number of people who have inherited the continuance of the paper which their parents read. It is as real to them as proofs of holy writ. To practically all others, it is their own choice. The intelligence of the world's doings is gleaned from its pages. That which many deem their own judgment, as related to current topics, is merely a reflection of what they have read in their home paper. What reaches them for the first time in today's issue, in a week or a day later has become their belief and knowledge.

The Paper Gets There.

"To most people, all other than newspaper reading is more or less of an effort. Because such reading can be deferred, it is.

Determine just the kind of people and the localities you wish to reach and you have at hand the distribution that will reach them.

"Place your copy today, and by tomorrow, or next week, the distribution is complete. With the newspaper (and periodicals) you know beforehand what and where your circulation is going to be.

"Do not misunderstand my special plea for the newspaper to mean that I think it is the only medium which can be used by you advantageously. You have had recent experience in your Iowa demonstration and which should be a guide for future efforts. It is not my intention to go into details, but rather to point the way which I feel sure will be of great assistance in further developing your

Frost Insurance

By Smudging

THE above caption suggests what is believed to be the correct view of this subject. Orchardists have for years been experimenting, and perhaps trifling, with various means of protection against the ravages of "Jack Frost," with varying results. The past year or two, however, has witnessed a growing tendency to meet this enemy in a way that means insurance against loss by frost, both direct and indirect, that is to say, direct loss resulting from injury to fruit and trees, and indirect loss resulting from injury to market and reputation.

The orchardist who has had experience in smudging has learned that smoke alone will not protect. He has also learned that heat is of vastly more service in protecting both fruit and tree, and that the problem of protection must be solved by the employment of that means of smudging which combines and insures the following essential qualities:

1. A fuel, and a means of using it, that will insure a quick, hot fire or a slow fire, just as conditions of temperature may demand—that is to say, under ready control.

2. A fuel of such quality as to incure convenience in its use, and no deterioration from age.

3. Heat that will raise the temperature convenience in its use, and no five degrees, and possibly six, within the shortest space of time.

4. Cost that is not prohibitive, both as to initial cost and as incident to use.

Unfortunately smudging in the past has been at once ineffective and expensive—expensive both as to first cost, and as to use, namely, lighting of fires and keeping them going long enough to give full protection. On this account the oil pot and the coal basket have failed to meet the demand and may now be said to have had their day.

A canvass of the subject among orchardists in frost-likely sections shows that the ideal fuel for the purpose is made of pine or spruce shavings heavily saturated with low grade petroleum and burned in a simple, inexpensive sheet iron stove, so constructed as to insure great heat or low heat, as may be required, as well as a heavy volume of smoke.

That this fuel and stove are accepted by the orchardists of Southern California as the best form of insurance against frost now available is evidenced by the fact that many of the largest orchards are now thus equipped (about 20,000 stoves being now used), and opinion as to the effectiveness of this form of protection seems to be emphatically in its favor. The Occidental Fuel Company, with offices at 201 Douglas Building, Los Angeles, is putting out this fuel and stove under what has been generally known as the Griffiths patents, and it would appear that insurance against frost, both for citrus and deciduous trees, as well as for tomatoes and other vegetables, may now be had from this company at moderate cost—about ten cents annually per tree for fuel and stoves.

From the foregoing it is clear that protection against frost should be looked upon as a necessary part of the cost of fruit production and should be provided in advance as a form of insurance that does insure. If fire, accident and life insurance, why not frost insurance? And in this connection it may be observed that the orchardist, who thus insures his crop, does not have to die to beat the company for return from investment results every time he saves his crop.

The recent frosts have brought with them a severe lesson to many of the orchardists, and with double force to those who had made no provision for protection. It is a waste of words to argue that because frost has not appeared in a given section for several years it will not, therefore, appear this year, or in any year. In a single orchard the loss from frost two years ago exceeded $20,000, and yet the owner found cold comfort in the fact that frost had not made its appearance in his orchard for more than five years past. That orchard, be it said to the credit of the owner, is now fully equipped with the means of protection heretofore described. It was a case of locking the stable door after the horse was stolen.

The writer believes the whole matter to be one of calculation. It is now a settled fact that frost insurance may be had, and cost is the principal item for the orchardist to consider. It is elementary that if it cost ten per cent, twenty-five per cent, or even fifty per cent of the net value of the crop to save it from destruction by frost, it is good business to incur the necessary expense, and to take time by the forelock by installing in the orchards the best means of protection to be had, and this far enough in advance of expected frost, to insure delivery of materials, and thus obtain absolute insurance.

There is to be a State farmers' "round up" at the Utah State Agricultural College, January 11-25.

George B. Warner's
Orange County Nurseries
Established 1889
Grower and Dealer in Citrus and Deciduous Trees of all Standard Varieties
Soft Shell Walnut Trees, 1, 2, and 3 years old. Grafted Placentia on Native Black Walnut Root and Soft Shell Root. Street and Ornamental Trees, Palms, Dracænas, Blue, Red and Sugar Gums (large stock.) Write for prices.
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Trees Plants Roots Vines
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Our Potted Plants and Shrubbery are free from frost and insect pests. Reliable Agents wanted to work on commission. Send for Catalogue.
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Large seedlings for orchard planting. Eureka Lemons, Pomelos. A fine lot of Phoenix Canariensis and Washingtonia Robusta palms, Camphor Trees, Acacias, Roses, etc.
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CITRUS
WOOD
Is more or less prevalent in every orange and lemon grove, i. e., trees that are unprofitable. How many such have you in your orchard? Would it not pay you to put paying trees in their stead?
Your Home Grounds
Should contain at least a few trees of the better varieties of oranges and lemons. For this purpose we have some exceptionally fine trees to offer, being grown as specimens. Possibly you would like to plant a few citrus trees about your home this season. If so, will you do us the favor to correspond with us about it?
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Our new booklet gives more valuable information about varieties, methods of planting, cultivating, pruning, picking, packing and shipping than anything of its kind ever issued. Sent anywhere for the small sum of 25 cents. Correspondence a pleasure.
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Plums

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Possesses all merits of Phillips Cling, without any of its faults. Fruit large to very large, almost perfectly round, skin golden yellow, of very fine texture, firm and rich with excellent flavor and clear yellow to the pit, which is quite small. The canning qualities of this peach have been fully determined by several years of actual trial, and we regard it as the very best clingstone, for canning, in existence today, and recommend that it be extensively planted.

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25 Years Experience In the Business

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The Fruit Growers' Guide

The best book of its kind ever published on the Coast. It is fully illustrated with half tone engravings and color plates, and not only lists, but describes 2000 varieties of trees and plants. Valuable suggestions are made on soil, preparation, planting, cultivatiug, irrigating and pruning. It contains 120 pages, 7¾ by 10¾ inches.

Mailed for 25c in stamps.

Every Fruit Grower

Should have a copy of the Following books

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Fancher Creek Nurseries

GEO. C. ROEDING, Prest. and Manager

P. O. Box 12 **Fresno, California**

Pruning the Vine

By J. W. Mills

THE principal shipping grapes grown in California are Tokay, Black Cornichon, Thompson Seedless, Emperor and Malaga.

Short Pruners.

Tokay, Cornichon and Malaga are almost universally grown in the bush form, like short-pruned varieties. Varieties pruned short are given two buds on each cane that is utilized to form the new top. The three last-named varieties are given at least three and better, four buds if the vines are strong growers of their kind and the soil is rich and is naturally moist or can be irrigated. At the base of each of these half-long pruned spurs should be left one with two buds. At the next pruning time the half-long pruned cane with its current season's growth of canes can be entirely removed and the top for the coming year can be formed from the cane left from the two bud spurs. This produces a stocky vine and keeps the top down, allowing it to gain in height each year the distance of but two buds, while the length of three or four buds is utilized each year in growing fruit. In the case of long pruned vines tied to stakes, the same plan is followed. Long pruner should have five to six buds per cane.

Difference of Opinion.

Where irrigation is possible it is an open question whether or not Tokay, Cornichon and Malaga are more profitable when pruned long and grown on a trellis. In support of this view, one will state that Black Morocco has always been classed as a short pruner, but Mr. Wm. M. Bristol of East Highlands experimented with three vines on a trellis under irrigation and produced several times as many grapes on them as could possibly be grov on the vines if pruned short. He sold his grapes for five cents per pound in the market which vouched for their good quality. We saw the vines when full of grapes after the second pruning under this method and a more satisfactory crop could not be desired. These other varieties, if trained the same way and treated the same with good, deep soil, would no doubt respond equally as well. Where the soil is shallow or even where deep and without irrigation facilities, such treatment of any variety of grape would no doubt be unsatisfactory.

When grown on a trellis, the vines are more satisfactorily handled if the canes that are tied to the vines are allowed to remain and become permanent arms. Trim the canes coming from these arms in the same manner as long pruned vines are, and tie them along over the vines independent of the permanent arms. At each pruning time they are removed to give place to the coming set.

Varieties and Their Pruning.

Thompson Seedless and Emperor are trained as just described. Many growers tie to stakes, which is bad practice for two reasons: grown on trellis they produce many more grapes, the bunches hang free and can be removed in perfect condition at picking time, while when tied to a stake they are often so entangled with the vines that it is impossible to remove many bunches without breaking them and bruising the grapes.

A San Joaquin Vineyard.

Gros Colman is a splendid late grape on Tokay lands in the Sacramento Valley and should be pruned long. These grapes will not crack even when rained on for some time and a light frost does not injure the fruit. They may be held till after Tokays are gone and should bring good prices. The berries are large, as are the bunches, and the rich purple bloom makes them one of the most beautiful of fruits.

Many Persian varieties have been tried in various parts of the state, and with the exception of the Imperial county, most of them are of no value in California. Chavooshee has proven a fairly good sort where others have failed, and is worthy of trial. It is a large, crisp, white grape, and a long pruner.

Golden Queen is one of the best late table grapes, very prolific with good sized even bunches. A yellowish white, and a long pruner.

Cipro Nero is our handsomest and best late colored grape. It is, however, very delicate and cracks on the least provocation. It is one that refuses to produce or grow well if pruned long, but is prolific when pruned half long or short.

Verdal is a late white grape, almost globlular in shape and shows a silver bloom when rained on or covered

with dew. It is a rugged grower and a short pruner.

Olivett de Cadanet is almost identical with Malaga, a little later and with more evenly shaped bunches. It holds its dry quality well and is a long keeper.

Cinsut is a quick maturing, purple grape that is particularly adapted to any soils, in fact does better there than when given rich, moist soil. Bunches are medium in size and compact. The quality begins to deteriorate quickly after ripening. It is, perhaps, a better grape than Malvoisie, which it closely resembles; a short pruner.

Muscat and Muscatel are too well known to describe, and are pruned short.—J. W. Mills.

PRUNING DECIDUOUS TREES.

Continued from Page 27.

given, for to prune some trees back to a foot or less might injure them, although we have seen with good results trees pruned back to that extent of the second year's growth. Some make a rule of removing half to two-thirds of last summer's growth. It is more a matter for the good judgment of the pruner. The balancing and separating of the limbs must be continued the same as the first year.

Third Year's Pruning.

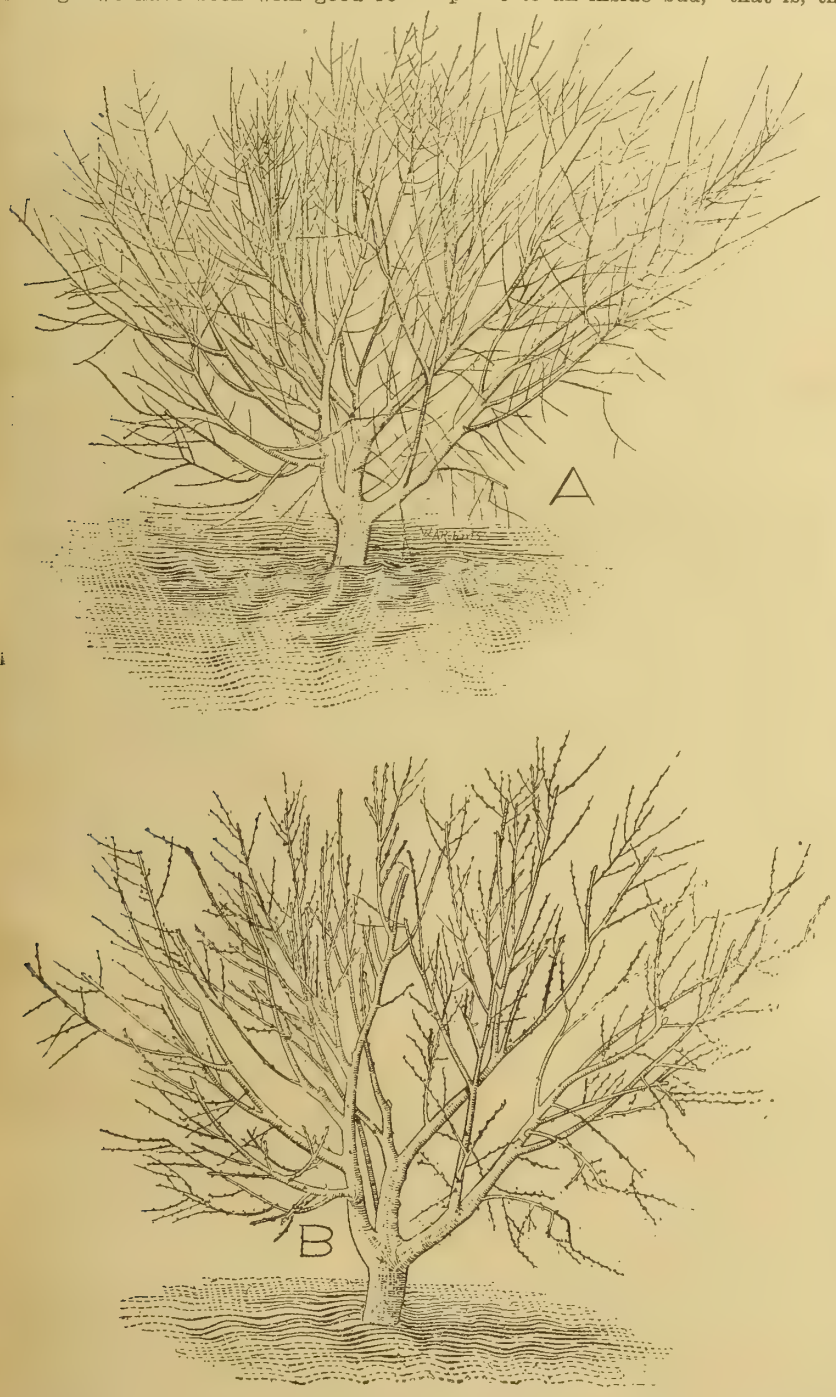
With peaches and some of the early bearing fruits the temptation to leave fruit spurs is very strong, and if reason is observed there is no particular objection to peach and other trees at that age bearing a little fruit. But the grower who wishes a long-lived tree will prevent over-bearing. The grower who boasts that his two-year old peach tree bore a box of fruit will be wiser in late years if he owns his orchard long enough. The third year's pruning is practically a repetition of the second year's except that it becomes slightly more complicated and care must be observed to continue the balancing of the head and to give the last touch to the foundation of the tree.

"Prune to a Bud."

One point which should be borne in mind is to "prune to a bud." That is, make the cut of the foundation limbs slightly above a good thrifty bud, with a slightly slanting cut. Whether this bud shall be pointing outward or inward, or toward the wind, will have to be left to the judgment of the pruner.

As a rule the peach and other trees of spreading habit, most pruners will "prune to an inside bud," that is, the top bud after the limb is cut off shall point inward. This growth as it comes out is more upright than it would be if it came on the outside of the limb. This makes a tree that will carry its load better than if the spreading habit is continued. With many of the compact growing apples, nearly all of the pears and some of the plums, the reverse of this plan is usually followed, that is, cut to an outside bud so as to throw the tree out as much as possible and admit

Continued on Page 46.



A is a tree, unbalanced by being allowed to grow too strong branches on one side. B is the same tree balanced by pruning.

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and only the **best**. Price $2.50 per thousand. Write for **my** price on lots of ten thousand or over.

Address mail R. F. D. No. 5, Los Angeles

The cannery at Yuba City is forwarding large quantities of canned fruits.

Small Fruits and Vegetables

OUST THE JAPS.

CALIFORNIA for Americans" is a cry which is becoming more strenously uttered as the menace becomes more fully appreciated. Some most productive sections have been given over so largely to the Japanese that they outnumber the American population.

The former article written by Mr. Roe is attracting attention and the following is communicated by the president of the Brawley Fruit Growers' Association.

"I have just read the article, 'Financial Conditions Facing Small Fruit Growers,' in last week's Cultivator.

"Mr. Roe speaks frankly and truthfully when he lays the blame for low prices for his strawberries on the Japs. We have plenty of Japs here and they behave just about as Mr. Roe says, and from information from other sources I conclude that the menace of Japanese competition in truck raising is already state-wide.

"Last year there were shipped from the Imperial Valley about 1800 cars of cantaloupes and about a third of them were raised by Japanese. This year they will have nearer one-half of the acreage. I surmise that in two or three years the white growers will be out of business not only in the growing of melons, but also in growing onions, tomatoes and other truck.

"We can not compete with their cheap labor and their cheap way of living. Their rice and fish sauce are shipped here from Japan and very little do they buy of our local merchants. Nor are they desirable neighbors. Not saying that they are bad at heart, they are clannish, do not become citizens and do not mix with our society.

Suppose that Mr. Roe's farm had Jap tenants on the east, south, north and west of him; not only had they ruined his business on the market, but they would reduce the value of his land and his home if he lived there. And if he wanted to rent the Japs would give him about what they wanted for he could then get no white man to take the place at any price.

There are some large ranchers here who will rent to Japs before they will to white people and others will hire Japs in preference to whites. Admitting that there is a certain per cent of the white laborers who are worthless, the great majority, if properly fed, housed and kindly treated, are by far better than any other labor we can get.

When you make a contract with a white man you can generally rely on him to fulfill his part, but if you make a contract with a Jap you can rely on him as long as he makes money or gets the best of the deal.

I am convinced that the Japanese are not the people we should encourage to come to our country. Every newspaper and magazine ought to take up the "hue and cry" to oust them from our state.—F. A. Stahl, Brawley.

ASIATIC COMPETITION.

I wish to commend the article in a recent Cultivator written by J. W. Roe on the financial condition of the small farmer, especially the grower of small fruits. Owners of these small farms where fruits and vegetables are grown will certainly be in a serious situation if the Jap and Chinese are admitted freely to this country as some of the "men of affairs" and large fruit growers are now advocating. We "small fry" don't get fair representation before fruit growers' conventions and country life commissions or other such meetings. If Chinese and Jap cheap labor is employed in fruit raising it brings the small grower into competition with them and will eventually crowd us out of business.—R. R. Butler, Hanford.

What Mr. Butler says is largely true, yet in one point we feel that certain correction is necessary, and that is as to the position of the small fruit grower making his wants known before fruit growers' conventions and, possibly, the country life commission. It must be admitted that the country life commission while in California was largely addressed by other than small farmers but we know of one case where a farmer, not highly educated, or possessing a great amount of land, proceeded to make known that there were conditions, even in California, that needed correction. While it is possibly true that fruit growers' convention programmes are largely filled with the larger and more successful growers there are times when the smallest grower may make known his need of help or state any views which he may hold. It is too often the case that many a grower, through lack of study, or more probable through diffidence and backwardness when he comes to the convention finds himself with only a crude idea that something ought to be righted without definite idea in his mind as to any particular solution of the problem. Let the small grower fit himself to make his wants known then let him be forward and insistent on being heard, and there are occasions when the address may be given to ears that will hear. In any case, the columns of the Cultivator are always open and they appeal to a vastly larger audience than the auditorium of any convention which will ever be held.

WEEVILED PEAS.

The pea weevil is a common enemy of both the garden and field crops of peas. The adult insect is an oblong, rusty-black beetle, nearly a quarter of an inch in length. There is a mixture of white on the wing covers and a conspicuous white spot on the back a short distance from the head.

There is only one generation each year. The eggs are laid in early summer on the outsides of the pea pods when the young peas are just beginning to grow. They are deep yellow in color and glued fast with a sticky substance, which turns white on drying. When the eggs hatch, the young grubs burrow through the pods and into the peas, where they live and grow until after the pea is ripe for harvest. The presence of the weevils in the peas may be readily detected when the peas are picked for table use by the presence of a dark spot on the surface as though the pea had been pricked. Before going into the adult stage the grub gnaws a round hole nearly or quite through the skin of the pea, so that it may escape when the proper time arrives. A careful examination of the peas before planting ought to reveal those holes if they are at all numerous.

The grubs change to the full beetle form before fall comes, and most often

GOOD Seeds

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116 pages, fully illustrated contains information of value to planters. General facts about seeds, plants, bulbs, flowers and trees; when and how to plant; the best garden tools, etc. Sent free on request. Write for copy.

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Peach Trees

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Eucalyptus rostrata, the Red Gum
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E. citriodora, Lemon-Scented Gum
E. cornuta, the Yate Tree
E. polyanthema, the Red Box
E. leucoxylon, Victorian Iron Bark

and Many Other Valuable Sorts

I shall be pleased to correspond with prospective buyers and give particulars as to prices on the seeds I am offering. Trial packets of any variety 15c each, 2 for 25c, or twelve for $1.25. Also young trees of many varieties for sale. Send for circular and cultural directions.

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It has been estimated that the fruit canners of California will suffer a net loss of $100,000 on this year's pack.

remain in the pea until after the planting the following spring. When peas are stored, many of the beetles will come out during the fall or winter.

The injury to the pea consists in the loss of nourishment which is stored up for the young vine to start its growth the following spring. Only a little over half of the injured seeds ever grow, and the others are weakly and do not produce a good crop. Weeviled peas should never be planted.

Where peas are permitted to go to seed and gathered for future use, the greatest danger lies in those that shell out and remain on the ground until the following year. The beetles live over in these and are ready for the new planting. The only proper way is to gather the ripe peas before they shell out, and be sure that no peas are left in open packages from which the beetles may escape during the winter.

If freshly picked peas are immersed in water heated at 140 degrees for a few minutes, the young, half-grown larvae will be killed and the peas not injured for planting. They may also be warmed to the same temperature in a gasoline oven, but they must be stirred frequently so that all the peas will be equally heated; otherwise some of the beetles may escape while some of the peas are heated so much that their germinating powers will be injured.

If the peas are found to be weeviled at the time of planting, they may be thrown into a pail of water. The sound seed will sink to the bottom and the weeviled ones float, where they may be skimmed off and destroyed. Burn them or feed them to fowls. Do not throw away or bury.

Where peas are used in large quantities for seed, such as field peas, the weevils may be killed by fumigation with carbon-bi-sulfid. Place the peas in a receptacle which is as nearly airtight as possible and put on top of them some shallow dishes. Pour into these the carbon-bi-sulfid at the rate of half an ounce to each bushel of seed. Close the receptacle and let it remain for an hour or more. The fumes of the gas will kill the weevils. This gas is very explosive and fire of any kind, including pipes and cigars, must be kept away or serious results will follow.—Southern Fruit Grower.

POTATO.

Three methods for improving the potato are in use:

1. Crossing desirable plants and comparing their seedlings under controlled conditions.

2. Selecting extreme fluctuations among the plants and tubers of a variety.

3. Finding and isolating sudden changes or mutations.

That advance is possible by the first method is admitted from the results of its use by the best breeders. Theoretically, the new varieties obtained are merely new combinations of qualities which were held by the germ cells of the two parents. If our knowledge of inheritance in the potato were adequate, we could make the proper combination to obtain what we wish at will, but at present we cannot do this because our knowledge of manifest characters is meager and because many characters are latent or hidden in our present varieties and need combining with other characters in order to develop. Therefore, until a firm foundation is laid in the science of heredity, we can do little more than make random crosses between varieties known to possess desirable characters, and compare their progeny with great care.

In this comparison it is well to be extremely conservative about drawing conclusions. Not only should every condition of environment be made as uniform as possible, but it should be remembered that there are stages of growth during the life of the plant when surrounding conditions affect it in different ways. And these differences are not hereditary qualities. For example, one variety grows rapidly and its tubers are half-grown at a certain time, while at the same time another variety has just begun to set its tubers. A drouth at this time kills the one variety, but does not affect the other. The first, however, may really be the best variety and hasty conclusions to the opposite would be premature.

The real effect of selecting fluctuations within a variety (such as selecting the heaviest tubers to improve the yield) is still questionable. It seems definitely settled that the use of diseased and immature tubers as seed has an injurious physiological effect upon the succeeding crop, but there is no evidence that planting the best tubers or planting tubers from the best-yielding plants will increase the yield of the variety. Such an inheritance would necessitate the supposition that germ cells of a large tuber have a different constitution from those of a small tuber of the same variety, and there is no warrant for such an assumption.

Wide variations or bud mutations are rare and have never produced anything especially valuable. They are at present more worthy the study of the scientist than the attention of the practical potato breeder.

The universal belief in the hypothesis that a potato variety must degenerate through continued bud propagation appears to have little ground either in theory or practice. The degeneration that sometimes does take place is due to physiological effects through the use of tubers which are abnormal, from inhospitable soil or climate, or from the ravages of insects or fungi on the plants. The old idea that a change of seed is necessary, belongs to this same category. The phenomenon is entirely physiological.—B. E. M. East of the Illinois Experiment Station.

A MODEL EAR OF CORN

The Missouri Agricultural College at Columbia will lay soon the cornerstone of its new hundred thousand dollar agricultural building, and in the box to be enclosed in the cornerstone in an hermetically sealed glass case, will be deposited an ear of corn that conforms to our present ideals of a good ear as nearly as it is possible to find one. All of the corn growers and breeders of Missouri have been asked to carefully cull their product with a view of finding such an ear.

It is assumed that a century or more hence, when this stone structure is torn down, the people then living will be interested in having the opportunity to see what our notions of an ideal ear of corn were in the early stages of corn breeding.

The California fruit exchange takes exception to a statement made in the recent fruit growers' convention that there is overproduction of deciduous fruits. The manager asserts that the low prices of the past season were caused by financial conditions rather than overproduction.

SEEDS PLANTS TREES

Begin the New Year by planning your garden.

You will need some vegetable seeds; some flower seeds and some ornamental trees and fruit trees. We sell seeds of all kinds—by the 5 cent packet to a car load of Alfalfa .

C. C. Morse & Co. are by far the largest Seed House on the Pacific Coast and hold the very highest reputation for the best grown seeds of the best quality.

We will send our new catalogue for 1909 free to any one who sends us his name and address. This is a catalogue we are proud of and we hope that everyone on the Pacific Coast who is interested in the Garden will send for it. It is carefully written and gives complete descriptions and cultural directions. In it, we are offering several new and attractive vegetables and flowers and a great Rose Novelty from France. Our page on planting and caring for Roses is worth more than the trouble it takes to write for a catalogue. DON'T FAIL TO SEE IT.

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Grafted trees only. Better than Franquette or Mayette

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All these, like Muir, Lovell, and Phillips Cling Peach, are of California origin.

"Comet" Red Currant Much larger, earlier and sweeter than any other.

"May Duke" Gooseberry
Earliest of all; large; smooth skin.

Write for Further Particulars.

EUCALYPTUS TREES by the 1000 or 100,000. No stronger stock; grown in the open, without lath shade or screen, therefore hardened to all weather.

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Now is the time to hatch **BANTAMS**
Golden Sebright, Buff Cochin, and Light Brahma Eggs, $2 per 15. Prize winners.
M. E. Dillingham Box 67, San Gabriel, Cal.

Announcement to Smyrna Fig Growers

The following announcement to fig growers regarding figs and caprifigs introduced from abroad and originated for breeding is sent to the Cultivator by Prof. Walter T. Swingle of the Bureau of Plant Industry, Washington, D. C. The Cultivator has refered several times to this fig distribution and it has caused much inquiry on the part of our subscribers. We are glad to have this statement now from Prof. Swingle which gives explicit instructions.

IN order to grow Smyrna figs economically it is necessary to plant in one corner of the orchard a proper assortment of caprifigs to furnish a breeding place for the Blastophaga, or fig insect, at all seasons of the year. Many who are attempting the culture of smyrna figs in California have not planted enough caprifigs and especially not enough different kinds. Besides the standard varieties which yield the profichi used to caprify the Smyrna fig buds in June or July, from six to a dozen or more other sorts should be planted.

During the past ten years the Department of Agriculture has been introducing the best obtainable varieties of caprifigs from the Old World and recently has leased the seedling fig orchard planted at Loomis, California, by Mr. E. W. Maslin, which contains a score or more of valuable new varieties of caprifigs originated in this state.

Caprifig Cuttings Offered as a Bonus for Planting Seedling Figs.

Rooted cuttings of the imported caprifigs and ordinary cuttings of the Maslin seedlings will be sent free by the Department of Agriculture to anyone who will agree to plant out three ceived. The seedlings are also furnished free in the form of one-year-old pot-grown plants ready to set out in condition to start into healthy growth at once. It is suggested that these seedlings be set about 25x8 1-3 feet apart or something over 200 to the acre. Two-thirds of them can be cut out as soon as the trees fruit and the poorer ones remaining can gradually be weeded out or grafted over.

Mr. Maslin's seedlings, although not irrigated, made a remarkable growth, reaching a height of 10 to 15 feet and a diameter of 6 to 10 inches within three years from the time they were set out. Some of them bore fruit two years from setting and many of them in three years.

About half of the Maslin seedlings turned out to be caprifigs and of these one in five has proved to be of value.

Will Have Advantage.

In planting out seedling figs, therefore, the grower is taking the best course to secure new varieties of caprifigs adapted to his particular soil and climatic conditions. All who plant seedlings on these terms will be considered as co-operating with the Department of Agriculture in the fig breeding work and will receive free of cost all publications on fig culture issued in future by the Department and will be given preference in the distribution of any new varieties of figs or caprifigs introduced from abroad or originated by breeding.

New Types of Smyrna Figs Offered for Trial.

Besides the large number of new caprifigs the Maslin orchard contains a half dozen or more new varieties of Smyrna figs which deserve careful trial in order to determine their value for commercial culture. Among them are at least two sorts that show a valuable characteristic not found in any of the imported varieties of Smyrna figs; the mouth of the fig is completely sealed by a drop of pellucid gum that hardens as the fig ripens and effectively excludes all insects and prevents the fruit from souring. One of the new varieties of this type —the Rixford—as grown in 1908 at Loomis without irrigation, showed from 3-4 to 9-10 of the figs self-sealed in this manner.

These and other interesting new Smyrna figs that have originated right here in California in the Maslin seedling fig orchard will be distributed on the same terms as the caprifigs, namely, one cutting for every three seedling figs set out.

Mamme and Profichi Distributed to Smyrna Fig Growers.

California growers having young Smyrna fig orchards have in many cases experienced difficulty in securing the mamme needed to stock up with Blastophaga their caprifig trees, which when young do not carry mamme through the winter. Beginning in April 1909, the Department of Agriculture will send free by mail mamme from the Maslin orchard to Smyrna fig growers for their own use and not for sale. In case profichi are needed to caprify the Smyrna fig crop in June or July the crop of the Maslin orchard will be placed at the disposition of the growers. The profichi, however, must be sent by express collect and the growers must pay the caretaker the actual cost of picking and packing—probably about 30 to 60 cents per 20 pound box.

Co-operators who have shown their interest in the fig breeding work by planting seedling figs will be given preference in the distribution of mamme and profichi.

Names of All Fig Growers Wanted by the Department of Agriculture.

All fig growers are requested to send in their names at once to the address given below in order that a circular giving more details about the proposed free distribution of cuttings, seedlings and caprifig fruits may be sent to them together with application cards ready to sign.—Walter T. Swingle, Bureau of Plant Industry, Department of Agriculture, Washington, D. C.

THE BARNYARD.

The barnyard itself should be kept as tidy as the house grounds. Litter should not be allowed to collect. The shovels, the hoes, the rakes, the bars and the chains should not be left scattered about here and there in the yard. Neither should the plows, the cultivators, the harrows, the mowing machines, the horse rakes and the wagons. This is much more than a mere requirement of neatness. The prolongation of their lives and their greater usefulness for service demand that they be properly housed. Convenience requires that they should be assigned definite places and that they should be found in their places. Then it hardly needs to be suggested that this disorderliness is opposed to all attractiveness.

Imperial Valley Lands have a greater earning capacity per acre than any land on earth. For price list and information address, James S. White Jr., and R. A. Holt, Holtville, Cal.

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2 to 3 feet
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$1.50 a Dozen, $6.00 per 100, $40.00 per 1000

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True to Name

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First-class Fruit and Ornamental Trees. A large assortment on hand. Order early while we have plenty of select stock.

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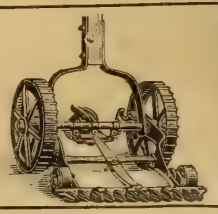

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Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

By Mrs. Minna E. Sherman

INDIVIDUALS; MAN AND COW.

IT is only a few years ago that the central creamery plant, with its feeding cream skimming stations, was considered as a proper way to handle the milk for butter making. The sight of the individuality of the man with the cows as well as the fact that the cows had their individuality was overlooked. The central creamery idea was attractive to the man of capital as a money-making scheme. Large buildings were put up and money spent freely, and yet the success that seemed at hand slipped away, for the skimming station soon was found fully as expensive to handle as a small creamery. The delay and reshipment of the cream to the central butter-making plant was too prolonged. The butter was not so good as that made by the smaller creameries. The true idea seems to have been struck in Denmark, where the exports of butter is watched closely, and whenever a creamery falls down in the quality a government expert goes to help the butter maker find out the cause.

Small Creamery.

The private dairyman with a hundred or two cows never had a better opportunity than at present to make money, for with the milk delivered to the separator as fast as drawn and then ripened at home, there is little chance for the contamination with foreign flavors, or of bacteria having a chance to develop. The products are a little cheaper when delivered directly from the farm creamery. The scale of butter makers' wages ranges higher, for they have to cover a knowledge of how to keep the dirt flavors down that have had a chance to develop during the long ride of the milk to the creamery. The knowledge of controlling these flavors in the worse of the cream and of making the good cream cover up the defects of the bad cream has to be paid for in cash. The pranks of the skilled butter maker have had a kink taken out of them by the law that governs the amount of water in butter. Just how much can be incorporated and held has not been discovered as yet. The greatest amount on record has been reported in a recent arrest of a man where close to 50 per cent. was found in butter shipped out for sale. This padding of butter with water was used to make wonderful records on dairy cows before the days of the Babcock test put the matter on the basis of the chemical amount of butter fat.

Wages.

The present high wages with the inspection of the milk products will not be necessary, and then when this money now paid the creamery managers is divided back again to the dairyman it will mean that he can afford a better head man in the dairy. Surely a man worth $75 a month is more needed in the dairy than at the churn. The individuality of the man who will keep the dairy clean, the cows thrifty, is well worth that money. Removing the dirt and its results is the best the creamery has accomplished. The smaller creamery operated at the farm can go much further by simply not having the dirt in the milk at all. The troubles now at the producing end of the dairy business are very like the troubles at the roots of a tree or vine, they will show up in the fruits. The private creamery owning its own cows has the best control of the conditions under which the milk is produced. The large creameries spend a large portion of their earning in wages to men who claim to be able to eliminate the troubles of the cream. Again individual skill secures the premium. It is worth money every day to do right in this old world of ours.

Co-ops.

These have sometimes been very successful and sometimes the exact reverse, the individuality of the managers has more than a little to do with this success. It is not easy to keep dairymen in line, yet after all, they are much easier to keep working together than fruit growers. Right in this town of Fresno the creamery can hold together with their producers while raisin growers— Well, let's not talk of unpleasant things so early in the new year. It looks as though the Dobbins and Dollies would eat raisins instead of barley pretty soon. The principle that some of the co-operative creameries work upon is to hold back a small portion of the butter fat by making the test run low. This will of course be stopped when the present laws are fully enforced. It was an indirect tax that was better than assessments, in that it was less felt and the remainder could be turned back every year in the form of dividends. Other co-ops paid their stockholders a half cent to as high as two cents more per pound for butter fat than to the outside people that delivered to them.

Farm Separators.

The established creameries naturally do not like the farm separator. It is blamed with all the bad butter made in the market today. Yet this is a most unreasonable claim, for when we know that the milk is not often hauled to the creamery more than once a day and that it is kept in all kinds of warm places until it is delivered, and then is trailed on slow wagons under the hot sun for several hours until it reaches the creamery, surely the dairy could not treat the cream any worse than that. The use of the farm separator is increasing rapidly. In a little while these dairy men will be able to combine and have a churn to make their butter up. The next great change will probably be in the fact that there will be selling houses, and the men doing this will exercise supervision over the different butter makers to make a uniform production.

Steam.

While the larger dairies will use steam to run the separators, the spreading over the country of the power wires will furnish more and more electric plants to the farms. Where steam is used it requires little more fuel than is necessary to make hot water for the washing of the separator and the cans. The direct use of steam to drive the separator is liked better than the use of belts, as these require more knowledge of machinery,

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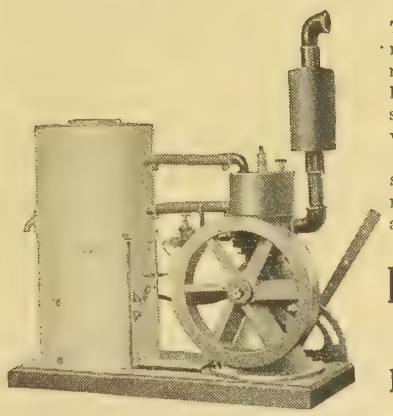

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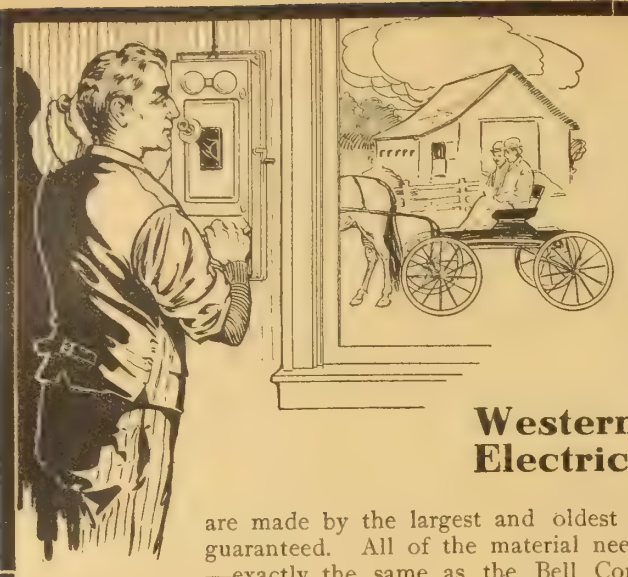

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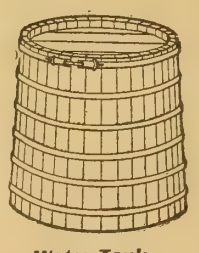

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for the second factor of the engine is then introduced. The well pump is as easily operated directly with steam as with belt power.

Changes.

California has gone through many changes since I have lived here, but ever the tendency has been toward the bettering of conditions of farm life. The telephone and the women's clubs have done so much for women that live out on the ranches that their life is full of enjoyment now.—M. E. Sherman.

FOOT-AND-MOUTH DISEASE.

OWING TO the new outbreak of foot and mouth disease in three eastern states — Pennsylvania, New York and Michigan—there is interest even at this distance in this dread disease. A subscriber has written asking information, so we quote from an article in The Farmers' Tribune:

In the first place, it is a disease common in European countries where in years past it has cost the farmers millions upon millions of dollars. It is exceedingly contagious and spreads at a most rapid rate in innumerable ways. Reliable statistics show that in 1890, 431,000 cattle, 230,000 sheep and goats, and 153,000 swine were affected with foot-and-mouth disease in Germany, while in 1883 the same disease caused the English stockmen losses amounting to no less than $5,000,000.

Cause.

Foot-and-mouth disease is caused by a specific virus, the nature of which is not well understood. Repeated attempts have been made to separate the germ, but so far as we are able to ascertain this has not been accomplished. The germs seem to be so very minute that they pass through all ordinary filters used for separating organisms of that kind. One bad feature in connection with this disease is that it affects so many different species of animals, even man being not exempt. While it is essentially a disease of cattle, it also attacks swine, horses, sheep, goats, dogs, cats and poultry. Among the wild animals it attacks the buffalo, American bison, camel, deer, chamois, llama, giraffe and antelope.

Not Necessarily Fatal.

It is not as a rule a fatal disease. In mild outbreaks only one to three per cent of the affected animals die, while in severe outbreaks as many as five per cent may succumb. It usually runs its course in from ten to twenty days, seldom lasting over a period of thirty days. The great loss occasioned to the cattle industry through foot-and-mouth disease is not through death of the animals, but rather through the suffering they endure while the disease runs its course.

In the case of milk cows or cattle on full feed, the loss often amounts to $20 per head. The milk flow of an affected cow falls off very rapidly, which, of course, cannot be regained after recovery until the cow becomes fresh the following season. Pregnant cows often abort while the disease is in progress, or after it has run its course. In the case of fat cattle they frequently refuse all kinds of food for days, and eat but little at any time during the progress of the disease; thus it can readily be seen that the loss may become very heavy. Calves sucking affected cows are often attacked with severe cases of scours that terminate in death.

Symptoms.

The symptoms of foot-and-mouth disease are given in the Special Report on Disease of Cattle, published by the United States Department of Agriculture, in part as follows: "In three to six days after the exposure of the animal to the infection, the disease makes its appearance. It is first indicated by the animal suffering from a chill, quickly followed by an invasion of fever, which may cause the temperature to rise as high as 106 degrees F. Following this in one or two days it will be noticed that small vesicles about the size of a hemp seed or a pea are making their appearance upon the mucous membranes of the mouth at the border and upper surface of the tongue near the tip, the inside of the cheeks, on the gums and the inner surface of the lips, or on the margin of the dental pad. These little blebs contain a yellowish watery fluid, and gradually become more extensive as the disease advances. Soon after the eruptions have appeared in the mouth of the animal it will be noticed that there is considerable swelling, redness, and tenderness manifest about the feet, at the coronet and between the digits of each foot. Eruptions similar to those within the mouth make their appearance upon these swollen regions of the foot a day or two later, and at this stage it is usual to find that like lesions have made their appearance upon the perineum of the victim. In the case of milch cows the udder and more particularly the teats show the same vesicular eruption, but the latter as the result of milking soon become covered with reddened spots deprived of the superficial layer of skin, and may develop deep, obstinate fissures."

After the disease has become well established the animal suffers more or less pain and usually loses its appetite for a time at least. As will be seen from the symptoms above given, the disease almost always affects the feet of the animal in addition to the mouth. Sometimes all four feet become affected, while at other times one or two may escape infection. In severe cases of affected feet the animal lies down and often refuses to get up for days at a time. The result of this is bed sores that refuse to yield to treatment until the animal finally gets up and recovery sets in.

Extremely Contagious.

The disease is not limited to the external organs, but it often also attacks the internal organs as well, and sometimes before external effects make an appearance. Internal affections are very apt to terminate fatally, the animals dying from paralysis of the heart, or from suffocation through the action of poisonous principles, produced as a result of the progress of the disease, upon the heart or lungs. It is because of the extreme contagious character of foot-and-mouth disease that the federal government is adopting such stringent quarantine measures and is battling so heroically to prevent its spread, which, without restriction, would in a short time extend over the United States because of the tremendous cattle traffic in this country.

Quarantine Will Control.

During the last outbreak of the disease in the New England states some

five years ago, the government suppressed it in a very short time and confined it to four states. This was done by enforcing vigorous quarantine regulations, slaughtering of affected cattle and through disinfection of the premises where the disease was found.

The federal government and the three states mentioned above are cooperating with each other, the government bearing two-thirds and the respective states one-third of the expense. All affected cattle are appraised at their full market value, then slaughtered, and the carcasses burned or buried six feet in the ground and covered with lime.

Must Succeed.

It is to be hoped that the government will be as successful with this outbreak as it was with the one five years ago. While the quarantine under which Pennsylvania, New York and Michigan are now placed, though the disease has been found only in a few counties in these states, causes much loss to the live stock interests of those states, there seems to be no other method of controlling the spread of the disease and preventing it from becoming general all over the country.

At a recent meeting of butter makers at Chehallis, Washington, a constitution was adopted and an organization formed with the name of Washington Creamery Operators and Butter Makers Association. The first president of the organization is H. W. Maynard, of Olympia.

HOG NOTES

Lice will make the best hog poor.

Dipping hogs is cheaper than feeding lice.

The well fed sow gives the pigs a good start in life.

Close confinement in filth and dirt always checks growth.

Hogs eat the food from which other animals will get no good.

No stock upon the farm is more quickly turned to money than the hog.

In spite of the fact that the acreage of barley for green feeding in Imperial Valley was greatly increased over former years, the stock shipped in is preventing any excess of supply.

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Will reduce inflamed, strained, swollen Tendons, Ligaments, Muscles or Bruises, Cure the Lameness and Stop pain from a **Splint, Side Bone or Bone Spavin** No blister, no hair gone. Horse can be used. **Horse Book 2 D free.** $2.00 a bottle at dealers or delivered.

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"All Wool And a Yard Wide."

American National Live Stock Association

A GREAT convention is called for January 26, 27 and 28 in Los Angeles. It is the twelfth annual of the American National Live Stock Association. President Jastro's call for the convention says:

"Never before in the history of the live stock industry has the need for concerted action been more imperative. Many questions of great interest to stockmen will be considered by the next Congress and the legislatures of the different states, and it is vitally important that all concerned in the prosperity of our industry should now forcibly express their views through this national organization.

"Some revision of the tariff will doubtless be attempted by the next Congress and already certain manufacturing interests are clamoring for reduction in the duties on hides, wool and live stock. In all previous tariff legislation, the manufacturing interests, by reason of intelligent organization and persistent effort, have been able to secure many favors to which they were not justly entitled, and, as a consequence, our meat food products are barred from many continental European countries. In past years this association has forced such reciprocal trade agreements as would permit the admission of our meat products to those countries, and now is the time while the tariff is under consideration to secure such favorable legislation. The special committee, representing the Department of Agriculture, Bureau of Commerce and Labor and the Treasury, which went to Europe for the purpose of ascertaining commercial conditions abroad relative to an increased sale of our farm and live stock products, has returned, and their very elaborate report will be available for consideration at our meeting.

"This association at its last convention recommended, by an almost unanimous vote, a bill providing for federal control of the grazing on the unappropriated public lands in the semi-arid states and territories of the United States. That bill was introduced in the last Congress, and this winter a vigorous attempt will be made to secure its passage. The necessity for some intelligent supervision of the public range, protecting the ranchman and conserving at all times the rights of homesteaders, is daily becoming more apparent, and the increased difficulties of a promiscuous use of the range is continually making new converts to such policy. At our convention the subject will be open for the widest discussion and all concerned in this important question will be given an opportunity to express themselves.

"The administration of the forest reserves by the government will also come up for consideration, and Hon. Gifford Pinchot, Forester and Chairman of the National Conservation Commission, will be present and address the convention.

"Railroad service during the past year has been vastly improved. Undoubtedly the efforts of this association to secure the enactment of laws compelling adequate railway service, furnishing of cars and a speed minimum, has largely contributed to this improvement. In times of good railway service, the necessity for laws which will prevent a recurrence of the disastrous service of former years should not be lost sight of, and this question will be further considered."

Secretary Tomlinson is busy with arrangements for the convention and Los Angeles promises to do its part as entertainer. It will surely be an important meeting which no stockman should miss.

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Contents

A MONARCH OF MONTEREY COUNTY, Cover.
PRUNING DECIDUOUS TREES, 27.
CITRUS.—Advertise Oranges and Lemons, 28.
DECIDUOUS.—Pruning the Vine, 30.
VEGETABLES.—Oust the Japs; Asiatic Competition; Weeviled Peas; Potatoes; Model Ear of Corn, 33.
ANNOUNCEMENT TO FIG GROWERS, 34.
LIVE STOCK AND DAIRY.—Individuals—Man and Cow; Foot-and-Mouth Disease; American National Live Stock Association; Hog Notes, 35, 36, 37.
EDITORIAL.—This Issue; Join the Association: National Live Stock Association; Freight Rates; Health Squad; Judging Contest; Anti-Race Track; Parcels Post; Fig Trees, 38.
AGRICULTURAL NOTES OF THE PACIFIC COAST.—Northern, Central, Southern, The Coast, 39.
POULTRY.—Chicken Experience; Brooders; Canker; White Orpingtons; Pullets for Breeding; Colds; Pigeons; Belgian Hares, 40, 41, 42, 43.
GENERAL AGRICULTURE.—New Locust Exterminator; Power on the Farm; Unburnt Lime for Soils; Dry Farming Congress; Worth of Fertilizers; Sowing Alfalfa, 44, 45.
GRAPE POMACE, 48.
QUERIES AND REPLIES.—Pecans; Small Guavas; Orange Tree in Poor Condition; Caps for Alfalfa; Scale; Oranges in Imperial; Thornless Cactus; Injured Tomatoes; Pruning; Pruning Olives; Almond Growing; Seedling Walnuts; China Hogs; Transplanting Willows, 49, 50, 51.
VETERINARY.—Farcy; Shepherd Dog, 51.
HOUSEHOLD.—Flynn of Virginia; Getting His Answer; Observation Party; Cakes Without Eggs; Recipes; Don't Reveal Your Ignorance, 52, 53.
PRODUCE MARKETS.—Los Angeles Market; San Francisco Market; Citrus Markets, 54, 55.

THIS ISSUE.

Subscribers may notice that this issue of the Cultivator is somewhat more extended as to number of pages than usual. Our advertisers have come in to such an extent that we were forced to encroach upon subscribers' space in order to give them location, or else the size must be increased to keep up the usual amount of reading matter. We preferred the extra number of pages in order that the amount of good reading matter that we have on hand may be sent to our subscribers as quickly as possible. In addition we have one or two things held back which will be of exceptional value next week. For instance the leading article next week will be one which was especially written for the Cultivator by Prof. E. W. Hilgard of the State University. It is on the effect of different forms of lime and of gypsum on the soil. It is well worth waiting for.

JOIN THE ASSOCIATION.

The hard fight being put up by the Walnut Association to secure a more general co-operative effort in the marketing of walnuts should be granted the co-operation of every walnut grower in California. Had the walnut growers all been members of the association this last season it is very probable the nuts would all have been marketed at the established price. As it was, the percentage of nuts remaining in the open market was sufficient under the financial conditions which prevailed to weaken the market so that at present it looks rather discouraging for the few cars which have not already met with sale.

At least the solid uniting of the walnut interests would have resulted in injustice to no one and the loss which is now thrown upon some of the associations would have been pro-rated and all secured fairly successful results. "Nothing succeeds like success" is truer nowhere than in co-operation. It must have a sufficient percentage of the entire output or injustice is reasonably sure to fall upon some.

NATIONAL LIVE STOCK ASSOCIATION.

The American National Live Stock Association will hold its twelfth annual convention in the city of Los Angeles January 26-28. This will doubtless be an important event in the history of live-stock raising of California and should have the attention of all breeders. More particular information may be had by reading the announcement on the Dairy Page.

FREIGHT RATES.

The increase of ten per cent on the freight rate has aroused the Pacific Coast shippers as no other act of the railroads has done in years. The injustice of this increase, which it is asserted will put an annual tax of $10,000,000 on the producers of the state of California alone, has caused much caustic comment. The possibility of securing relief seems to be very remote unless the administration comes to the rescue and grants the Pacific Coast line of steamers to connect with the Panama railway. This move is hardly probable, especially if Senator Bristow's statement that both Senators Perkins and Flint are opposed to it.

The recent "rate day" meetings which were held all over the state were successful in registering a mighty kick, but whether this kick will be sufficient to overturn railway plans remains to be seen.

HEALTH SQUAD.

Physicians in San Francisco are taking up a line of experiment along the line which Dr. Wiley did in Washington some months ago. That is, Dr. Wiley secured what he called his "poison squad," and fed them upon foods which he had reason to believe were preserved with poisonous compounds to the extent of being unhealthful. The San Francisco physicians, under the leadership of Dr. Albert J. Atkins, a well known physician and a member of the World's Congress of Medical Science, have established a similar squad of healthy young men, which will be called the "health squad." These men will be fed upon, or provided with, a liberal supply of dried fruit which has been sulphured, as a part of their daily ration.

The prediction on the part of many of the physicians is that the men fed upon sulphured fruits will remain perfectly well and some even predict that better health will result from this diet only of fruit.

We believe California fruit growers need fear nothing as to the result of this experiment for it is very improbable, from testimony of expert chemists who are unbiased that the "health squad" should eat sufficient sulphur in California sulphured fruits to ever injure their health in the slightest.

JUDGING CONTEST.

Iowa and some of the middle west agricultural colleges have classes in stock judging, corn judging, and judging of wheat and other farm products. These classes have various contests at state and other fairs as occasion offers and it has created a spirit of intense rivalry between various institutions which is spurring on young men to perfect themselves in securing knowledge of the perfect points of either stock or other products being judged.

We do not know that such a contest has ever been held on the Pacific Coast, but think the classes of our State Agricultural College could well devote some time to scoring the number of points of products of creamery, field or orchard. For instance if the young men could be taught the strong points of the Washington navel orange, the display at future citrus fairs would show a more uniform colection of citrus fruits than was displayed at the recent Tulare County Fair. California is hardly a strong enough corn producing state to make the interest in judging an ear of corn which is manifested in Iowa, but in the matter of judging the strong points of dairy or beef live stock it is a vital question to many of our young men and we believe great interest and profit may be secured by education along these lines.

In a recent contest at the National Corn Show, the Iowa team went home with a $1500 trophy. At the recent National Dairy Show in Chicago there were teams from eight different agricultural schools in the contests.

ANTI-RACE TRACK.

The anti-race track campaign is stirring up the better element of the state as no other movement has for years. It has likewise created considerable action on the part of the gamblers, which shows that they are awake to the gravity of their situation. Whether they have pull enough with the present administration to stand off for another two years the enactment of the bill which is demanded by every decent person in the state of California, is yet a question. It is unthinkable that such a situation could be supported by enough members of the California legislature to prevent the passage of the anti-race track bill, but sure it is the people of California have elected some men who will support the gamblers. Their names should be made known to the public.

PARCELS POST.

The National Grange is sending to all who wish blank forms of petitions to members of Congress at Washington, asking for their support in securing the passage of Senate Bill 5152, providing for a system of parcels delivery on rural mail delivery routes. The proposed system is favored by the postmaster-general, who believes it would not only be self-sustaining but would create a surplus sufficient to wipe out the present annual deficit of the postal department. The forms of these blanks may be had by addressing the National Grange headquarters, Concord, New Hampshire, but if farmers wishing the support of their representatives in Congress for this measure will write a personal letter to the representative of their district it will have just as much weight and perhaps greater than in the form of a petition. Let every farmer who is interested write, both to the representative and the senator.

FIG TREES.

On the deciduous page this week may be seen an article written for the Cultivator by Prof. Walter T. Swingle, touching upon figs which will be distributed by the Bureau of Plant Industry. This is a valuable opportunity which should be taken advantage of by every one who has land fitted for the culture of the fig. The particulars as to securing these trees may be seen in the article.

The newly seeded area of winter wheat of the United States, is estimated as being 5.6 per cent less than the revised estimated area sown in the fall of 1907—equivalent to a decrease of 1,762,000 acres, and indicating a total of 29,884,000 acres. The condition of winter wheat on December 1 was 85.3, as compared with 91.1 on December 1, 1907, 94.1 on December 1, 1906, and a ten-year average of 92.2.

The feeling amongst fruit growers, especially citrus people, in California is at present one of assurance that the tariff revision will not affect their interests, other than that it is probable no changes will be made.

Shop Talk

SUBSCRIPTIONS.—Orders are received at this office almost daily to discontinue or change the address of the Cultivator without giving the name of the post-office to which the paper has been going. Much confusion and delay would be avoided if every one would bear in mind that we have a large list and that it is impossible to find names without knowing the postoffice address. The list is indexed according to location and not according to name, so all can see the necessity of paying attention to this suggestion when sending their orders.

Agricultural Notes of the Pacific Coast

Northern California

Davis shipped a total of $79,826 worth of almonds during the past season.

Colony Number 3 at Gridley is extending its planting of vineyards this season.

Tehama county's farmers are elated over the possibilities opened up by the Iron Canyon irrigation project.

About twenty-five students began the agricultural course at the State University School at Davis on Jan. 5.

A company has been organized at Yuba City, Sutter county, to plant a large tract of land to eucalyptus trees.

Berry growers of Gold Ridge are concerned over receiving payment for large consignment of berries made to a Napa packing firm.

An effort is being made by Solano county people to secure the construction by the state of a bridge across the Carquinez Straits.

A farmers' institute will be held this week in Yuba City, Sutter county. It will be conducted by Prof. Clarke and addressed by Prof. Bioletti.

A rainfall of from half an inch to an inch was the New Year present to the farmers of the Sacramento valley. Much more has fallen since.

The construction of the levee at Oroville, which will protect a large body of land, is nearing completion. A fill was made for over 250 feet.

Sutter county will have the largest single field of beets in the state this coming year. The contract has been let for 6000 acres to be planted in this one field.

A strong vein of water has been struck at 112 feet on the State Farm at Davis. It is hoped this will solve the problem of irrigating water for the farm.

The Maywood Grange at Corning met recently and arranged a program for the coming year's work, which will add interesting features to many of the evening sessions.

The directors' meeting of the Dairy Exchange recently issued instructions to their inspectors to report to the local agents of the Revenue Department all cases of butter suspected of being adulterated.

The State Board of Trade has information from Washington that Congress will grant an increased appropriation to the Department of Agriculture to the end that the thrips fight may be more strenuous.

A representative of the Central Creamery Company of Eureka, Humboldt county, recently appeared before the Ways and Means Committee at Washington to show that the duty on casein should not be removed.

The following prices were paid at the last division of the creameries of Humboldt county on butter: Pioneer, 36 cents; Grizzly Bluff, 36; Eel River, 36; Capital, 36½; Riverside, 36½; Ferndale, 38; Cream City, 38; Central, 38.

The Davis Almond Growers' Association in a recent report shows that the last year's output was the greatest since the formation of the association. The total output was 322 tons of almonds and the average price 9 7-8 cents per pound. Growers outside the association marketed 46 tons which netted 9½ cents.

Central California

English walnuts will be planted more extensively than ever in the Santa Clara valley.

Selma Chamber of Commerce has voted against endorsing the Fresno county good roads bonds.

Nurserymen at San Jose report heavy orders for deciduous fruit stock and planting will be very heavy.

Raisin growers have united and made a compact with the packers which as a rule is acceptable to the growers.

The Porterville district will have quite an extension of its orange acreage from this spring's planting of citrus trees.

Senator Perkins reports that efforts are being made to secure the passage of a law permitting the use of sweet wine in medicines.

Coyotes are doing much damage to farmers near Santa Clara. One farmer reports that fifty or more attacked his poultry yard recently.

Delano is busy these days with drilling of many wells for developing irrigating water and in grading lands for the planting of orchards.

Farmers about Lodi are now hoping that a sugar factory and refinery will be established and that a valuable industry will be built up about it.

A large number of land owners near Lodi have contracted with the Alamitos Sugar Company for quite a production of sugar beets this year.

An effort will be made to establish a sewer system in the California Redwood Park so that campers in that section will find healthful conditions.

The Sempervirens Club of San Jose has been assured by the Governor and Forestry Committee that no more large trees will be cut in the Big Tree Basin.

A large firm is about to build a winery at Turlock. This is said to be independent of the trusts and by a company which now owns ten large wineries.

Nearly 600 miles of mountain trails have been built in the government forest reserves during the past year. This is to aid in better patrolling and fire protection.

Farmers near San Jose are engaged in a shot gun warfare against the city garbage dumpers. The war is on the ground that they do not wish garbage dumped near their homes.

The Woman's Club of Bakersfield is offering prizes for the finest grown chrysanthemums and other flowers. Especial prizes are to be offered to school children who can show the finest gardens.

Prune growers who have been investigating the condition of the market have found many market points of the east are overstocked with prunes shipped several months ago. There is evidence however that the market will be in better condition within a short time.

The campaign against the thrips is being more fiercely waged in the Santa Clara Valley than heretofore. Not only are the local orchardists prepared for any fight possible against this pest of prune and pear, but the Bureau of Entomology is sending an additional force of workers to aid in the coming campaign.

Southern California

Quite a number of cattle near Ocean Park, Los Angeles county, have died of blackleg.

Redlands shipped up to the end of December 104 cars of oranges and 57 cars of lemons.

Large numbers of shrubs and trees will be planted on Rubidoux Mountain at Riverside this spring.

The feeling is growing stronger that date culture will be a complete success in Imperial and Coachella valleys.

It is estimated that nearly 2000 acres of apples will be planted near Beaumont, San Bernardino county, this year.

Forest rangers and others are putting out a vast number of trees in the Sierra Madre mountains north of San Bernardino.

From 6000 acres of beets grown in the neighborhood of Compton this year, a half million of dollars was received by the farmers.

The supervisors of Imperial county will give shade trees to all property owners who will plant and care for them along their roadways.

It is estimated that not to exceed 1200 cars of cantaloupes will be grown in the Imperial Valley this season. Many of these will be grown by the Japs.

The Colorado river has begun on its semi-annual rampage which usually comes at this time of the year. It has been caused by heavy Arizona rains.

The Anderson Barngrover Co. has begun other suits against Southern California walnut growers asking injunction and damages under dipping patents.

The California Folding Crate Company, located at Anaheim, has a patent on an improved folding crate which, it is claimed, is a great convenience.

The rangers of the Pine Mountain and the Santa Barbara Forest Reservation were called in conference at Santa Barbara recently and entertained at dinner.

The storage of walnuts yet in Southern California is causing some discussion as to the disposal of them, but every effort is being made to prevent any serious cut.

But few growers of oranges will admit any damage to the fruit from the recent cold spell, and as time passes the assurance is stronger that the damage will be very slight.

It is now assured that the Laguna dam, built by the Reclammation Service across the Colorado above Yuma, will be completed so that water may be turned on the desert lands this coming spring.

An effort is on foot to form two or three new walnut associations in Orange county, especially at Orange, Tustin, and San Juan Capistrano. Frank Kellogg of Santa Barbara is promoting the movement.

The planting of cotton in Imperial Valley is attracting more and more attention, and the success of this industry is assured by the promise of the American Nile Cotton Company, it having agreed to have a gin and compress in readiness for handling the next season's crop at El Centro. A carload of seed is on the way to El Centro from Texas.

The Coast

There will be 60,000 acres of potatoes planted in Colorado the coming season.

Mexican cattle introduced into Montana are proving remarkably hardy and successful on the ranges.

Spokane will have one of the largest poultry and pet stock exhibits ever seen in the northwest January 26-30.

Over $13,000,000 worth of stock was handled through the Union Stockyards at Denver during the year 1908.

Sunnyside, Washington, wants a cannery. The shipment of tomatoes from that town last summer was 625 tons.

A Lewiston, Idaho, live stock dealer says that the scarcity of feed is proving very embarrassing to stockmen.

Milton, Oregon, has procured some of the best prices for apples this year ever secured by apples grown in that section.

The Utah Agricultural College will conduct a Farmers' Institute train through that State during the next few months.

The director of the experiment station at Moscow, Idaho, is offering silver cups for the best butter fat records of a herd of five or more cows.

It is estimated that 3,000 sheep men will attend the 45th annual meeting of the National Wool Growers' Convention in Pocotello, Idaho, this week.

The Stockbreeders Association of Washington has elected a legislative committee to look after interests of stock growers in the state legislature.

Poultry raising is destined to be one of the greatest factors of Western Washington and great increase in the industry is promised for the coming year.

At a meeting of the Pure Breeders' Association at Spokane Washington it was reported that the Alaska-Yukon Exposition next year will offer $3000 for stock judging contests.

One potato grower on the Little Spokane River, Spokane county, Washington, succeeded in producing 800 bushels of potatoes per acre. They were of the Burbank variety.

The National Western Stock Show will hold its fourth annual exposition at Denver, beginning January 13. It will be the first meeting in the new amphitheatre costing about $200,000.

In the cold snap at the end of December which extended over the entire Pacific Coast, Portland was given a 20 degree temperature which it is claimed is the lowest in ten years.

Farmers at Monte Vista, Colorado, are discussing the extension of irrigation ditches and the proposition is to be voted upon for a bonded indebtedness of $550,000 for extension of the system.

During the coming session of legislature of the state of Colorado, it is expected that an appropriation will be made for an irrigation experiment station. It will be in charge of the State Bureau of Irrigation.

The Wenatchee Valley Fruit Growers' Association recently made a division of funds for fruit handled by the association, amounting to $75,000. The total of the association's business during the past year was $350,000, divided among 250 members.

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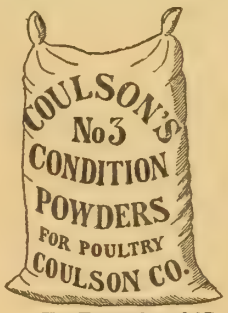

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Trap Nested White Leghorns

I trap nest every bird one year before I put them in my breeding yards, and no bird that has not made a record of 13 dozen or better per year as pullet is used. I cannot afford to breed neither can I afford to sell eggs from a hen that has not made this record as a pullet. I mate 15 hens to a well matured cockerel or yearling cock bird. My breeders have roomy yards, thus assuring strong fertility. A few choice cockerels for sale.

Eggs $1.50 per 15; $7.50 per 100; $60 per 1000.

S. E. Gregg East Adams St. Riverside, Cal.

White Wyandottes

My San Jose Winnings: 1st, 2nd and 3rd Cock; 1st Cockerel; 1st, 2nd and 3rd Hen; 1st and 2nd Pullet. The above winnings were made out of ten entries.

Box 60, R. No. 1 Mrs. C. D. Hubbard San Fernando, Cal.

Profit in the Poultry Yard

By Mrs. Frank Metcalf

We solicit short articles of a practical nature from the fancier and utility breeder, giving their experience with poultry. All inquiries pertaining to feed, management, disease and its prevention will be answered through these columns.

CHICKEN EXPERIENCE.

LAST February and March, we hatched with incubator and hens about three hundred White Leghorn chicks. The losses with the hens were considerable, with the brooder, very light. At six weeks we sold the broilers at three dollars per dozen. About that time we sold twenty fat old hens, altogether realizing forty dollars which we considered paid for our young stock up to that time. We had on hand then about one hundred fine young pullets, and thirty-five year-old hens.

The yearlings fed the youngsters from then till the first of September when the young pullets began laying. From then up to this time, our chickens have cleared us a dollar per day. This, considering the high price of feed, we consider satisfactory.

We keep grit, charcoal, and oyster shell always before them. We feed a dry mash in hoppers all the time, and a light feed of wheat in deep litter in the morning. At night, we throw them a heavy feed of wheat, all they will clean up before going to roost. In chilly weather, we boil the wheat and feed it hot. All the time the chickens have access to green alfalfa, and to a shed where dry alfalfa is stored. They like to pick and scratch in the litter of dried leaves and chaff about the stack. They nest all over it, and a large tent adjoining the stack is utilized as a scratching place in stormy weather.

We keep a five gallon trough always filled with milk, either sweet or sour. At the creamery we get the sour milk at the rate of five cents for ten gallons. We are careful to keep the milk can and the milk trough sweetly clean. Our cow furnishes some milk for the chickens. The milk we consider the cheapest and most important part of the ration.

As we do not have water piped to the yard, how to keep fresh water always before the chickens has been our greatest problem. Finally we secured a ten gallon barrel and inserted a wooden faucet near the bottom. The faucet drips constantly into a granite iron pan, which overflows in to a long trough. At the far end of the trough is an auger hole which lets the excess of water off into a covered well. By this method, there are no muddy puddles around the water trough for the chickens to drink from. A low bench set over the trough keeps the chickens from soiling the water. The whole arrangement is set in the shade of a huge oak tree, which, by-the-way is one of the chief assets of our poultry yard. The water in the trough was cool on the hottest days last summer.

The barrel was filled early every morning with fresh, cool water.

In the shade of the oak, a large space was spaded up for dust baths. In dry weather, the stale water from the barrel was sprinkled each morning over the dust baths, to the great joy and comfort of the chickens who prefer moist dust to dry, every time.

The roosting house is cleaned once a week, and sprayed or white washed about once every month, oftener in summer. It is closed every morning as soon as the chickens are off the roost, and not opened till night, so that the chickens cannot scratch and pick amid their droppings.

Our chickens are never lousy, or sick, and the egg production has been steady all fall and winter. We are amateurs in the poultry business, and the Cultivator has been our only literature on this subject.—Mrs. King, Gridley.

And still lots of people are going out of the poultry business. Of course all do not get as cheap feed as does Mrs. King's stock but all may follow her painstaking methods and be almost as successful. We congratulate her on her attention to details and on her success.

BROODERS.

THANKING you for former help and knowing that you are glad to be of service to your constituents, I come to you with further questions.

1st—To one in this climate, and who must be as economical as possible, expecting to brood out about 300 chicks at a time, is a brooder house with indoor brooders, enough better than a brooding coop snugly made, say three feet wide, 20 feet long and two feet long, divided into six compartments for 50 chicks each, to be worth the difference in cost? For a source of heat my thought was to have a one-inch pipe for hot water run the length of the coop, drop five inches and return to starting point; just over the return pipe have a board 12 inches wide, making the floor of the hover apartment, thus heating directly by the upper pipe and indirectly by the lower one; for I would have one or two tubes for each compartment conveying fresh air from outside against the lower pipe to be warmed and pass into the general chamber.

Is the plan a good one? How shall heat be applied at the end of the pipes to make circulation sufficient and the pipes hot enough?

Shall the pipes be connected to a two or three-gallon reservoir with a little gasoline stove under that? Or is that much more than is necessary? Would it need only a single short joint of pipe connecting the two lengths and would a kerosene lamp be sufficient, or would a little kerosene or gasoline stove be better?—H. H. Davis.

Mr. Davis' query is one that shall be my text for this week's subject, as it is a query that is troubling so many at this particular time, and to all I have good news to tell, for they may rejoice and be exceeding glad at being free forever from the thraldom of pipes and lamps and smoky, dangerous brooder stoves.

Fireless brooders have solved these problems perfectly, and are in successful operation as far east as New York, and may be used in this climate the year around, saving the expense, worry and danger from the multitudinous brooder fires so long the menace of poultry farming.

Instead of making one long building for all his flock, if Mr. Davis will make several small buildings, which will answer for colony houses as the chickens grow, and which may be

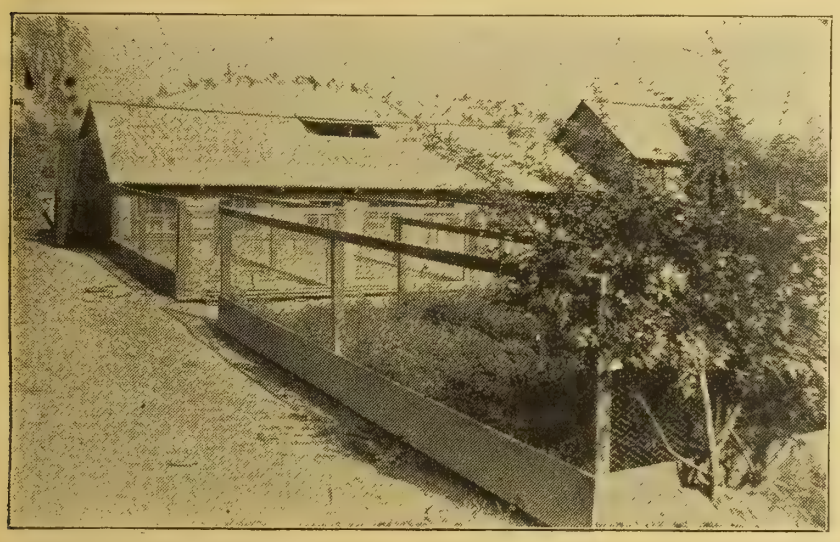
easily moved from place to place, I think he will find them much more satisfactory.

Then if disease should gain a foothold in one lot, the whole flock will not be in so much danger, and more yard room can be planned for each flock in this way, as the different sizes should be kept separated, even a week making quite a difference in small chicks.

The expense that would have gone into pipes and lamps, etc., can be added to the making of ends for these little houses, which I like about six feet by eight, or at least six feet square for each 50 birds. Now, the hover for a fireless brooder is a very simple affair, easily made at home, and a good model is to make a small table two feet square, with six-inch legs, or else use a box six inches deep, with holes bored in three sides and one side taken out. If a box is used it must be turned upside down and all around the sides thick cloth must be tacked, slashed up every three inches for the chicks to get out of, and similar strips of cloth tacked across every three inches to hang from the top to the floor, slashed likewise. Cloth that don't in and out of in each of the four sides of the box, protected by a curtain of thick, slashed cloth, and enough air will percolate through the feathers for ventilation, and yet the chicks will be warm and cosy. Any one who has ever slept under a delightful old-fashioned feather bed will appreciate this fact, and those who haven't have missed something.

That fireless brooders are practical and just the thing for this climate has been thoroughly tested, and no one need be afraid to try them. I used the pipe system to my sorrow last season, and my chicks smothered at one end and chilled at the other in one of those long pipe affairs. They were too warm at night near the lamp, and when let out in the morning would shiver and chill and catch cold and die, until I was in despair and lost more than I raised.

If one thinks heat absolutely necessary, borrow an idea from the fireless cookers on the market. They are simply big boxes stuffed with hay, with a hay padded cover, airtight. In these boxes are nests for kettles, which are put in boiling hot, and the box quickly closed, where they cook for



Brooder House and Run With Alfalfa Planted.

avel must be used, or the chicks will ang themselves in the ravelings, as have found to my sorrow. The idea s for the chicks to run under this over whenever cold, as they will oon learn to do, and the heat generted from 50 chicks is sufficient to eep them warm enough. More chicks ie every year from over heating in rooders than from any other cause, ave lice, as over heating causes bowl trouble, colds and roup.

Clean chaff or fine straw should be laced under the hovers for the chicks nestle upon, and if a very cold spell ould cause you to worry, place a g of hot water on top of the box r table,) but if the water is too hot ey may overheat from that, so it is enerally best not to use it at all.

Two different kinds of fireless ooders are upon the market now, t they are so very simple, one can ake them at home.

Another plan I have seen, is to use quilt of cotton batting, for the chicks nestle under, which bags down ough so the backs of the chicks me in contact with it, and this akes a nice substitute for the moth- hen, but the sides of this one were arded in, and ventilation allowed m above through the quilt.

Now I will give you my plan: Make loose bag of feathers, of some sleazy th like cheesecloth, first being sure at there are no nits or lice in the thers, and tack this inside a box it will sag down over the chicks a tle. Make a door for them to go hours and hours. A box made on this plan with a nest for a jug of hot water would make an ideal brooder, by setting it up on legs, and putting a curtain around the bottom. The hot water would have to be renewed every twenty-four hours only, and there would not be the slightest danger from fire.

Not much hay should be placed under the jug, but plenty should be covered over it, with a tight board cover in addition, and the jug tightly corked. I have been thinking about this hay box brooder so much that last night I dreamed that I hatched chicks in the top of one, and hovered them under it at one and the same time, and by the way, a man back east hatched a good percentage of chicks in his apiary above the bees, utilizing the heat they threw off in this way. But that is another story.—Mrs. Frank Metcalf.

Summer is a busy time with farmers, and many neglect to provide perches at the proper stage of the chicks' growth. We neglected to look after some of ours in this respect last season, and the neglected birds did not grow as long, heavy plumage as those that were furnished perches when old enough to fly up to roost. On the roosts their bodies are in contact more with the open air, which favors a heavy growth of feathers.

Young geese are ready for market when the tips of their wings reach the tail, which is when they are about ten weeks of age.

Great Fences

AMERICAN FENCE

Made of wire that is all life and strength — wire that stretches true and tight and yields just enough under impact to give back every jolt and jam it receives.

Made of materials selected and tested in all the stages from our own mines, through our own blast furnaces and rolling and wire mills, to the finished product. Our employment of specially adapted metals is of great importance in fence wire; a wire that must be hard yet not brittle; stiff and springy yet flexible enough for splicing—best and most durable fence material on earth.

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These are combined in the American and Ellwood fences—the product of the greatest mines, steel producing plants and wire mills in the world. And with these good facilities and the old and skilled employes back of them, we maintain the highest standard of excellence possible for human skill and ingenuity to produce.

Dealers everywhere, carrying styles adapted to every purpose. See them.

American Steel & Wire Co.
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ELLWOOD FENCE

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Don't plant poor seeds—get the best.
Send for free catalogue and price list.
Also of the best

POULTRY SUPPLIES and INCUBATORS

115 W. 7th Street, Los Angeles

WHITE LEGHORNS GREAT EGG PRODUCERS GREAT WINNERS

Bred from best American and imported stock. Great layers—lay while eggs are scarce and high Over 700 in a single day in December from 1000 hens. From Oakland's great show we carried off more ribbons than all competitors compined. Stock, eggs and baby chicks for sale also

BUFF ORPINGTONS Chicks and eggs from choice matings. Send for descriptive circular.

THE MODEL POULTRY FARM **BOX H** **IRVINGTON, CAL.**

Starbuck & Son's Heavy Laying Barred Plymouth Rocks

We now unhesitatingly make the proud boast of the best laying strain on the coast, if not in the world. We will publish prices later.

Do you want to hear about our beautiful prize-winning Buff Orpingtons and Silver Wyandottes. We have something to crow about.

Wm. Starbuck & Son, Fullerton, Cal.

Single Comb White Leghorns

The first essential to success in the poultry business is that the foundation stock or eggs be purchased from a reliable breeder, one who has made a success of the poultry business from the fact that his stock has proven to be the Business Hen. Such stock or eggs we now offer you and stand back of our sales. Prices for stock on application. Correspondence solicited.

Eggs—$1.50 per 15, $7.00 per 100 and $60.00 per 1000.

STUHR-WILLIAMSON POULTRY CO.

378 Bandini Ave. **Home Phone 1490** **RIVERSIDE, CAL.**

Babies 10c Each

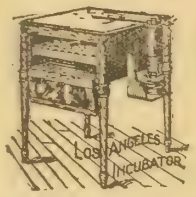
We are booking orders now for Jan. delivery of several thousand baby chicks. We hatch 19 kinds—price 10 cents and up. Send for full particulars and detail price list. We ship everywhere safely within 48 hours. Buy your chicks of us and be sure of a square deal. We are the world's largest baby chick dealers. We expect to sell 300,000 baby chicks, ducklings, turkeys, goslings, etc. in 1909. We sell hatching eggs of all kinds. All infertile eggs replaced at ½ price. Send a postal—it brings full details. Visitors always welcome.

Pioneer Hatchery Co., 112 E. 8th St., Los Angeles

Stop That Guessing

The

Los Angeles Incubators



Are now equipped with a moisture guage that will accurately register the moisture; relieves the operator of all guess work and assures better hatches than ever.

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Ours are a Standard Laying strain bred from the best American and Imported Stock. The kind that Lay and the kind that Pay.

We have more hens with a high record for egg production, and more birds that have actually won first prizes in the show ring than any other breeder on the Pacific Coast.

The cream of 4000 choice birds to select from.

Eggs, Stock and Chicks for sale. Send for descriptive circular.

Buff Orpingtons -A few select Pens from which we can furnish eggs or chicks, no stock.

The Model Poultry Farm, Box H Irvington, Cal.

Cornish (Indian) Fowl

The bird for fancy and utility. If you want the best, I can furnish them, winners at England's and America's greatest shows. Eggs from my grand double-laced, low, blocky, imported birds, $5.00, $7.50 and $10.00 per setting. Pen headed by best cockerel bred from my imported birds, mated to American bred hens, $2.50 per sitting. Young stock for breeding and exhibition a matter of correspondence.

Remember, my imported stock is the best Brent could produce, are extra large, true to shape and color. Winners of all firsts at Los Angeles, 1907-08. Clean sweep at San Jose, 1908. Send for catalogue.

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Healthy vigorous day-old chicks hatched from selected utility stock. White Leghorns especially. All other leading breeds hatched to order. Prices according to grade of breeding stock. Send your name with address on a postal card and we will send you our circular and prices.

San Jose Hatchery

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WHITE WYANDOTTES

BUFF COCHINS, CUCKOO BANTAMS

First prizes. Never beaten at a coast show

Cockerels cheap $2 and up. Trios $5 to $10. Hen and Runt pigeons $3. per pair.

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MADE IN PETALUMA

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SOLD EVERYWHERE

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Cutting's Superiors Bred to Lay

They lay more than they win and they always win everything wherever shown, so figure out how they lay for yourself. We just won all firsts and seconds and two silver cups and other prizes at the Big Pomona Show.

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WHITE LEGHORNS

THEY LAY
THEY PAY
At Every Pop
THEY SHOW
THEY GO
To the Very Top

Cup for Best Display, Petaluma, '07. Trophy for best display, San Jose, '08. Send for Prices and Free Booklet.

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Bought by Madame Paderewski

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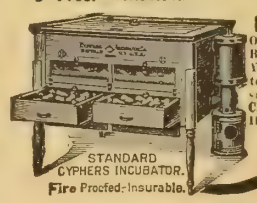
The first Fire Insurance Inspection Label ever issued on Incubators and Brooders has just been granted to Cyphers Incubator Company by the National Board of Fire Underwriters. Now you can insure your incubator, brooder and buildings only if your machines bear the Insurance Label. Our 1909 Catalogue, 212 pages, fully illustrated, tells all about it, and contains five valuable chapters on the poultry business. It is Free. Write for it.



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S. C. White Leghorns and Barred Plymouth Rocks

We can fill orders promptly from our selected matings of utility bred stock, at $5 per 100, $45 per 1000. Our prize winning Leghorn, $2 per setting of 13. Won our first and all but one second, also silver cup for best pen at last Chutes Park Show.

San Gabriel car to Masonic Home, two blocks south to ranch.

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San Gabriel, California

Black Minorcas

Exclusively

"Birds That Lay and Win"

Winnings at Los Angeles, 1908: Cocks, 1, 2, 4, 5; Cockerels, 1, 2, 4, 5: Hens, 1, 2, 3, 5; Pullets, 1, 2, 3, 4, 5, Pens, 1, 2; Cup for highest scoring Minorca male in show. Stock and eggs for sale. Catalogue free.

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Buff Orpingtons

Sullivan's COMMONWEALTH STRAIN is bred for egg production, has won the cream of the prizes at leading shows, from Seattle to the World's Fair. We did not show at the State Fair this year but have better stock than ever, and want you to send for our Prize Record and watch the later shows that we win.

Mr. & Mrs. W. S. Sullivan,
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White Wyandottes

Eggs for hatching from these great egg machines. Prices $1.50 to $2.00 per 13. Orders booked now for delivery after Jan. 1st., 1909.

Wm. C. Parker, 111 Pacific Avenue, Santa Cruz, Cal.

POULTRY WANTED

2,000 Chickens and 5,000 dozen Eggs wanted at the highest market prices. Make us all the shipments you can. Cash returns guaranteed. Correspondence solicited. Mark and consign all shipments direct to the

Poultrymen's Union, Oakland, Cal.

When writing advertisers, mention Cultivator.

POULTRY QUERIES.

Canker.

Can you tell me what is the matter with my young pigeons? They have a swelling in the neck which sometimes is very hard, and often, but not always, looks something like canker. They are usually taken sick when from one to three weeks old and die in from one to two days afterwards. The parents are fed whole wheat and cracked corn and are, in appearance, perfectly healthy.—A. H. P.

Canker is such a common disease among pigeons that this is probably what your little ones died from. The treatment recommended by Mrs. Basley's Poultry Book is four grains of sulpho-carbolate of zinc to one ounce of water. Paint the canker spots with this night and morning and in three days the germs will be destroyed. Be very careful that no musty grain is fed, and cut out the cracked corn for a few days, substituting bread and milk and chopped onions.—Mrs. Frank Metcalf.

• • •

White Orpingtons.

Please give me some information in your Poultry Department about white Orpington chickens, their habits and peculiarities; whether good layers, good setters, heavy eaters, etc.—Franklin H. Dunham.

The Orpingtons are an English breed of large size and great beauty. The weights are: Cock 10 lbs., hen 8 lbs., cockerel 8½ and pullet 7 lbs. The Whites are as good as any variety of them, and if you are where hawks are not troublesome, they will suit you as well as any of the class.

Being English, they have white, or pink legs, and white skins, and are rather a better breed for the table than for laying, their eggs being small, and, like all very large breeds, not produced in as great abundance as some of the more active breeds. The Orpingtons were originated by William Cook, who died in 1904, but whose sons carry on the breeding of these fine birds in New Jersey. I met Wm. Cook at Rochester N. Y. a few months before his death and was much impressed by his earnestness and kind friendliness, and regretted his untimely taking off very much. His work in giving this grand breed to the poultry kingdom is a living monument to his skill. "His labor lives, his work survives. He lives on earth a thousand lives."

• • •

Pullets for Breeding.

We have some nice S. C. White Leghorn pullets which will be a year old in April. They are laying nice large eggs. Do you think they would be good eggs to set? The roosters are the same age. Would it be advisable to use them, or get others? There seems to be a difference of opinion concerning inbreeding, and we want our stock to be strong and vigorous.—Mrs. F. H.

The eggs from one-year-old Leghorn pullets should do to set, but two-year-old hens make better breeders, and the chickens are apt to be stronger from the older birds. If you do use the pullets, by all means get older males, if possible. Inbreeding, as you suggest is detrimental to the vigor of the flock.

Line breeding, carried on by experienced, skillful breeders is all right for those who have time to study the individual characteristics of each bird, toe-mark and pedigree the chicks, etc., but scarcely advisable for inexperienced people. In line breeding a mating of father to daughter, and son to mother is advised, but not brother and sister. My own way while working out my Buckeyes was to put out good males of one year's breeding among farmers, and bring them home after a year's absence to mate with pullets raised while they were away. If your males are nice, perhaps someone in the same predicament might exchange with you for the season. If you do mate the cockerels and pullets together, you will raise more cockerels than pullets, it is likely.

Of course, if your birds came from eggs from a large flock, there is not much danger of their being very closely related, excepting in a few cases, and you may get very good results from the present mating, but if you do mate them together this year, be sure and introduce fresh blood another year.

• • •

Colds.

Will you kindly let me know through the columns of the Cultivator, if it is roup my leghorns have or simply a cold. I have a cock and eight hens that I have taken away from my flock, one or two each day. They come off the roosts in the morning blinking one eye. The next day a little pus comes out. I dip their heads in coal oil and in three or four days they are all right again.. Now, would that affect them for breeding purposes?—A New Subscriber.

The birds just contracted a common cold, which your prompt treatment effectually stopped short of roup, hence these birds will be all right to use for breeders, after they are perfectly well. Be sure that there are no cracks or knotholes causing a draft of wind to strike the birds while on the roost and keep the coops clean and free from mites by a liberal use of coal oil or distillate, and I think you will have no further trouble.

• • •

Pigeons.

I am eleven years old. I like to raise pigeons, and I've got one pigeon that will not let other pigeons sit on their eggs, and so spoils all the eggs. Please be kind enough to let me know in the next Cultivator what I can do with him. What makes pigeons lay eggs on their perches, please? I've had so many eggs broken in that way I would like to find out the cause.—Charles Prikryl, Los Angeles.

The pigeon that bothers the others so must be kept separate while the rest are brooding. Make it a wire netting coop and keep it there until it learns to behave better.

The best way to save the eggs which are laid while the birds are roosting is to place a floor under the perches and put plenty of straw on it so the eggs will not break when dropped at night. Usually it is young birds that drop their eggs in this way and as they grow older they will know better, perhaps.

BELGIAN HARES.

REGARDING a query which recently came to the Cultivator and was only partially answered at the time we have here the following from Miss Bee Josephine O'Malley of Kanova Ranch, Anderson Shasta county:

"As to where Hares may be obtained I am unable to state, but as to their care the following is a brief summary:

"In starting to raise hares on a small scale—which is the best way to begin anything—purchase, if possible, a bred doe and a buck, not akin either to her or the sire of the expected offspring. Provide cages or pens roomy as your facilities will permit but not less than 12 square feet of floor space in each pen, and not less than 2½ feet high. We found one of most satisfactory pens to be those 4x8 feet. They were built in sec-

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Your dealer sells it. Write for samples. We have something new for poultrymen, send for literature. **GEO. H. CROLEY**

Poultry and Live Stock Supplies

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against the wall of a building, the lower pen being about one foot from the ground, and another pen 2½ feet from the floor of that. The wall of the building formed the back, the floors were matched boards, and the fronts and ends were one inch mesh poultry netting; doors 18x24 inches were placed at the outer ends of the front, and a removable wire partition was made to fit in across the middle of each pen, this making 2 or 4 pens in each place as occasion may demand.

"The pens must be made tight and the wire well tacked in place, and the doors must fasten securely. Provide each pen with "muss-pan," i. e. a medium sized pan or shallow tight box such as a tobacco butt, filled partly full of sand, sawdust, short straw or any absorbent material, and if a small amount of the excreta be placed in this box, the hares will use it regularly for excretory purposes and save much labor in keeping the pens clean. which must be done.

"We put these tiers of pens about 2 feet apart along the wall, this giving good circulation of air and yet keeping the pens in compact form for ease in caring for them.

"The pens must be dry, airy and free from drafts.

"The feed is much the same as that given any ruminant animal, with the addition of bread and milk or oatmeal and milk where possible, for the nursing does and young leverets just begining to eat.

"Hay, particularly clover, alfalfa or millet being the main diet supplemented with green stuff, grass, cabbage, kale, carrots, weeds, tree sprouts, etc., in reasonable quantities, also vegetable waste, small beets etc.

"Keep watch of the droppings, if too loose diminish the supply of green food, if too hard, increase it.

"During very cold weather in northern Chio we fed some corn, but oats either whole or ground is a better feed, wheat and barley are also good, a handful of grain once a day is sufficient and the amount of hay is a matter of judgment. Feed regularly what they will eat clean, not enough that they will waste it, nor so little as to keep them ravenous. They should be given clean cool water once a day or oftener in very hot weather; a lump of salt occasionally is a benefit to them.

"The sexes should be separated as soon as the leverets are weaned, and after breeding, each hare should have a separate pen.

"My experience in natural history has taught me that the gentle dove and timid hare can either of them put up the most vicious fight it was ever my misfortune to witness. A bull terrier's fighting propensities are mild compared to a good strong lusty hare, particularly a doe.

"While the doe will breed every 33 days if so permitted, four litters a year are the limit of reasonable profit, and three are better.

"To sum it all up: provide clean airy, dry pens of reasonable size, feed clean, wholesome food in suitable quantities, give them regular care and you will have good results.

"As to allowing them their freedom—we never did that, as ours were too valuable to be permitted to take any chances with stray dogs, or opportunity to run away and get lost, and, also a hare has very poor discriminating qualities, and would be very apt to ruin one's best trees and plants if opportunity offered, taking it all in all I prefer to shut them up closely and select their food myself.

"For fear of making this too lengthy I will leave the care of the leverets for another time.

Hoping that this may be of benefit I am, Most truly yours—Bee Josephine O'Mealey, Kanova Ranch.

THE OWNER OF DAN PATCH GIVES SOME LATE FACTS IN REGARD TO THE WORLD'S CHAMPION.

Written for the Cultivator by M. W. Savage, owner of Dan Patch.

During the past few months I have noticed the various comments printed about Dan Patch and his 1908 performances. Some of these have been written in all fairness to the fastest horse that has ever lived, and have been based on facts. Others seem to have been written under pressure of prejudice or based on absolute ignorance.

We have many truly great and fast horses in this country and new ones will develop from time to time. As a horse breeder I certainly believe this or I would not continue in the business. I do not wish to appear as trying to detract from the greatness of any horse, but simply to state facts about Dan Patch.

Early in the summer I stated that Dan Patch was faster than ever and that although he was twelve years old he would pace the fastest mile in his life. Dan's first fast mile this year was the last week of August, when he paced a mile in 2:00 with every eighth in fifteen seconds. At that time I told Hersey that his first mile proved my statement and that it was the easiest and best mile I ever saw Dan pace, and I saw his miles in 1:55¼ and in 1:55. Dan's second performance was a mile in 1:58¾ finished where a tremendous crowd had taken possession of the track with just room enough for Dan to pass between the crowding people. His third mile was in 1:58 and his fourth mile was paced in 1:57¼. On October 11th, at Lexington, Dan paced the first quarter in twenty-nine seconds and the second quarter in twenty-seven and one-half seconds, at a 1:50 clip. He was at the half in 56½ seconds, a 1:53 clip, and at the three-quarters in 1:25½. At the seven-eights the pacemaker, driven by Scot Hudson, broke a blood vessel and slackened down enough to shorten Dan's tremendous stride of twenty-two feet and yet Dan Patch finished that mile in 1:56¼ which all fair minded men must acknowledge was by far the fastest and greatest mile in the life of the fastest harness horse in the world. Hersey states that when this happened that Dan was going easy and was not tiring and that, barring the accident to pacemaker, Dan would have surely beaten 1:55. In no other year has Dan ever started out with a mile in 2:00 and then reduced it every performance. His last mile is absolute proof that Dan Patch in his twelfth year was faster than ever, which is doubly remarkable from the fact that Dan has been performing these world famous miles for six years.

From some of the comments I have seen printed the readers would be led to believe that it was a very ordinary event for a horse to pace faster miles at twelve years of age than any other pacer has approached at any age. I am sure that the facts carry me out in my statement that Dan's performances in 1908 were the most remarkable in his entire life and indisputable proof that he was faster than ever. Is it not an astonishing event in all harness horse history when Dan Patch at twelve years of age paces the fastest miles in all of his wonderful career? Dan returned to my farm in good shape and is jogging sound and full of life and energy. I have no doubt but what he will be able to give a good account of himself in speed performances during 1909, to the gratification of his millions of warm friends.

I will make the prediction right here that Dan Patch will pace faster miles in 1909 than have ever been paced by any other horse. Very truly yours, M. W. Savage.

Coulson's Special Dry Chick Food

Makes Them Grow

COULSON'S SPECIAL DRY CHICK FOOD, during the five years it has been on the market has justly earned for itself its great reputation as a life-saver for little chicks by its special adaptation to their needs.

THE UTMOST CARE is observed in the selection of each of the dozen or more articles composing this unequalled feed; tender seeds, cracked grains blown free from dust, steel-cut oats, tiny pieces of dried meat and bone, willow and pure bone charcoal, are combined with other very necessary ingredients; every article being selected with special reference to its quality, strength, and desirability for the needs of the young chick.

FOR YOU TO BUY the many different articles composing Coulson's Special Dry Chick Food is quite impracticable; you could not be certain as to their quality for one thing, and the high cost of certain of them when purchased in small lots might lead to their being left out to the detriment of the chick.

TO MAINTAIN the high reputation of COULSON'S SPECIAL DRY CHICK FOOD, nothing is left undone to make it absolutely the best feed that can be made for the little chicks.

COULSON'S SPECIAL DRY CHICK FOOD can be fed exclusively to your little chicks for the first six weeks, at a cost of about four cents (4c) each; and what is of still greater importance, it will do all that can be done in the way of feed to bring them through that critical period of their lives in full health and vigor.

TO RAISE EVERY CHICK you hatch; to have fine, large, healthy chicks; to have chicks that will stand up and crow when eight weeks old; to raise chicks that you will be proud of, FEED COULSON'S SPECIAL DRY CHICK FOOD, THE LIFE SAVER.

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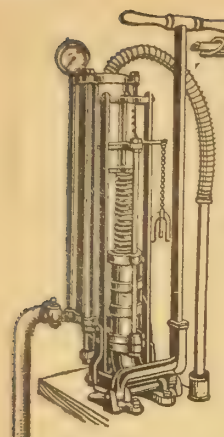

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Wouldn't you like to cut your labor expense an even third? You can do it on your spraying—and this advertisement tells you how. What's more, the work will be done more quickly and better. Use

Bean Magic Spray Pumps

The Bean patent spring (shown in the cut), divides the work; the operator does half at each stroke of the handle, and works against but half the pressure indicated on the gauge. Bean Magics are built in two sizes; both have non-clogging ball valves, porcelained cylinders, and other exclusive Bean features. They're the easiest running, least troublesome pumps on the market.

Our illustrated catalog No. 21 describes ten sizes of hand pumps, and contains much valuable spray information and formulas. Catalog No. 22 describes Power Sprayers. Both books sent free. Write for our special offer; mention number of acres and kind of fruit.

BEAN SPRAY PUMP CO.
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Complete with Gearing ready to Attach to Your Pump

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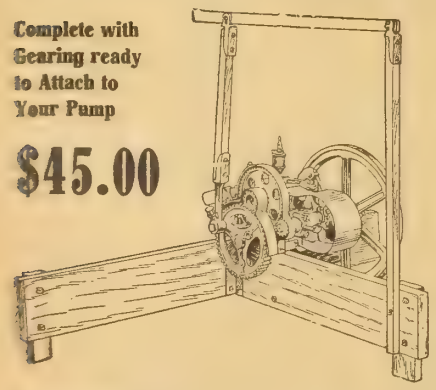

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From 225 to 1600 gallons per hour, depending on height water is to be raised.

Air cooled, uses Gasoline or Distillate.

A reliable, durable engine at a very low price. Can You Afford to be without one.

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Because your order gets our personal attention, whether evergreen, or forest, ornamental or fruit tree; whether small fruit, shrub or rose bush, we guarantee it to be grown in Colorado; healthful, well-rooted, true to name. We give premiums to club-makers. We pay freight on $10 orders. Agents wanted. Send for free catalog today to

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Box 500 Lafayette, Colo.

General Agriculture

A NEW LOCUST EXTERMINATOR.

The Mexican authorities in Yucatan have discovered a means of exterminating the seventeen-year locusts that have infested that region. It is declared that by exercising ordinary care a whole swarm of locusts may be destroyed within a few hours without any danger whatever to cattle. A trial experiment was carried out in the following manner:

"The swarm of locusts destroyed in this instance measured about 500 yards in length by 200 yards in breadth. They made their path in closed files, and had already devoured all that they found in their way. One pound of arsenate of soda was found sufficient to destroy the swarm entirely. The poison was mixed with four pounds of brown sugar (panola) and this dissolved in a large vessel with hot water, cold water being immediately added in a quantity sufficient to make forty-five pounds of solution. Six bunches of green barley, weighing about thirty-six pounds, were soaked in the arsenic solution for from fifteen to twenty minutes, so that the fodder was thoroughly saturated.

"The advance of the locusts was checked somewhat by flaunting cloths, flags, etc., in front of the van. At the same time the poison was distributed in small quantities among the pests in rows ten feet apart, a small portion being cast about every four feet in the rows. By this means the poison was spread among the greater part of the swarm.

"The first effects of the poison were to restrain the advance, it being no longer necessary to resort to the original tactics, i. e., the flaunting of flags, etc. The locusts attacked the poisoned fodder voraciously, each spike of grain killing hundreds. Of those that ate, the few that, the following morning, had not succumbed had the appearance of being intoxicated, and were quickly disposed of by beating with sprigs dipped into what remained (about two-thirds) of the solution.

"Care was taken to gather the rest of the poisoned barley which the locusts had failed to devour. On the following day about one-third of the original flock had succumbed to the poison. The survivors fed upon the dead ones, and from this on their destruction was effected automatically, there being no further necessity for spreading the poison. In about four days the elimination of this great swarm of locusts was complete.

"It is worthy of note that the birds which fed upon the poisoned locusts showed no signs of having been affected. The work of destruction was simple, and the only material cost involved was the work of four persons for two hours. From the moment the foremost of the swarm began to take the poison the advance of the entire swarm was checked, and the unaffected showed no disposition to advance farther."—Harpers.

POWER ON THE FARM

There is a rapidly growing demand for a satisfactory power for use on the farm. In many places windmills have been arranged so that they not only pump water, but do other valuable service; but ofttimes when they are most wanted there is no wind, and many farmers have put in small gasoline engines to pump their water, the original expense not being much larger than a windmill and they are always ready for service and can be used for other work as well.

It has been discovered, however, that when a farmer puts in a machine, he immediately begins to see other ways in which he can use it and that most of such ways require a great deal more power than the engine which he thought was large enough for his needs will furnish. He finds that he can make a decided saving both in money and in time by grinding feed for his stock; that he can use the power for shelling corn or for sawing wood; and that for these purposes a power of from five to eight horse-power is needed, and with the larger size mentioned, he can cut and fill his silo by using a small ensilage cutter and a feed carrier. But if he wants to fill his silo to the best possible advantage in saving of time and labor, with a blower attachment for which he will want from twelve to fifteen horse-power, he will then require a larger machine.

We would advise every farmer keeping any quantity of stock and seeing the necessity for a power plant, to purchase not less than a five horse power gasoline engine of some make, backed by a concern in which the purchaser can have confidence. There is no more annoying machine that can be purchased than a gasoline engine on a farm. It is worse than a balky horse, for you usually have another horse at hand or can borrow one that can do the work. On the other hand, thousands of farmers without any mechanical training are running gasoline engines successfully and would not think of running the farm again without it. Get a good engine that is large enough for your needs.—Dakota Farmer.

UNBURNT LIME FOR SOILS.

It is not well to condemn a practice which some one may have suggested after a single trial. The value of government farm experiments lies in the fact that they are exhaustive. For instance, it is often said that the practice of liming soils with unburned lime rock is a waste of energy. It may be or it may not, according to varying conditions. These same Jersey experiments showed that on sandy soils ground unburned lime gave better results than burned and slaked lime. One-half ton per acre of finely ground oyster shells (unburned) gave a good increased yield in sandy soil and was entirely without effect on heavy, clay soil. On sandy soil lime should be applied less frequently and in smaller dressings than on heavy soils; nevertheless it may be of the utmost importance to apply it to insure maximum crops.

Following the testing method employed by the Bureau of Soils of the Department of Agriculture, the Florida Station determined that an application of ground limestone (unburned) doubled the yield of "beggar-weed," the legume which shares with the cowpea the honor of being termed the "clover" of Florida. Soil which was fertile but undoubtedly deficient in lime was taken for the experiment and the plants and roots on the limed soil not only yielded double the weight of those grown on the unlimed soil but it was noticeable that

This quick-firing "three-shot" gun is the handiest and most up-to-date article ever made in the shot-gun line. It's yours for **$8.00**

Sent by express, prepaid, to any address in the United States, upon receipt of price. Absolute satisfaction and safe delivery guaranteed.

The HOPKINS & ALLEN "Three-Shot" Gun

is unequalled for quick shooting. The three shots, one in the gun and two in the clip, can be fired with the rapidity of a repeater. No more missing good shots because your ammunition isn't with your gun. There are always two shells in the clip. No need of keeping a loaded gun in the house—a shell is slipped into the breech at a second's notice. Your gun is always ready for a shot at hawk or game, and you don't have to hunt for shells while the game gets away.

You were never offered a gun as good as this for the price.

Fine decarbonized steel barrels bored full choke for close shooting and deep penetration. Frame case-hardened. Stock and fore-end fine walnut. Top snap action, locks automatically, and joint takes up its own wear. Rebounding hammer, rests in safety notch after firing, eliminating danger of accidental discharge. Hard rubber butt plate. This gun is guaranteed to shoot factory-loaded nitro powder shells. 30 or 32 inch barrels. Automatic ejectors.

1908 GUN GUIDE, FREE!

Our Gun Guide and Catalog for 1908 describes in full 11 styles of double guns, 8 styles of singles, 10 styles of rifles and innumerable kinds of revolvers. Gives lowest prices and offers most complete line. No sportsman or gun lover should be without it. Write for it now.

THE HOPKINS & ALLEN ARMS CO.
Chestnut Street Norwich, Conn.

300,000 Feet Water Pipe Cheap

ALL SIZES

150,000 feet of this shipment is second-hand pipe, practically as good as new, and is now on sale at a big discount by the Adams Pipe Works, 2025 Bay street. Sizes and prices: ¾-inch 2 cents per foot; ⅜-inch, 2 cents per foot; ½-inch, 2¼ cents per foot; ¾-inch, 3 cents per foot, 1-inch, 4¾ cents per foot; 1¼-inch, 6 cents per foot; 1½-inch, 7 cents per foot; 2-inch, 9¾ cents per foot; 2½-inch, 15 cents per foot; 3-inch, 19 cents per foot; 3½-inch, 24½ cents per foot; 4-inch, 30 cents per foot.

Oil well casing prices and sizes: 2-inch. O. D. 7 cents per foot; 2-inch, I. D. 9 cents per foot; 3-inch, 13½ cents per foot; 3¼-inch, 16 cents per foot; 3½-inch, 17 cents per foot; 4-inch, 20 cents per foot. All pipe is carefully inspected, new couplings and new thread are put on every piece, every joint is guaranteed to be first class, serviceable pipe. Mail orders promptly filled. To reach the Adams Pipe Works in Los Angeles, take car marked Pacific Boulevard, starting east on Seventh street from Broadway. Ask conductor to let you off at Bay street and go east half a block. Phones, F1917, Broadway 1264.

EUCALYPTUS

Balled in moss and leaf mold. All the roots saved. None sent out too small to plant. Sample lot of 100 in flats, tops protected, $1.60.

Henry Shaw
320 River St. Santa Cruz, Cal.

When writing advertisers, mention Cultivator.

the plants receiving no limestone were almost devoid of nitrogen-gathering nodules, while those treated with lime were fairly well supplied with them. It is stated that it had been the prevailing opinion among a large class of Florida farmers that no benefit could be expected from the application of lime to soil unless the lime was burned. Lime has been shown beyond question to improve soils—i. e., induce greater crop yields—not so much by directly feeding the plant as by unlocking plant food in the soil.

DRY FARMING CONGRESS.

The growth of the trans-Missouri Dry Farming Congress in three years, from a somewhat local movement among Colorado "dry farmers" to a great international congress in which representatives of millions of acres of lands in the arid districts of the world are working together to study the problems confronting the "arid land" farmer, is one of the interesting developments of the year. Hon. Elihu Root, Secretary of State, has just issued letters from the State Department, inviting the ambassadors and ministers of all nations represented in Washington to participate in the coming third congress of the dry farmers, and all nations having districts where the natural rainfall is slight and where irrigation is impossible, will be urged to send delegates to attend the congress and to study there the methods advocated by the western farmers, who have been mastering the problems and have already "made good."

The third congress will open in Cheyenne, Wyo., February 23 next, and will continue three days.

Already Algeria, Turkey, Turkestan, Russia, Australia, New Zealand and Mexico have joined the congress, the memberships being in the names of the agricultural secretaries, and these countries will probably make a special effort to place reports before the congress and to discuss their neeeds and conditions. Australia recently sent Commissioner Strawbridge of the Department of Agriculture and Senator James McCall as agents for the government to study western conditions and the so-called "dry farming" methods in practice. They have just issued a 100-page report showing the conclusions reached after comparing American conditions with those in Australia.

WHAT FERTILIZERS ARE WORTH.

The real and relative value of one ton each of several fertilizers is given by the Illinois College of Agriculture:

A ton of fresh farm manure contains ten pounds of nitrogen, two pounds of phosphorous and ten pounds of potassium, with a total value of $2.34.

Of dried blood, 280 pounds of nitrogen, worth $42.

Of sodium nitrate, 310 pounds of nitrogen, worth $46.50.

Of ammonium sulphate, 400 pounds of nitrogen, valued at $60.

Of raw bone meal, eighty pounds of nitrogen and 180 pounds of phosphorous, worth in all $33.60.

Of steamed bone meal, twenty pounds of nitrogen and 140 pounds of phosphorous, worth $33.

Of acidulated bone meal, forty pounds of nitrogen and 140 pounds of phosphorous, worth $22.80.

Of slag phosphate, 160 pounds of phosphorous, worth $19.20.

Of rock phosphate, 250 pounds of phosphorous, worth $30.

Of acid phosphate, 125 pounds of phosphorous, valued at $15.

Of potassium chloride (muriate of potash) 840 pounds of potassium, worth $50.40.

Of potassium sulphate (sulphate of potash) 800 pounds of potassium, worth $48.

Of kainit, 200 pounds of potassium, worth $12.

Of wood ashes (unbleached) ten pounds of phosphorous and 100 pounds of potassium, worth $7.20.

SOWING ALFALFA.

Just before sowing there should be scattered over the land broadcast, or drilled in with a grain drill, two or three hundred pounds of inoculated soil. This soil may be taken from an old alfalfa field, or since sweet clover, or what is commonly known as "bee clover," has the same bacteria on its roots as alfalfa, soil taken from around these plants will answer. If this is broadcasted it should be harrowed just as fast as it is scattered since the light kills the bacteria.

The seed should be of strong vitality and free from obnoxious weeds. It should be sown at the rate of from 15 to 20 pounds per acre, depending upon its quality and the character of the seed bed. It should either be put in with the seed attachment of the grain drill, allowing the hoes to cover it lightly, or if broadcasted it should be sown half one direction and half the other, as this gives more uniform distribution. It should be harrowed in lightly, covering the bulk of the seed from one-fourth to one-half inch deep.

WEBER'S MOVED.

If any man in California understands the needs and requirements of the dairymen or the creamerymen and knows how to meet those needs it is Mr. Weber of the O. J. Weber Company. For 20 years Mr. Weber has been engaged in catering to this trade with Los Angeles as his base of operations. For many years he was connected with the G. G. Wickson Dairy and Cream-ery Supply Company as the manager of its Southern California House. For years he was secretary of the Creamery also of the Milk Board of Trade. These positions gave him such a prestige that when he severed his connection with the Wickson Company and established the O. J. Weber Company 557 South Los Angeles Street, those who knew him readily predicted that things would be doing along his line in the near future. This was soon proved to be true for within a year after the establishment of that house the store room space was doubled by the tearing of a hole through the wall into the next room and the addition of several car loads of creamery supply stock. These two rooms had to suffice for the growing company until the end of December when the walls of that establishment could be bulged no more and new quarters had to be secured. New rooms especially constructed for the business were located on the corner of East 6th and Maple Avenue. These large rooms especially fitted for this work enable the better arrangement of the stock and with large sky lights give one of the best fitted rooms for this line of implements of any on the Pacific Coast.

The new quarters are well worth a visit on the part of dairymen or creamerymen.

A Sacramento River Boat Taking Valley Produce to Market.

Nitrate of Soda

Nitrate Sold in Original Bags

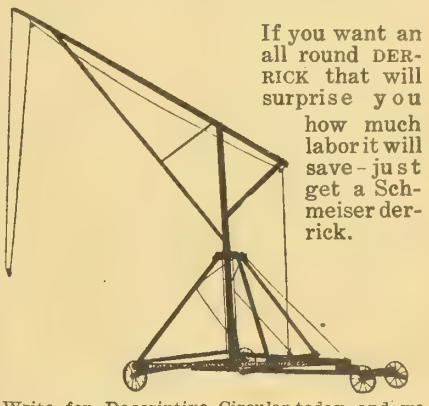
NITRATE AGENCIES CO.

64 Stone Street, New York
Keyser Building, Baltimore, Md.
36 Bay Street, East, Savannah, Ga.
305 Baronne Street, New Orleans, La.
140 Dearborn Street, Chicago, Ill.
Holcombe & Co., 24 California Street
San Francisco, Cal.
603-4 Oriental Block, Seattle, Wash.

Address Office Nearest You

Orders for All Quantities Promptly Filled—Write for Quotations

The Schmeiser
Portable Automatic Derrick



If you want an all round DERRICK that will surprise you how much labor it will save—just get a Schmeiser derrick.

Write for Descriptive Circular today and we will tell you how it can be done.

Schmeiser Mfg. Co
Davis, California

The Seed House
OF THE
Great Southwest

Headquarters for Ranchers, Gardeners, Nurserymen and Poultrymen. A special Eucalyptus Department. Write for catalogue.

Aggeler & Musser Seed Co.
113-115 N. Main St., Los Angeles, Cal.

Pacific Seed Co.
C. Bagnall, Prop.
GROWERS AND IMPORTERS OF
Grass, Vegetable and Flower Seeds
All Kinds of Bulbs and Onion Sets
609 J St., Sacramento, Cal.
Send for Catalogue. Please mention Cultivator.

Crimson Winter RHUBARB

$1.50 a dozen, $6.00 per 100, $40.00 per 1000. Now is a good time to plant. Pedigreed Stock. Fruit Trees and Berry Plants of all kinds.

J. B. Wagner, Pasadena, Cal., 'Barb Specialist.

AGENTS WANTED

GOPHER DOPE to exterminate gophers, ground squirrels, rats, mice.
KILLS A BUG Moths, Mosquitoes, Bed Bugs, Ants, Roaches, Fleas, Lice and Mites on Fowls. Disinfectant and Germicide.
PUROLINE A Powerful Antiseptic and Deodorizer. Odorless, non-poisonous. For use in hospitals, homes, public institutions, boards of health and ranches. ***B. & G. Disinfecting Co.,*** 417 Laughlin Building, Los Angeles, Calif.

FOR SALE

One 45 H. P. Steam Tubular Boiler.
One Dow Steam Pump.
One 5,000 gallon Iron Tank.
One 3,000 gallon Iron Tank.
One 4 H. P. Fairbanks Gasoline Engine.
All in good condition and cheap for cash.

West Highlands Water Company
Home Phone 772 Highland, Cal.

Improved Berry Plants

Strawberry, Blackberry, Raspberry, Loganberry, Himalaya, Phenomenal Berry and Dewberry Plants in variety. You will save money by getting our catalog before ordering.

G. H. HOPKINS & SON
Burbank, Cal.

Walnut Trees

Grafted or grown from carefully selected seed. Postal gets prices.

A. A. Mills, Anaheim, Cal.

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TREES

The New Fruits

Santa Rosa Plum
The Rutland Plumcot
The Opulent Peach

And the usual full and complete assortment of citrus, deciduous and small fruits, all of which are graphically described in our new

Twentieth Anniversary Catalogue

a copy of which we want every one to have who is interested in planting trees; it is free.

TRUE STOCK A QUALITY

ARMSTRONG NURSERIES
ONTARIO, CAL.

Trees! Trees!

25,000 Grafted and Seedling Walnuts from best selected seed and grafts. 25 kinds of Peaches, clean and well rooted; 20 varieties Apples; a choice stock of Royal 'Cots; 4000 Satsuma and all other leading Plums; Oranges, Lemons, Grapes, Palms, Roses and Ornamentals. Anything in the nursery line. A fine, well assorted, clean and thrifty stock. My personal attention is given to selecting best buds, grafts, seeds and cuttings to propagate from.

A. R. Marshall's Nurseries
Box 64 **Sales Yard Cor. 3rd and Main Sts., Santa Ana, Cal.**

ALL KINDS OF

STREET AND ORNAMENTAL TREES

MONTEREY CYPRESS and GUAVAS.

We can furnish palm and other ornamental trees eight feet high, which add greatly to the value of a place as soon as planted. We also have a large stock of Eucalyptus Globulus, Corynocalyx, Rudis, Rostrata, Terticornis, Diversicolor, Robusta and Ficifolia. Our special eucalyptus circular, telling how we grow and handle our eucalypts by the Carroll method, mailed free.

Wholesale and Retail

The Anaheim Evergreen Nurseries, Tim Carroll, Proprietor
Anaheim, Orange Caunty, California

The oldest nurseries in Southern California, established in 1868 by present owner. Nurseries located 200 yards west of West Anaheim station (S. P. R. R.) Sunset Phone Main 413.

Grafted Walnuts a Specialty

15,000 Trees, Grafted and Seedlings

Grafted trees grafted on Northern black and California soft-shell roots. Seedling grown from selected nuts from grafted trees selected by myself. Place your orders early to avoid the rush and get the best trees. Price 15c and up. Took first premium on nuts and trees this year. Some orange and lemon trees still unsold. Fine lot of Kadota Fig trees.

Whittier Nursery **Chas. H. Hamburg**
Est. 1887 by Present Owner ***Whittier, Cal.***
Home Phone 288

Fruit Growers and Vineyardists

P. N. K.

We Would Advise You to Use Our

This is a Fertilizer well adapted to produce a good, vigorous growth to your trees and vines, and the best quality of fruit in quantities that you desire, consequently paying you large interest on the money expended. Make a trial of this brand and you will use no other. Write for our pamphlet, ***"The Farmers' Friend,"*** for 1909.

The Pacific Guano and Fertilizer Company
268 S. Market Street - - San Francisco, California

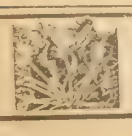
125 to 140 lbs. of Grapes to the Vine

Raised by Ex-Postmaster Rush Stevens of Sacramento on his ranch with

Tom Lewis' Fertilizer

My Fertilizer is lower in price than other fertilizers and guaranteed to give results. I have hundreds of testimonials. Send for circular and prices.

Tom Lewis, 1916 1918 10th St., Sacramento, Cal.



Crimson Winter Rhubarb
$1.50 Per Dozen. $6.00 Per Hundred. $40.00 Per Thousand.
Superlative and other berry plants. Pedigreed stock only.
J. B. WAGNER - The Rhubarb and Berry Specialist
Pasadena, California

PRUNING DECIDUOUS TREES.

Continued from Page 31.

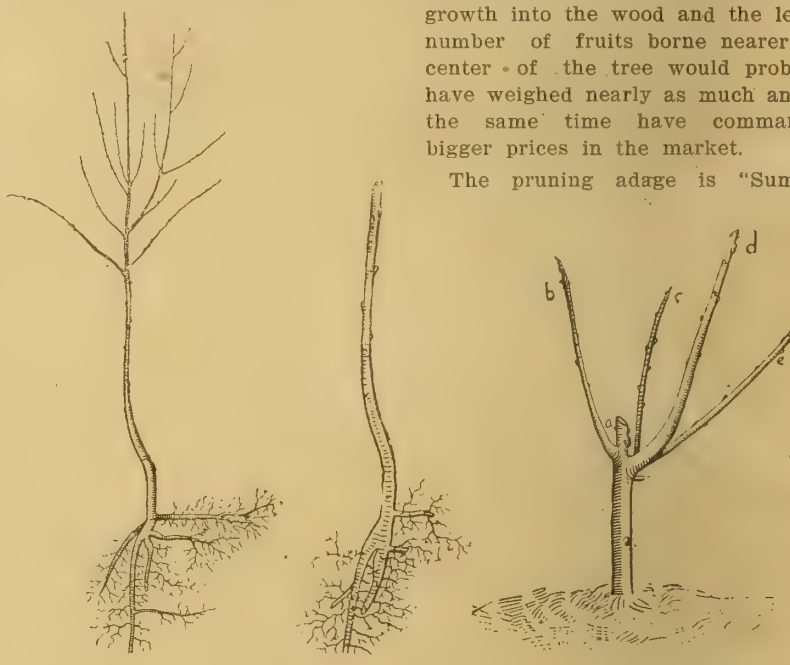
more sunshine to the center of the tree. Variations from these rules will of course be followed as may be necessary to make a limb grow sideways, inwards or outwards in order to make it more properly balance the tree while other limbs on the same tree may have followed the general rule.

Older Trees.

Where one comes into possession of an orchard which has been neglected for several years, then the saw or chisel has to be called into requisition and what is sometimes called "tree butchery" has to be indulged in.

Tools.

A word as to tools at this point may be in order. As we noted in the beginning, the thumb and finger are the most valuable factors in pruning. Others assert that the small pocket knife is the only tool which should ever be used in the orchard. These extreme statements may be used to convey the information that greater care should be taken to remove objectionable limbs when they are small. But such careful work being so seldom done, other tools are necessary.



Original Tree as Pruned for Setting Too Long and Carless Pruning.

At least three should be part of every pruner's kit; a good stout knife, or some prefer the bill hook; a well built pair of pruning shears which will hold an edge, and, lastly, a good saw. The knife should be a good knife that will hold an edge and may pass at that. The hand shears cannot be too well made. At best they are often exasperating. The very best of framework should be had which permits of the blade being exchanged and a new one inserted when the old one wears down.

Of saws, like the shears, there are all kinds. The preference usually is for the ordinary small saw, which make the cut while pushing. Other pruners prefer the semi-circular saw, or, rather, one which has a strong curve to it which makes the cut while drawing toward the pruner. This is much less liable to breakage. In any case, it must make a clean, fairly smooth cut. In old orchards which have been neglected and many tangled limbs left massed together, a very desirable tool is the mallet and chisel. This will remove limbs sometimes so situated that the saw will not reach them at all, and also leaves an exceptionally smooth cut, which is a factor in quick healing wounds. Another convenient tool, in fact, almost a necessary one with large trees which require topping or heading in, is the pole pruner, or shears at the end of a long pole and operated with a wire running down to the handle. With these a large tree can be headed in vastly quicker time than by attempting to do it from the top of a tall ladder.

The Older Trees.

After the third year's pruning and the trees are ready for bearing, heading in or allowing the branches to grow at full length depends upon variety and upon climatic conditions. With the strong growth in California heading in with some trees is essential. We have seen prune trees bent out of all semblance to a tree by a big crop which came at the ends of long, slender limbs. Peach trees have borne themselves to death, or borne their vitality away and been blown to pieces also by the same kind of management. A little judicious topping would have thrown more vigorous growth into the wood and the lesser number of fruits borne nearer the center of the tree would probably have weighed nearly as much and at the same time have commanded bigger prices in the market.

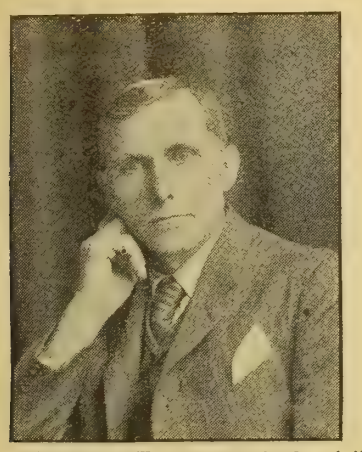
The pruning adage is "Summer pruning for fruit, winter pruning for wood." Apricot growers as a rule believe in the summer pruning. This is done as soon as the fruit is removed. Heavy topping of the trees causes strong growth of young shoots which fill with fruit buds giving a good crop the coming year. Heavy irrigation is usually given immediately after pruning. Peaches are less often summer topped, but strong cutting in is advisable at the winter pruning. Old peach trees which have ceased to bear heavy crops may sometimes be renewed by cutting back severely during winter.

Painting Wounds.

Decaying spots or knots in the center of the trees are disastrous to the health of any tree. These can be avoided if proper pruning is done. The cut, whether it be with saw or chisel, should be smooth and as near the trunk or main limb as possible, or as the pruner will tell you, "saw it off just at the collar." This is not so close to the trunk of the tree as to make an exceptionally large wound; neither is it so far away that the projecting stem will die back and ultimately decay. After the cut is made the wound should be covered with something which will act as an antiseptic which will prevent the growth of any fungus on the exposed surface and at the same time prevent the weathering or checking of the cut surface. The ordinary grafting wax treated and applied to these wounds has usually been preferred. Some claim, however, that the ordinary lead and oil is the best of any covering for tree wounds. Tar has been used, but is found objectionable.

No Overproduction of Fine Rhubarb

"NO sir, I do not believe it is possible to plant sufficient rhubarb to supply the market with what it really wants, to say nothing of producing to the extent of over production. Furthermore I do not believe there will be any necessity of 'creating' a demand for this product of which we are producing altogether too limited amount. You have only to consider the great demand which there must necessarily be for such an excellent product and the limited field in which it does well. Crimson Winter Rhubarb is produced successfully in only a very small section of California. Florida and other southern states have tried it but with such indifferent success that it will probably not succeed there. This is probably due to the low swampy nature of the ground which at times has too much rainfall to admit of good drainage. Therefore in answer to your question as to the possibility of over production, I must answer emphatically, 'there is none.'"



J. B. Wagner, The Rhubarb Specialist.

Note the size of the stalk of Barb in Mr. Wagner's hand. It is larger than his wrist. Other stalks on growing plants are nearly as large.

The above statement was made by J. B. Wagner, the rhubarb King of Pasadena in answer to a query. And from all that he says and from points we have learned of packing houses already being built and car loads being forwarded of his products it certainly looks good to consider the great possibilities for the future.

A Car a Day.

One of the large fruit buyers of California has stated that the city of Los Angeles alone will consume of this product at least a car a day through the winter season, this in face of the fact of an abundance of oranges and other cheap fruits all the winter through. Eastern consumption should be proportionally vastly in excess of that of California.

The Phalanx Company which is at present engaged in opening the market with Philadelphia as the center, writes most encouragingly regarding the outlook in Philadelphia. The few shipments which have been made were a complete success though they were considered more in the nature of a part of the advertising campaign than as real commercial shipments. This concern now has its packing house ready for work at Pomona and running to it are spurs from both the Salt Lake and Southern Pacific Railroad. This concern expects in the near future to supplement this packing house with a cannery and possibly a winery at which the cull product may be worked up into a product which will command the top of the market. By this means every stick of the rhubarb which may be pulled will be used in some way. On this point of goods for attracting the eastern buyer, Mr. Shoemaker writes to Mr. Wagner after a few months experience in developing the city market,

Shoemaker Says.

"A reputation for quality is being established, which is the one essential thing to be maintained to keep Crimson Winter Rhubarb in the fruit class.

"Any inferior product sent to the market at this time will kill it. This is the thing to be guarded. The industry is in its infancy and the great danger is that some over zealous growers may try to put an inferior quality on the eastern market.

"After its proper culture is thoroughly understood, this danger will lessen. We must therefore help this infant, until it can walk, and protect it from this danger."

Mr. Shoemaker says further: "There are many ways of growing it, but only one right way, which is in accord with your published methods. There is only one right way to pick it and market it, which is in accordance with the methods we have found out by practical experimentation.

"We have determined this year to ship from our own plantations only that which is right for the eastern market, and we shall expect others to do likewise."

Just Pride.

Mr. Wagner takes great pride in the development of the product to which he has given so much thought and hard work during the past few years. From the modest start which he made with it seven years ago he has today thousands and even hundreds of thousands of these small plants ready for sale. Besides his interest in a commercial way, there is a satisfaction in seeing the working out of this product to such complete success which is a matter of great pride with him. His own efforts have been so largely taken up with selecting, hybridizing and working up a tablished as yet very small plantations. But it is a pleasure to him to know that men like Messrs. Maxewell of Downey, Harris of Norwalk, Teel of Santa Ana, Bryant of Pomona, Loftus of Monrovia, Kopp of Burbank, Lee of Covina, Hollister of Chino, Hayward of Thermal and Lawson of San Jose are finding both pleasure and profit in the culture of this fruit.

Rhubarb is Not All.

In speaking at such length of Mr. Wagner's great success with the rhubarb, it should not be imagined that this is his only work, although his principal one. He is engaged in the introduction and breeding up of the Udo Japanese salad more perfect plant that he has for himself esplant, also of several hybrid walnuts of his own creation and several other features, which to the ordinary person causes wonderment that he is able to command the time to give attention to so many different lines of his work at the same time.

Recognition.

As a recognition of his great work, Mr Wagner has been awarded a gold medal at the Portland Exposition 1905, and his products secured the highest award at the Jamestown Exposition 1907. Of course at the state fair he always takes everything in sight which is takable. We may add also that his public spirit in this matter is shown in that for the last two fairs Mr. Wagner has offered special premiums on Crimson Winter Rhubarb whether the same was grown from plants purchased from his grounds or not.

He announces that from this time forward he will offer prizes at the future state fair which will aggregate over $100 in value.

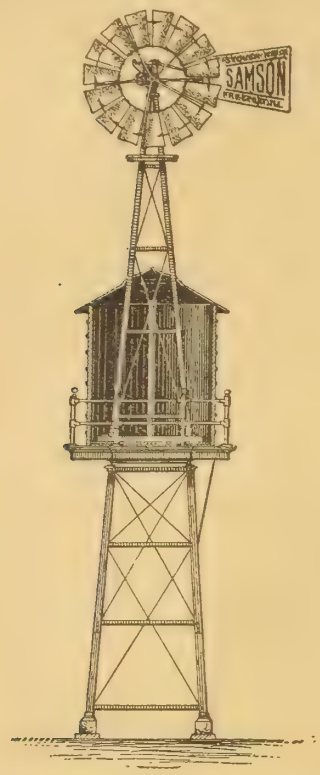
In the matter of the amount of stock which he has and prices, information may be had by writing him at Pasadena, but it may be a matter of general interest to know that his best bred plants of the first size he is selling at 35 cents each, $2 per dozen or $50 per thousand; the next size at $40 per thousand, special prices in large lots, and still smaller plants at still lower prices which also give excellent results but of course require closer attention for the first few months after planting.

Parties anticipating extensive planting will do well to call on or correspond with Mr. Wagner for further information.

Crimson Winter Rhubarb.

SAMSON WIND MILLS

Have double gears, removable bearings and center lift, which double the life of the mill. They will last longer, pump more water and give better satisfaction than any other WIND MILL.



This is an up-to-date Sub-structure, Tank and Wind Mill outfit complete; substantial, economical and attractive. We build all kinds. Write us or our general agents for full information and prices, description &c., before purchasing.

The STOVER MFG. CO.
FREEPORT - ILLINOIS
California Avenue
CRANE CO., LOS ANGELES and SAN FRANCISCO
General Agents for California

59 Styles and Sizes
AND FORTY YEARS AT IT
has established the standard by which others are judged in the
"An erican" Drilling Machinery
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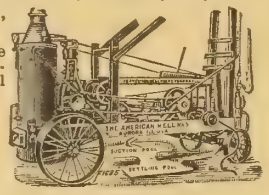
Our new complete catalog is the encyclopedia of the drill hole.



The American Well Works
Aurora, Illinois, U. S. A.
First National Bank Building, Chicago
Henshaw, Bulkley & Co., 335 E. 3rd St., Los Angeles

Grape Pomace

IN response to your request for a statement on the value of grape pomace for fertilizing purposes, I extract from the Report of this Station for 1898-1901, page 261, the following data:

GRAPE POMACE (fresh.)	Per cent.
Water	55.00
	Lbs. per ton.
Potash	16.60
Phosphoric acid	5.00
Nitrogen	17.50
Valuation, per ton	$2.66

GRAPE POMACE (Old.)	Per cent.
Water	21.00
	Lbs. per ton.
Potash	21.40
Phosphoric acid	17.90
Nitrogen	33.60
Valuation, per ton	5.19

MIXED BARNYARD MANURE.	Per cent.
Water	75.00
	Lbs. per ton.
Potash	11.40
Phosphoric acid	6.00
Nitrogen	11.40
Valuation ,per ton	$1.95

You will perceive there is a very great difference between the values of the fresh and the old grape pomace; due, of course, to some extent, to the higher content of water in the fresh. But making allowance for that, it still appears that there is a concentration of the phosphoric acid and nitrogen in the old pomace, while some of the potash has evidently been leached out. This does not necessarily mean, however, that these ingredients are as available in the old pomace as in the new, in which we know them to be in a very available condition. In other words, the old grape pomace would probably not act as a fertilizer as quickly as the fresh, but its effects would spread over several years, while the effect of the fresh would be more immediate. Weight for weight, as you perceive, both kinds of pomace are superior to mixed barnyard manure with 75 per cent. of water. If, however, you make allowance for the difference in the water content, reducing the water content of the stable manure, say to that of the fresh pomace, you perceive that the difference will not only be much less, but rather in favor of the stable manure. In addition, we know that the ingredients of the stable manure are in a rather readily available condition.

From the basis of these data, any one can calculate for himself how well it will pay him to use these several materials. You perceive the total value of the old grape pomace is about twice and a half that of the barnyard manure, and practically double that of the fresh.

As regards the amount to be applied, old pomace could not easily be overdone any more than stable manure, even if several tons are used per acre. There will, in fact, be less danger of the nitrogen of the pomace producing an excessively brash growth because of the more or less humified form of the nitrogen. In the fresh pomace the content could be more easily overdone, and in land not rich in lime the tartaric acid present might, for a time, bring about a little inconvenience; but in nearly all the valley soils of Southern California there is such an abundance of lime that the tartaric acid would be neutralized and then decomposed, just as is the citric acid of the orange culls when plowed in. There are but few lands I know in Southern California in which the tartaric acid would be likely to create any inconvenience, even for a short time.

Considering the considerable loss of potash by leaching of the old pomace, there would seem to be economy in applying the fresh wherever the difference in weight, and consequent cost of hauling, will not be too great. There seems, however, to be but little loss of nitrogen and apparently none of phosphoric acid in the old pomace as compared with the new. Certainly neither of the two products should be allowed to go to waste; and, of course, it must be remembered that it makes a difference whether the pomace after pressing remains in big piles, or is spread out rather evenly. From big piles doubtless some nitrogen would escape in the form of ammonia, but when spread about, whether near the winery or in the field, there would be little loss of practical importance in allowing the weight of the material to diminish so as to decrease cost of hauling.—E. W. Hilgard, Berkeley, California.

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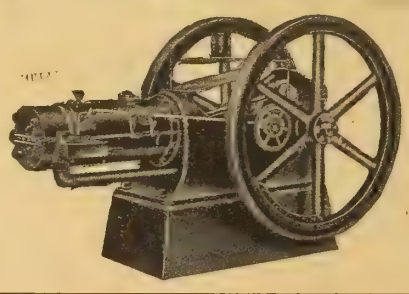

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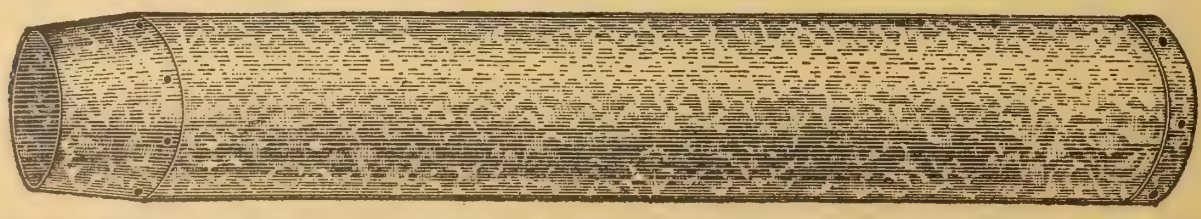
GEORGE TOURNY, Sec'y.



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MANURING THE ORCHARD.

As a rule, men rob an orchard of its fertility with less compunction than is felt when the same kind of soil robbery is carried out in the open field. Because the roots of trees penetrate the soil deeply, the idea is conveyed that an inexhaustible supply of fertility must be tapped. As a result of this belief it is not uncommon to find instances where orchards are allowed to remain for years without any applications of fertility whatever, and in the meantime they are producing fruit and in all probability being pastured.

In their work on American horticulture, Budd and Hansen call attention to the fact that after an orchard has borne repeated crops and after the trees are too large to justify sowing catch crops the free use of barnyard manure is advisable at least once in four years. The term "fertilizer sick" has come into use owing to the fact that in the East and in the South commercial fertilizers are used only, which results eventually in bringing the soil into an unproductive condition on account of the lack of humus. This is the material that is supplied by farmyard manure that is of the greatest value. although, of course, plant food elements are also contained in the manure and these find their way into the soil after surface dressing. ,

There is nothing that is more healthful to an old orchard than a liberal application of farmyard manure. An instance comes to our mind where a row of old Genitan apple trees were showing signs of decay at the top and the fruit produced on these trees was very small and very scabby. A rather heavy application of farmyard manure was made three years ago last spring, and as a result the trees are looking much fresher and last year's crop was very readily marketable. The apples were large for this variety and they were smooth.

In another case the same treatment was applied to some old Snow apple trees, and the result was even more striking in this instance. The fruit has been much better each year since the application than it was before.

If an attempt is made to manure the orchard it is advisable to spread it over the entire surface of the orchard; that is, between the trees as well as under the trees. If the supply of manure is limited, however, then make the application under the trees. There is no special advantage in applying it near the trunk, as better results will be obtained from a given amount of manure by covering a circular patch under each tree, having the outer circumference of the circle just about as large as the outer branches and leaving a strip six or eight feet in diameter in the center of the tree without manure. Of course we would advise not being too economical if there is plenty of manure available, because it should be remembered that some of the feeding roots even go out beyond the branches of the trees.

We prefer a moderate application every three or four years to a heavy one at longer intervals. It will be better for the trees and more uniform fruit yields will be obtained.—Iowa Homestead.

Orchardists of Colorado in a recent state convention discussed the matter of orchard heaters or frost protectors for use in their orchards during the early blooming season.

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Uusigned communications receive no attention.

Pecans.

Regarding the query as to pecans growing in Riverside which was answered last week, further answer is received from Mr. Leonard Coates of Morganhill, who writes that he thinks pecan trees will do well in the river bottom lands near Riverside. He adds: "It is impossible to say which of the improved varieties would do best. It might be well to plant seedlings with the idea of grafting later on. We have two year old seedlings which we sell at $10 per hundred."

Small Guavas.

I have a number of guava bushes that have plenty of fruit, but it is very small. I have used plenty of fertilizer from the horses but cannot increase the size of the fruit. Will you kindly advise me what I should do? What do you think the trouble is? —"Subscriber," San Diego.

Your guavas are probably seedlings and of a variety which will not grow large, because the treatment you seem to be giving should be sufficient to give all the size of which any particular variety is capable. We presume your only remedy is to graft the bushes to some variety of known value. Under right conditions, especially in a glass house, you can reproduce the guava from cuttings. This would be preferable to the ordinary seedlings.

Orange Tree in Poor Condition.

Three years ago I planted two orange trees. Have made fine trees but, though growing vigorously, fruit is very small. There is no lack of water and they have been well fertilized. Am I allowing too many oranges? There are about three dozen on each tree. There is much bloom. Shall I thin the young fruit? No scale.—F. R., Ventura.

It is hard to answer with any definiteness, though two points you mention, that there has been no lack of water and that there is much bloom, may indicate you have given too much water. In any case trees showing bloom at this period of the year are out of condition, for it is yet too early by nearly three months for them to be showing any bloom. We imagine your trees may be on a lawn or where they have not had thorough culture. If so you will never be able to grow the best of fruit. If where they may be spaded up, give thorough and deep culture to admit the air to the soil which is probably soured and is not in good condition for orange roots. Oranges require warm, well tilled soil. Do not water too often. Once every 30 days unless on very dry, hot soil, is plenty often enough and even then only during the summer season and when necessary.

Caps for Alfalfa.

I saw in the Cultivator some time ago an article regarding use of caps for alfalfa. What is material and where can it be obtained?—A. H., Salida.

Caps have not been used to any extent in California, hence have not become a factor in the trade. In the east they are used largely to keep the curing hay from the moisture and from the sun. The material is fairly heavyweight muslin. These caps after being placed over the cock are held in place with pegs at each corner. While necessary in the rain belt we hardly think California conditions would justify this extra expense. However, as the night dews and fogs of some sections are very injurious to curing alfalfa the farmer who takes pride in a perfect article might find profit in this additional care. It must be borne in mind that alfalfa has practically the same feeding value, ton for ton, as does good wheat bran, so that it is well worth careful curing.

Scale.

Please explain what is best thing to do for scale on plum trees.—F. W., Santa Ana.

This depends somewhat on the variety of scale. If it is the San Jose scale, the best wash ever tried is the old sulphur, lime and salt solution, which is however very difficult to mix unless one is prepared for it. As this pest is not very serious now it is probable your trouble is from soft or black scale, either of which may be readily reached with the distillate emulsion or mixture. On the dormant trees you may apply almost any strength. Some however, prefer the coal oil mixture which may be applied at the rate of one gallon of coal oil to nine gallons of water, all to be most thoroughly agitated at the time of application.

Oranges in Imperial.

Will you kindly advise me as to oranges in Imperial valley? Will they color here as early as in other districts? Is the fruit of good size? Also will grapefruit do well here?—H. D., El Centro.

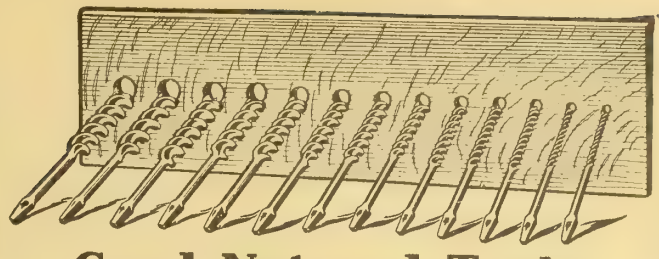
Oranges have been tried in many sections of Imperial valley and many are enthusiastically supporting the extension of the plantings. They will color up earlier than in most any other section of the state. In fact, fully as early as in Arizona, and probably earlier than in Tulare county. They should grow to good size. As to grapefruit we have not heard of its being tested there but think without question it would not prove so satisfactory as the early orange. California grapefruit has not commanded the prices in eastern markets which Florida fruit has.

The Weather Bureau reports that the temperature at Brawley was but little below 30 degrees at the coldest this season.

Thornless Cactus.

I have noticed much advertising of the spineless cactus or opuntias and would like to ask: (1) Are they good fodder for stock and do they take the place of pumpkins and will hogs fatten on them? (2) How fast will they grow? (3) If planted in rows how far apart should rows be? (4) How long do plants live when leaves are kept cut for feeding? (5) At what age do they bear fruit? (6) How is the fruit served? (7) Will they grow on most any kind of good soil? (8) When is the best time to set out cuttings? (9) Should cuttings be kept watered? —H. E. T., Santa Paula.

The so-called spineless cactus is wrongly named in that we believe none of it is strictly spineless. It would be more correctly called thornless cactus. The spines are so reduced in the leaf, however, that stock



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find it excellent feed. The fruit is very spiny and the best method of preparing so that it may be handled is to pour water over it, place in a colander and shake it about, when its spines are removed so that it may be handled very comfortably. (1) On waste land where it is impossible to grow other crops it is very probable the cactus will prove a profitable crop. It will not for a moment take the place of pumpkins and we have not heard of its being tried as a hog fattener and do not think it would be satisfactory for that purpose, although it might be a good food for the growing pigs. (2) On good soil where they have received irrigation, the first season they have produced four leaves to each plant. After being established it is probable more extended growth would be given if not kept cut too close. (3) Plant in rows 8 feet apart, 6 feet in the row. Where leaves are cut closely, it is possible closer setting than this would be wise, but at that distance it makes nearly 1000 plants to the acre, which, at the $2 per plant which a company is charging for the plants, would necessitate nearly a $2000 planting expense per acre. We are told, however, that this spring one of the largest seed houses of Los Angeles will have abundance of plants at 35 cents. (4) We do not know how long lived the plants will be, but assume they will live for a great many years. (5) It will bear fruit the second year. (6) The fruit may be served as noted above by pouring water over the fruit and shaking around in the colander so that the spines may be largely removed and it may be handled and peeled. It is then eaten fresh or some make a fairly satisfactory jelly. (7) If you desire to give up fairly good soil to the production of this plant it will doubtless grow well. (8) The best time for planting is May or June. (9) Cuttings should not be watered until they have taken root or there is danger of rotting.

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E. E. McClanahan 112 E. Eighth St., Los Angeles

Injured Tomatoes.

What ingredient must be returned to the soil after a crop of tomatoes to plant again to the same crop? What, if any, value is air slaked lime to the soil? What can you afford to pay for it by the barrel or ton? What is the proper course to take with tomato plants partly frozen down? How much, if any, should they be cut back and can they be profitably carried over to spring after being frosted?—A Subscriber, San Diego.

I am not sure that any one has definitely determined just what particular ingredient may be returned to the soil that has grown a crop of tomatoes in order to insure another crop on the same ground. It would be worth a good deal to know. Experienced gardeners rarely try to grow successive crops of tomatoes on the same soil—finding it safer to change to other crops for a year or two. I do not assert it is impossible, but the chances are against success. If I were obliged to use the same land twice in succession for tomatoes, I would have more faith in a liberal dressing of stable manure than the application of some special fertilizer.

Whether lime has any value, used in the manner indicated, depends. In itself it is not a fertilizer as that term is ordinarily used. Although classed as a plant food, plants will live and thrive without it. But it has great value in its chemical action in decomposing vegetable matter and rendering it available as plant food. I was brought up in Pennsylvania where the fertility of the farms was largely maintained by the use of lime—although it seemed to be a roundabout way. A sod was plowed under any time between November and April and lime spread broadcast at the rate of from 100 to 400 bushels per acre and harrowed in and the ground planted to corn. The action of the lime decomposed the sod and gave the corn crop an enormous supply of humus. It was the usual custom to follow the corn crop with oats and the oats with wheat in the fall, seeding down to grass at the same time. The application of lime to a soil deficient in vegetable matter will make it lifeless and unproductive.

It seems to be generally conceded that California soils have all the lime any crop is likely to need. I know of no experiments having been made here that would enable any one to say what one could afford to pay. It would be interesting to try an experiment in a small way in connection with a liberal supply of stable manure.

The tomato plants partly frozen should be cut back to the uninjured portion. Whether they can be profitably carried over will depend largely upon the season. Sometimes the injury from frost is so great that they fail to recover their usual vigor when spring comes, in which case it is better to depend on new plants.—Q. A. L.

Pruning.

Please give hints on pruning, such as starting young trees as well as pruning old ones. I am well pleased with the Cultivator.—I. T. S., Fortuna.

This question is answered in the first-page article of the Cultivator this week more fully than could be done in this department.

Pruning Olives.

Kindly give information regarding the pruning of olive trees as to time and method. Should they be topped or allowed to grow as high as they will?—Mrs. P., San Jose.

The olive tree should be headed at planting low enough so that the fruit should not be up out of reach at time of picking. The natural tendency of the tree is to grow too high unless topped when young. The main stem should not be over about four feet, and this should support six or eight branches, which may be left to form the head. Ordinarily the cutting consists in removing the leader and fostering the spreading habit. Care must be taken that the tree does not thicken up too much so as to exclude the sunlight. When the tree reaches bearing age you must remember that no fruit of the olive ever grows excepting upon wood which was formed the preceding year. Therefore the continual practice must be to secure abundance of thrifty young growth. From the present time on to nearly blossoming time is the best season of the year for pruning. In sections where there is danger of January or early February frosts, it might be well to defer the pruning so that the young growth, which may be stimulated by the cutting of the trees, will not be out in time to be caught by the frosts.

Almond Growing.

We wish to grow our own almond trees in the nursery, and wish to ask your advice as to planting almonds and budding peaches and plums. Do almonds make a good stock, and what is the best variety of almonds to plant for nursery stock?—L. T., Newcastle.

For the stock it is not so material as to variety as it is that the seed shall come from a strong growing, thrifty tree which will give you a large, perfect nut. The almond stock is considered exceptionally good for peaches. As for plums, some varieties do well, some do not. The French prune succeeds admirably with the almond as root stock or when grafted into the tops of old trees. It should only be used on warm, well drained soils.

Seedling Walnuts.

I have just bought an orchard of thrifty three-year-old walnut trees, selected seedlings. Will it be better to graft them at once to blight resistant trees or to wait until they bear and graft only those that suffer most from blight? The orchards are in the El Monte-Covina district.—P. C., Long Beach.

We would surely defer grafting until this orchard can be tested. Having had three years' growth, you will soon be able to determine regarding the value of many of the trees. If you are able at this time to get thoroughly blight resistant scions it might possibly be wiser to graft at once, but you may develop in your own orchard trees which will be equal if not superior to any which you may find in the country at this time. The search for just such trees as you would wish is being made in every corner, and the one entirely satisfactory has not yet been found.

China Hogs.

Can any of your subscribers inform me where I can get thoroughbred Black China hogs?—J. H. I., Laton.

If our subscriber means the well-known black breed, Poland-China,

they may be had in every section of California. This is one of the best breeds for this state. We do not know of any breed which is called the Black China, however. Can any of our readers give us information?

Transplanting Willows.

I wish to be informed whether I can transplant the common or Grey Willow after it has attained a height of twenty or twenty-five feet, and if so, how it should be done.

Also please give instructions for taking cuttings from Purple Damascus grape vines. The vines were set out last March. They were rooted cuttings. Should they be pruned down close?—H. J. B., Calexico.

The Grey Willow can be transplanted by trimming back all but a few of the main branches, so as to maintain the shape of the top. Dig it up with several of the main roots three or four feet long and keep the ground well wet when it is transplanted. Do not let the top or roots dry out in the least.

Make your Purple Damascus cutting about six inches long, tie in bundles of about 100 and bury, put ends up and put four inches of sand over them and keep it moist. Examine occasionally and when they commence to callous plant them in the nursery row, straight up and down. Have the land moist and soft so as to admit of their being pushed into the soft earth without brusing the callous. While planting keep the cuttings under a wet sack and on some soft moist earth in the box. As soon as a bundle is planted in this way, cover them up clear to the top bud and settle with water within 24 hours. Cuttings planted in this way are most economically placed in a partly filled furrow so that the tops of the cuttings come even with the surface of the ground.

It is not generally known that Purple Damascus is a hard variety to root compared with Malagas. Cuttings of this variety should never be planted in vineyard form for this reason. If you get 60 per cent of the cuttings to grow you will do well.—J. W. Mills.

Veterinary

Dr. R. T. Whittlesey, veterinarian, of 714 East Seventh street, Los Angeles, will answer questions in this department. In writing of sickness or injury to any animal be explicit in giving symptoms and particulars. Always enclose full name and address, but if assumed name or initials are preferred they will be used.

If an immediate mail reply is wished enclose $1.00 for such service, but for replies in paper only, no charge is made if the answer will be of general interest.

Please address all questions that are to receive gratuitous replies through these columns to California Cultivator, 115½ N. Broadway.

All communications to Dr. Whittlesey direct should contain a great big dollar.

Farcy.

I have a chesnut sorrel mare four years old which has the farcy on her belly. I feed no grain; nothing but barley hay. Can you tell me what to do for it?—A Subscriber.

I doubt very much if your mare has farcy but if you are positive that she has there is nothing to do but kill her, as farcy and glanders are one and the same disease, are incurable and dangerous in the highest degree to both animals and men. She may have a dropsical swelling due to a diseased heart, liver, or an impoverished condition of the blood. You do not state whether she is fat or thin, otherwise healthy, if she has been suckling a colt, whether she has been working hard or standing in the stable. Barley hay is mighty poor feed alone for any horse and on general principals should advise more grain and less hay.—R. T. W.

Shepherd Dog.

A valuable shepherd dog recently died. He was four months old. We thought it was a form of distemper. Last Thursday, two or three times during the day, he appeared stiff and sore in the hind quarters, otherwise same as usual, with good appetite. Friday evening gave him one cathartic pill which worked well; he also ate hearty supper. Saturday morning very weak and stiff. He died that night. There was no poison of any kind around. His principal diet when well was milk, scraps from the table; about three times a week gave him a little fresh meat. Please give me treatment and remedy. Want to be prepared if we should ever have another case.—A Subscriber.

The dog probably had inflammation of the kidneys and bladder, and possibly peritonitis at the last end. He may have had an obstruction in the urethra, as he urinated very little.

The treatment would depend on the symptoms as they were presented, and not empiricaly.

A post-mortem should have been made to determine the exact condition.—Dr. Whittlesy.

The record for Arizona oranges this year is held by a car shipped from near Phoenix. Some boxes sold at $7.20 and the total was $27.64.

The meeting of the Chelan County Horticultural Society of Washington was held at Wenatchee last week. Dry farming was the principal topic discussed.

At a recent meeting of the faculty of the Oregon Agricultural College the question of agricultural high and normal schools was discussed and recommended.

The Egyptian cotton which was grown in Arizona during the past season is pronounced by experts as showing more strength than the imported Egyptian fibre.

Farmers of Eastern Washington are discussing the question of the hired man, and the feeling that the white labor should be encouraged and Jap labor discouraged is increasing.

Landscape Architect Robinson's report on beautifying the city of San Jose will soon be delivered to the organization having the matter in charge and it is hoped the Garden City will become more beautiful under these plans.

Cream Separators, all sizes, all prices. O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

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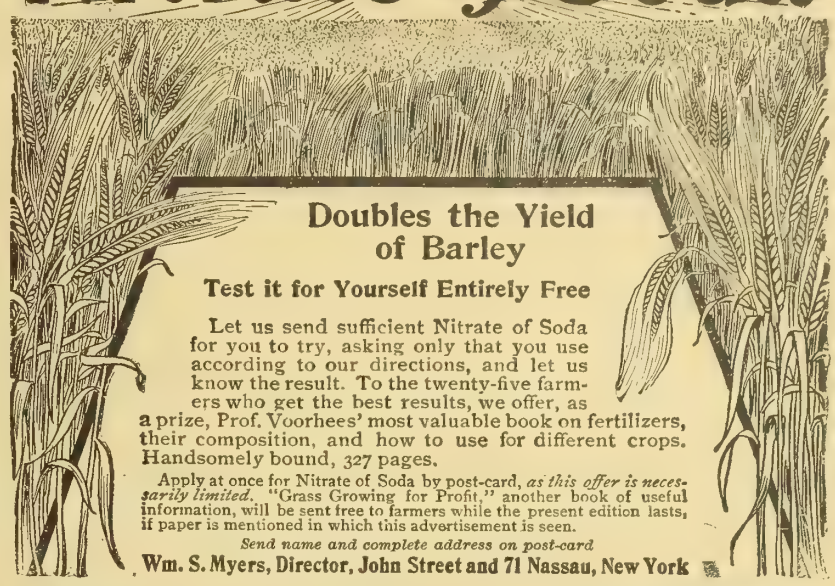

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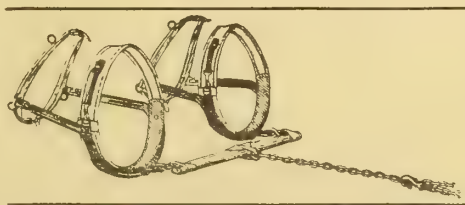

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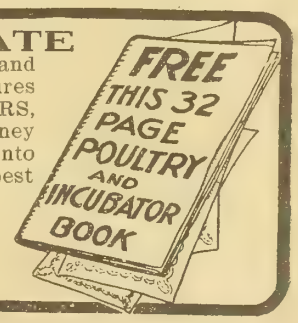

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An Absolutely Free Hair Counting Contest Without Money Or Purchase Consideration And Open To Any Farmer, Stockman or Poultry Breeder. Can you count the number of hairs drawn in a picture of "Forest Patch," sired by Dan Patch, dam by Monaco by Belmont. Write for one of the Above Dan Patch Pictures. I will also mail you a photo engraving of "Forest Patch," the Fine Registered Stallion to be given away and ALSO Drawing showing hairs to be counted and also stating easy conditions. Every stock owner will want to count the hairs on this Splendid $5000.00 Dan Patch Stallion because it means a small fortune free for some one. I paid $60,000 for Dan Patch and have been offered $180,000. I would have lost money if I had sold Dan for One Million Dollars.

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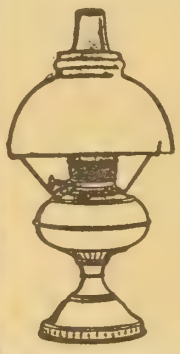
Just the thing for blizzard time or between seasons. Its genial glowing heat makes any room cheerful and cozy. No smoke—no smell—smokeless device prevents. Brass font holds 4 quarts of oil burning 9 hours. Finished in japan and nickel. Every heater warranted.



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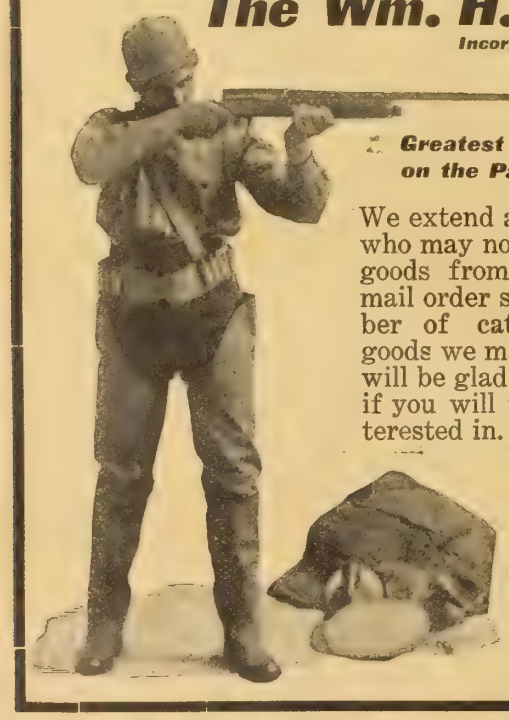

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Remember, the light from Kerosene is the light science has agreed upon as being the purest and best, because it is soft and mellow and restful to the eyes.

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GREAT ECONOMY—COST LESS TO BURN than an ordinary lamp. As easy to operate as gas or electricity, and better than either. ABSOLUTELY SAFE under all conditions. Lighted and extinguished like gas. Burned HIGH or LOW like GAS without a trace of odor. And a BRILLIANT, soft, steady, shadowless light—but this you will have to see to appreciate.

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Household Department

FLYNN OF VIRGINIA.

Didn't know Flynn—
Flynn of Virginia—
  Long as he's been 'yar?
  Look'ee here, stranger.
Whar hev you been?

Here in this tunnel
He was my pardner,
That same Tom Flynn—
  Working together,
In wind and weather
Day out and in.

Didn't know Flynn!
  Well, that is queer.
Why, it's a sin,
To think of Tom Flynn—
  Tom, with his cheer;
  Tom, without fear—
Stranger, look 'yar!

Thar in the drift,
  Back to the wall,
He held the timbers
  Ready to fall;
Then in the darkness
  I heard him call:
"Run for your life, Jake!
  Run for your wife's sake!
Don't wait for me."
And that was all
  Heard in the din,
  Heard of Tom Flynn—
Flynn of Virginia.

That lets me out
  Here in the damp—
Out of the sun—
  That 'ar derned lamp
Makes my eyes run.
Well, there—I'm done.
But, sir, when you'll
Hear the next fool
  Asking for Flynn—
Flynn of Virginia—
  Just you chip in,
  Say you knew Flynn;
Say that you've been 'yar.
—Bret Harte.

GETTING HIS ANSWER.

THE young man had said what he had to say and had emerged from the ordeal feeling like a condemned murderer who had been reprieved.

The agony was over. He was even calm enough to note the frightful square jaw and protruding eyebrows of the elderly man on the other side of the library table instead of seeing pinwheels and stars as he had been doing ever since he had entered the room on his errand.

"Umph!" said the elderly man at last. "No, I'm not surprised. I'd have been a fool not to know it for the last six months! What else should I suppose you wanted—coming around here as often as you have and making a doormat of yourself for Margery and acting as if you liked being a doormat?"

"Oh, I suppose you love her and all that," went on the elderly man. "Seems to me, after a lifetime of observation, that it would not be a difficult task to fall in love with Margery. She's a pretty fine girl, when you come right down to it!"

"You're right there," agreed the young man, fervently.

"Others have thought so, too," remarked the elderly man. "Several others. But I told them no, right off the bat, because—well, you see, Margery had given me a gentle hint to turn them down."

He paused and brushed some cigar ash from his sleeve while the young man looked worried and most apparently had a question hanging on his lips concerning this point in its personal light to him.

"You don't know anything about being devoted to a girl!" thundered the elderly man, suddenly abandoning the cigar ash and transfixing the young man with his glare. "I suppose you think because every time you see Margery you have to travel six miles each way on a tolerably comfortable street car and, when the cars are blocked, get home at one or two o'clock in the morning and still must rise at six o'clock as usual, that you show great self-sacrifice and prove the depth of your infatuation! Humph!

"Let me tell you," went on the elderly man, "that in my day we did more than that and never deemed it worth thinking about! Why, after working like a horse from dawn till dark, when I was your age, real work with my hands, building houses—I didn't start right in cutting coupons, you know—when I was tired enough to go to sleep over my plate of baked beans, I'd oil my boots and rub down the horse and scrub up and hunt out my best tie and ride 15 miles to the next village where there was a girl with the blackest eyes you ever saw and take her to a dance. And after dancing till three o'clock I'd ride 15 miles back home, and maybe have time to pour a bucket of cold water over my head before I went to work again! Yes, sir! Not once, but many a time!"

"You—you must have been hard hit," ventured the young man, with a tentative smile.

"Well, I married her," snapped the elderly man. "And if you can beat her eyes today I'd like to see you do it! And we started housekeeping in a two-room cottage without all this new-fangled kitchen equipment. We had a frying pan and a kettle or two and a tin pan or so, and we didn't starve, either."

"I'd be willing to do the same with Margery," said the young man, sturdily.

"Humph!" said her father. "But Margery wouldn't. Things are different these days. Oh, you needn't tell me that you can give her about as good as she has at home—I know all about you and what your salary is! What do you think a father is for if not to keep an eye on the fellows who hang around his daughter? Not that I bother looking up very many of them!"

The young man strove to appear interested, but his natural impatience as to the outcome of his quest creased his brow.

"I'd be mighty good to her," he said, reflectively.

"Much you know about it," said the elderly man, almost angrily. "Life isn't all wedding cake and silk gowns and illuminations! It's a question whether when you are 60 years old and can look back over the troubles and sorrows and misunderstandings and just ordinary everyday vexations—they're the worst—you can say to yourself that you've always been 'mighty good to her!' It'll be a most uncommon and comfortable state of mind you'll be in, my boy, if you can!"

There was a solemn silence, while the elderly man frowned and smoked harder and the face of the younger man took on more thoughtful lines. Finally Margery's father got up and put both hands on the younger man's shoulders.

"I think," he said, quietly, "I think, my boy, you're the man! You see, I was told to say yes to you! And I like you on my own account!"

"Thank you!" said the young man a bit huskily as they shook hands.—Chicago Daily News.

Sarcasm is a mighty sharp knife an' th' fellow that's wise carries it closed.

OBSERVATION PARTY.

Would you like to know the way one hostess gave her guests a jolly evening? She called it an observation party. When the people arrived, each one was given a little blank memorandum book with pencil attached. Of course these can be made very pretty and elaborate, but plain white paper folded into little booklets and tied neatly answers every purpose. When all had arrived, the women sat in a large circle, every alternate seat being left vacant. Then the men were told they could have the privilege of talking five minutes to every women there, but they were not told why this favor was granted them. At the end of the series of five minute talks, the men were put in another room and then the mystery was unfolded. A list of questions was given each man and he was compelled to write answers to such perplexing queries as: What color are Miss A's eyes? Describe Mrs. B's dress. Does Miss C. wear a brooch? Does Miss D wear any rings? Did Mrs. E laugh while you were talking to her? And so on. The better the hostess knows her crowd, the easier it will be to compose amusing questions. Meanwhile the women in the other room are struggling with a similar list of questions regarding their late visitors, and while the women will probably have less trouble than the men, this is not sure by any means, and it will prove an eye opener to many women to learn how observant some men are. If you care to give a prize, let it be a small leather memorandum book or something equally appropriate. If your friends get as much fun out of this idea as one crowd did, we think the evening will be taken up with it so completely that you will not need to furnish any other amusement.

CAKES WITHOUT EGGS.

Eggs taste too much of money these days for the housewife to enjoy using them. These three recipes are economical ones to use and they are so good that no one will object to eating them, even if eggs are conspicuous by their absence.

Coffee Cake.

Two cups brown sugar, one cup butter, four cups flour, one and one-half cups hot coffee, half cup sour milk, two cups currants or seeded raisins, one rounding teaspoon of soda, two of allspice and three of cinnamon. Pour the hot coffee over the sugar and butter, add the fruit and sour milk. Sift the soda and spices with the flour. Bake in a moderate oven. This cake will be just as good if you use three-fourths of a cup of cottolene and a level teaspoon of salt instead of a cup of butter. A cup of English walnuts chopped fine may be added and an extra cup of currants.

Batter Cakes.

Soak about three slices of dry bread in a pint of sour milk overnight. In the morning add a level teaspoon each of salt and soda and enough corn meal and flour in equal quantities to make a moderately thin batter.

Ginger Cake.

Heat half pint of molasses until quite hot, then pour it over one-fourth pound of butter. Stir into this one well rounded teaspoon of soda dissolved in two tablespoons of cold water, then add half cup of boiling water. Sift a level tablespoon of ginger with enough flour to make a thin batter, about three cups, possibly a little more. Turn into shallow pans and bake in a moderate oven. Half a cup of cottolene and a level teaspoon of salt may be substituted for the fourth-pound of butter. This cake is very nice if baked in layers and jelly spread between the layers.

RECIPES.

Are you getting a little bit tired of fudge? Add some new touches to the chocolate or vanilla base. Chopped fruits, candied or dry, stoned dates, figs, cherries, pineapples, candied nuts, preserved ginger, peanut butter, anything, but only a little of each, chopped in bits and stirred in just after the fudge is taken from the stove will give it a new hold on your affections.

Two ounces of pulverized borax, four ounces of precipitated chalk, one ounce each of powdered myrrh and pulverized orris, sifted through bolting cloth, make an excellent tooth powder that is cheap, pure and efficient.

Pour a hot chocolate sauce over fresh little cup cakes and add a spoonful of whipped cream to each. This is an excellent way to make a very simple dessert answer the purpose of the elaborate one most housekeepers feel bound to offer company.

See how you like "collar," an English meat dish. Put through the meat chopper equal parts of cold cooked ham and tongue. Pound to a paste, add a little dry mustard, and heat the whole. Put in a bowl, add a weight, and let stand until cold. Slice thin and you will have a delightful meat.

Delicious Bread Sticks.

Bread sticks are delicious with any hot beverage, and are made this way: When you mold your bread into loaves, reserve a piece for your stick, work it as for loaf bread and then roll out to the thickness of a half-inch width, cut in strips one inch and a half wide and three inches long or longer. Let remain upon the board fifteen minutes, covered. In the meantime, have a frying-pan on the stove heating the lard to fry them in. Use plentifully of lard, but not so much as for crullers. Fry them a pretty brown, drain on a cloth; get all the grease off, then dust freely with cinnamon and sugar, split open while hot and butter and serve at once. If these are not to be eaten at once, omit the butter.—Philadelphia Inquirer.

DON'T REVEAL YOUR IGNORANCE.

We all want to be thought wise and the easiest way I know of to get such a reputation, whether one is really wise or not, is to stop talking. Just think about it. Isn't it remarkable how much of our ignorance we are not forced to reveal, but do reveal in merely aimless talk? And don't we all give a man credit for knowing many things because he at least knows how to keep still when he doesn't know about the thing under discussion? At the least, ability to keep still implies some self control and self control is a good quality on which to depend.

Sometimes we really have something to say. Then, condense. Talk to the point. Don't say unnecessary and irrelevant things. They only distract the attention of your hearer and weaken your argument. After a bucket is full to the brim the pump does more harm than good if it goes on working.

Cultivate the habit of reticence. So you will get a reputation for knowing more than you do and when you do talk you will be listened to. When in doubt, don't say it.

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Cultivator Order Blank

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Enjoying the balmy air of the South or the cool and bracing air of the North.

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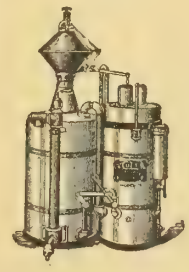
Hague Domestic Oil Burner Co.

214 Winston St., Los Angeles, Cal.

Light and Cook with Colt Acetylene



Favor us with an inquiry concerning Colt Acetylene. We shall take pleasure in sending you free of charge our excellently compiled 44-Page Catalogue containing complete and instructive matter regarding piping, fixtures, stoves and burner pertaining to this wonderful and inexpensive lighting system.

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For $7.98 we will send you the following: one Fancy Worsted Blue or Black Thibet Suit of Clothes (state color), one Merino Suit of Underwear, one pair of Best Socks, one Fancy Sunday Shirt, one collar, one beautiful tie, one strong pair of Suspenders, one pair of Donga $5.00 shoes. **Send no money.** We will ship you all of these goods to your city with the privilege of seeing them before paying one cent, and if not found in every way as represented and what your home dealer would charge $20.70, return them to us and we will pay all charges.

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One Fancy Worsted or Thibet Suit of Clothes, state color wanted....	$12.00	$5.68
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Good Pair of Socks.....	.35	.07
Good Sunday Shirt.....	1.00	.50
Best Collar.....	.15	.04
Beautiful Tie.....	.35	.12
Strong Pair of Suspenders.....	.35	.14
Pair of Donga $5.00 Shoes.....	$5.00	.94
	$20.70	$7.98

Freight paid if full amount of cash is sent with the order to any city in the United States. We have 1,000,000 of the above bargain lots which we are absolutely positive will not last more than 30 days; **Order today.**
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DEERING MERCANTILE CO., 60 Wabash Ave., Chicago

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can have a private **Billiard Room.**

No special room, or much money required for my Portable Billiard and Pool Tables, and yet all the enjoyment of a Table that weighs a ton and costs a Fortune. Catalogue?

C. Ridderhof, Laughlin Bldg., Los Angeles

San Jose scale is making fearful ravages in apple and other orchards of Colorado.

The Produce Markets

Los Angeles Markets

LOS ANGELES, Jan. 13 1909.

Butter.

Butter is partially stationary as to quotations and is very firm at present. No indications of immediate change.

Produce Exchange wholesale quotations are as follows with actual selling price to the trade 12½c advance on Extras.

Creamery ex per roll 67½
Firsts 62½
Eastern extra per roll 65
Ladles .....24@25
Cooking .....21@22
"Butterine" .....16@20

Cheese.

Southern California Anchor ...17@19
Northern fresh .....15¼@16¼
Longhorn 19
Eastern singles 16
Cheddars 17
Swiss 17½
Imported Swiss .....28@30
Daisy 18
Oregon 16½
Limburger .....17½@18½
Twin 17

Eggs and Poultry.

The egg market has been very interesting for the past few days. The supply is exceedingly scarce and the storage supply is practically exhausted. On Monday a car of eggs was received from the Middle West by express. This was Los Angeles' first importation of a full car by express. The express charge was $700 and yet in the scarcity was justified. It is predicted prices will increase still more.

Eggs local candled .....41@44
Eggs case count buying price.....39
Storage selected .....36@38
Eastern storage short time ....38@40

Dealers pay for live stock.

Hens per pound .....14@15
Young roosters per pound 16
Fryers 17
Broilers per lb 21
Roasters .....15@16
Old roosters 7
Turkeys .....16@20
Geese .....12@13
Ducks .....12@13
Squabs .....1.25@1.75

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs from 175 to 200 pounds.....6¼
Prime steers 4¾
Heifers .....3¾@4
Calves per pound .....4½@5
Sheep ewes per head .....3.25@3.75
Lambs per head .....2.50@3.00
Wethers .....4.00@4.50

Potatoes.

Wholesale prices are:

Sweets per ctl .....1.50@1.75
Sweets choice 1.25
Early Rose local.....1.70
White Rose 1.70
White Rose northern 1.80
Highland fancy .....1.40@1.70
Coast 1.65
Salinas 1.65
Oregons .....1.45@1.70

Onions.

Wholesale quotations:

Australian Browns .....1.75@2.00
Globes 1.50
Garlic 12½

Vegetables.

Artichokes per doz Northern.....1.35
Beets per doz 40
Bell peppers per lb.....15@20
Beans string .....12@15
Beans Limas per lb .....10@12
Brussels sprouts per lb 10
Cabbage Red per lb.....3@3½
Cabbage sack .....1.25@1.40
Celery per crate 3.00
Chili per lb .....6@10
Chili dried .....9@12
Chicory per doz 40
Cucumbers per doz hot house 50@1.75
Cauliflower per crate 50
Carrots per doz .....30@40
Egg plant per lb .....10@12
Green onions per doz bunches 10@20
Horseradish per lb 12
Lettuce per crate .....75@1.00
Lettuce choice 75
Mushrooms per lb 35
Peas sugar per lb .....6@8
Parsley .....20@40
Parsnips .....35@40
Rutabaga per doz 40
Rhubarb .....75@1.00
Radishes per doz .....15@20
Salsify 40
Summer squash per box 60
Spinach per doz .....10@20
Turnips doz bunches .....25@30
Tomatoes lug box .....50@1.00

Citrus Fruits.

Navels fy .....2.00@2.50
Tangerines 1.75
Grapefruit seedless 3.50
Grapefruit seedlings .....2.00@2.50
Lemons fy 2.50
Lemons choice .....1.25@1.50
Limes per basket 50

Fresh Fruits.

Wholesale prices on the market are:

Baldwins 4 tier .....1.85@2.00
Bellflowers .....1.15@1.20
Newton Pippins .....1.10@1.50
Fall Pippins 1.50
Alexandria 4-tier .....1.00@1.10
Colorado Jonathans 2.50
Red Pearmains 1.00
Spitzenberg 2.25
Muscats per lug box 90
Grapes Red Emperors 1.50
Cornichons 1.50
Pears lug box 1.50
Persimmons per box .....6@8
Pomegranates per box 1.75
Strawberries per box .....10@12

Dried Fruits.

Wholesale prices are:

Apricots 9
Evap. apples fy per lb.....6½@7
Figs loose white 5
Figs blk 5
Peaches in boxes 7½
Peaches sacks 5½
Pears 9
Nectarines .....9@10
Prunes 30's to 40's boxed.....8½
Prunes 40's to 50's.....7½
Prunes 50's to 60's.....7

Beans Dried.

Wholesale prices are:

Limas per ctl 4.50
Pink No 1.....3.00
Lady Washington 4.25
Small white 5.00
Black eyes 3.50
Garvanzas .....3.55@3.70
Lentils .....7.00@8.00
Bayou 3.50

Nuts.

Almonds IXL per lb.....14½
Almonds choice 11
Pecans polished .....16@17
Peanuts Virginia 6½
Peanuts California .....5@5½
Walnuts No 1.....12
Chestnuts .....8@8½

Honey.

Wholesale quotations:

Extracted water white 7½
Extracted Light Amber 7
Comb W W 15
Comb white 15
Beeswax 30

Hay.

Prices paid to producers f. o. b. Los Angeles are as follows:

Barley No 1 .....17.00@19.00
Barley No 2 .....15.00@17.00
Alfalfa northern per ton ..14.00@15.00
Alfalfa local .....15.00@17.00
Tame oat No 1 .....18.00@20.00
Wheat No 1 .....16.00@18.00
Wheat No 2 .....14.00@16.00

Grains.

Wholesale selling price f. o. b., Los Angeles.

Wheat new per ctl 1.90
Kaffir corn 1.80
Corn Eastern sacked 1.80
White oats 1.85
Seed Rye 1.25

Feed Stuff.

Wholesale selling price f. o. b., Los Angeles:

Cracked corn 1.85
Shorts 1.80
Bran 1.65
Oil cake meal 2.50
Feed meal 1.90
Rolled barley 1.65

San Francisco Markets

SAN FRANCISCO, Jan. 12, 1909.

Butter.

Butter took a decided fall immediately after last quotations dropping to 33, the next day recovering to 34, later dropping to 33½ where it now stands. The market is featureless with much stock going begging.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras per lb 33½
California firsts 33
California seconds 27
Ladles extra 23
Storage Cal ex 30½

Cheese.

California young American fy.....16
Firsts 15½
California flats fy 14
Firsts 13½
Seconds 11½
Young American Oregon fy 16
Eastern N. Y. Cheddars fy 17
Eastern fy 16½
Oregan flat fy 14

Eggs and Poultry.

Eggs have advanced very satisfactorily during the week. At present they show a fairly easy tone but sales continue large. Quotations are now two cents higher than last week.

Official quotations of the S. F. Wholesale Dairy & Produce Ex. are:

Fresh ranch extras 45
Eggs first per doz 44½
Eggs second 40
Pullets selected 41
Eastern Storage ex 36
Eastern firsts 33
Eastern seconds 29
Hens per doz .....4.00@6.00
Hens extra .....7.00@9.00
Young roosters .....6.00@7.00
Old roosters .....4.00@4.50
Fryers per doz .....5.00@6.00
Broilers per doz .....4.00@5.00
Geese per pair .....2.00@2.50
Goslings per pair .....1.75@2.00
Ducks young .....6.00@8.00
Live Turkeys .....20@25
Dressed Turkeys .....27@30
Pigeons young .....2.00@2.50

Live Stock.

San Francisco prices gross weight:

Steers No. 1 .....4¼@4½
Do second quality 4
No 1 cows and heifers .....3¼@3½
Second quality 3
Hogs 100 to 130 .....5¾
Hogs 130 to 250 .....6@6¼
Rough heavy .....4½@5
Calves per lb .....4@5
Lambs spring 5
Wethers No 1 .....4¼@4½
Ewes No 1 .....3¾@4

Potatoes.

A strong speculative inquiry is ruling in the potato market, which is entirely of a local character. Stocks in the country have turned out to be not as large as was thought and the drain on them for shipping purposes has caused a decidedly uneasy feeling in the local market, which has caused quotations to improve sharply.

Wholesale market quotations:

River white fy sacks.....85@1.00
Salinas Burbanks .....1.25@1.50
Sweets per crate .....1.00@1.25
Sweets sacks .....75@1.00
Oregon Burbank .....1.15@1.35
Early Rose seed .....1.25@1.30

Vegetables.

Wholesale quotations:

Bell peppers per lb .....17½@20
Brussels Sprouts 46
Celery per doz .....60@65
Celery per crate .....1.25@1.35
Cucumbers per doz .....1.00@1.25
Chili peppers per lb .....5@7
Egg plant per lb .....12½@15
Green peas per lb .....5@7
Mushrooms per box .....1.00@1.25
Marrowfat squash per ton 10.00@15.00
Squash per box Southern ...1.00@1.50
Onions green per box .....70@75
Okra per box .....1.25@1.50
Rhubarb per lb .....4@6
Tomatoes box Los Angeles ..1.25@1.50
String beans .....12½@15
Wax Beans .....10@12½
Garlic new .....6½@8

Onions.

Oregons .....1.35@1.50
California's .....1.00@1.25

Citrus Fruits.

New Navels fy & large sizes 2.00@2.50
Tangerines crates .....75@1.25
Mandarins .....1.25@1.60
Grapefruit seedless .....2.50@3.50
Grapefruit seedlings .....75@1.25
Lemons ch .....2.00@2.50
Lemons fy .....2.50@3.25
Limes .....4.00@5.00

Fresh Fruits.

Bellflowers .....85@1.00
Bellflowers No 2 .....50@65
Spitzenberg .....1.25@2.00
Newton Pippins .....85@1.15
Ben Davis .....1.25@1.50
Nectarines white .....50@60
Winter Nellis .....75@1.25
Persimmons .....75@1.00

Dried Fruits.

Prunes 4-size basis .....3@3¼
Santa Clara .....3¼@3¾
½c premium for larger sizes
Apricots per lb; Choice 8½; fancy 9@10.
PEACHES—Choice 5; fancy 6@6½
Apples Evap .....5¾@7
Pears .....5½@8

RAISINS—1908 crop, f. o. b.: Clusters and Layers, 20-lb bxs—Imperial Clusters, 6-crown, $2; Dehesa Clusters, 5-crown, $1.75; Fancy Clusters, 4-crown, $1.40; London Layers, 3-crown, $1.15; do, 2-crown, $1.05. Seeded, 25-lb bxs—Fancy bulk per lb, 5¼c; Choice bulk, 5c. Loose Muscatels, 50-lb bxs—Standard, 4-crown, 4c; do, 3-crown, 3¼c; do. 2-crown, 2¾c; Seedless, 3½c. Seedless Sultanas—Unbleached, 4¼c. Thompson Seedless—Unbleached, 4¾c. Dried Grapes, 2½c.

Nuts.

Walnuts S S No 1 new crop 9½
Walnuts No 2 6
No 1 Standard 8½
No 2 Standard .....4½@5
Almonds Nonp 11½
Almonds IXL .....10½@11
Ne Plus Ultra 9½
Drakes .....8½@9
Chestnuts, Cal .....9½@14

Beans Dried.

Limas .....4.15@4.25
Pink .....2.50@2.55
Small white .....4.60@4.65
Large white .....3.80@3.85
Black eyes .....3.10@3.20
Red Kidneys .....3.75@4.00

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

Garvanzas .....2.75@3.00
Bayo .....3.15@3.25
Horse beans .....1.75@2.25

Hops.

Hops new crop .....5@8

Honey.

White comb .....15½@16
Light Amber .....9@10
Extracted W W .....7@8
Extracted light amber .....5½@6
Beeswax No 1 per lb .....28@30
Beeswax No 2 per lb .....23@25

Hay.

Somers & Co. say:

We are inclined to believe that prices will remain firm and possibly higher for some time to come as we are still having a heavy country demand and furthermore the possibility of bringing Hay from outside States seems more remote than ever for Hay in these States seems to have advanced just enough to prevent us from making shipments to California.

As is well known California is bebecoming a great consumer of Hay; many districts which formerly raised Hay extensively now raise but little and although in normal years they raise enough for their own use, yet this year owing to our short crop they are importing Feed. Several districts which were thought to have sufficient Hay for their own use are now beginning to inquire for Hay and state that they must soon make purchases.

All indications therefore are for a firm Hay situation, although a plentiful crop of grass will possibly change conditions considerably. As yet weather conditions have not been favorable for growing grass and therefore this element cannot be considered a definite factor.

Alfalfa is also higher, heavy demands being made on stocks by the dairymen who must feed until plenty of grass is available.

The present range of prices we quote as follows:

Choice wheat hay .....21.00@23.00
Good wheat hay .....19.00@20.50
Other grades same .....17.00@18.00
Wheat and oat .....16.00@21.00
Tame oat .....16.00@20.00
Wild oat .....15.00@18.50
Stock hay .....12.00@14.00
Alfalfa .....14.50@18.50
Straw per bale .....60@95

Grains.

Wheat No 1 .....1.67½@1.70
Barley .....1.42½@1.45
Corn large yellow .....1.80@1.85
Oats white .....1.67½@1.75
Oats gray .....1.65@1.72½
Rye new crop .....1.45@1.50

Feed Stuff.

Bran per ton .....29.00@31.00
Feed cornmeal per ton ..37.00@38.00
Cracked corn per ton .....38.00@39.00
Rolled barley per ton ....30.00@31.00
Oil cake meal per ton ....38.00@39.50
Cocoanut cake per ton ....25.50@26.50
Middlings .....33.50@36.00

Citrus Market

LOS ANGELES, Jan. 13, 1909.

The orange market is somewhat uncertain and rather unsatisfactory. The present rain may slow up shipments and aid in correcting the oversupply. In any case the shipments are not as heavy as earlier. Some low grade fruit has been shipped which meets cold weather in the East is one cause of the decline.

Lemons are rather easier. It was thought at first that importations would materially shrink owing to the Messina disaster, but it is now stated that it will have only slight effect. Present shipments are commanding fair prices.

Shipments.

Shipments of oranges since Nov. 1, 1908 aggregate 2,486 cars of oranges and 758 lemons.

NEW YORK, Jan. 8.—Two cars navels sold. The market is very firm. Weather clear and cold. Another cold wave predicted—also snow.

NAVELS—	Average.
Giant Palm	2.40
Vista	2.15

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PHILADELPHIA, Jan. 8.—Three cars navels and two cars lemons sold. Weather cold. Market strong. Six cars navels on track. Ten cars Florida oranges sold $1.70 to $2.50, average $2.10. Market is stronger.

NAVELS—	Average.
Independent or run Growers' F..	2.66
Orchid fy Altland Ft Co.	2.36
Buscada Altland Ft Co	2.31
Sutter Fair Oaks F Co Fair Oaks..	2.34
San Juan do	2.32
Standard do	2.19
LEMONS—	Average.
Tulare TCC Ft Ex Lemon Cove....	2.75
Rialto Girl fy Growers' Ft Co....	3.16

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CLEVELAND, Jan. 8.—Weather cold. Market is firm on good stock. Two cars sold. Eight cars on track. One car Florida oranges sold, prices ranging from $1.50 to $2.25, averaging $1.90. Market is higher on Floridas.

NAVELS—	Average.
Royal Knight RH Ft Ex Redlands	2.55
Newsboy do	2.05
Conqueror Independent Ft Co.	1.55

BOSTON, Jan. 8.—Twelve cars sold. It is snowing. Market is easier. Six cars on track.

NAVELS—	Average.
Poppy ex fy Haight Bethel Co	2.70
Corona Queen ex ch Spence Fr Co	2.30
Golden Scepter or run Rialto O Co	2.25
Sunny Slope fy Randolph Fr Co	1.90
Independent fy Growers' Ft Co	1.85
Artillery ex ch Cal Citrus Union	1.80
Whittier Semi-Tropic Ft Ex Whit	2.30
Gold Buckle R-H Ft Ex E Highl	2.90

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PITTSBURG, Jan. 8.—Two cars sold and three on track. Market is steady on navels. Two cars Florida oranges sold. Market unchanged. Floridas averaged $1.95. Weather cold.

NAVELS—	Average.
Orchid fy Altland Ft Co	2.20
Buscada do	2.10
Iris Duarte-Monrovia Ft Ex Mon	2.80
Violet do	2.50

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CINCINNATI, Jan. 8.—Five cars sold. Weather cold. Market is steady. Florida Brights, $1.85 to $2.10; Russets, $1.85 to $2.25. There are two cars on track.

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NEW YORK, Jan. 11.—Fifteen cars navels, two cars Arizona navels and five cars lemons sold. Lemons were active, slightly higher. Navels strong. Weather clear and mild.

NAVELS—	Average.
Sentinel TCC Ft Ex Lindsay	$2.65
Sphynx do	2.35
Royal Knight RH Ft Ex Redlands	2.70
Gold Buckle do	2.70
Pocahontas TCC Ft Ex Zante	2.45
Hiawatha do	2.35
Jameson Corona QC Ft Ex	2.80
Justrite do	2.65
Jameson Imperial QC Ft Ex	2.50
Iris DM Ft Ex Monrovia	2.80
Violet do	2.65
Golden Orange (halvs) AHF E Pda	1.75
Golden Orange AH Ft Ex Prenda	3.00
Solano Stewart Ft Co	2.25
LEMONS—	Average
Rescue Stewart Ft Co	2.15
Niagara Small do	2.30
Homer QC Ft Ex Corona	3.20
Arab SA Ft Ex San Dimas	2.95
Duck do	2.70

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PHILADELPHIA, Jan. 11.—Six cars navels and one car lemons sold. The market is steady. Weather warmer. Nineteen cars Florida oranges sold from $1.60 to $2.40, average $2.00. The market is easier on Floridas.

NAVELS—	Average.
Sphynx TCC Ft Ex Lindsay	$2.34
State do	2.40
Red Label do	2.48
Full Value do	2.31
Independent Growers' Ft Co	2.65
Cobbler R H Shoemaker, Jr	2.28
Defender Altland Ft Co	2.18
Gobbler Stewart Ft Co	2.17
LEMONS—	Average
Las Fuentes Crocker-Sperry Sum	$2.89
Montecito do	1.27

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ST. LOUIS, Jan. 11.—Weather colder, snowing. The market is strong on navels. Three cars sold, eight on track.

NAVELS—	Average.
Braeside, Riv Ft Ex Riverside	1.80
Royal Knight RH Ft Ex Redlds	2.60
Ben Hur do	2.50
Newsboy do	2.15
Redlands Oranges RH Ft Ex Red	2.15
Lochinvar HH Ft Ex E Highlds	2.50
Belt RH Ft Ex E Highlands	2.25

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CLEVELAND, Jan. 11.—Four cars sold, seven cars on track. The market is strong on navels. Weather cold.

NAVELS—	Average.
Fiesta Riv Ft Ex Pachappa Sta	2.25
Pond Lily do	2.10
Cluster SA Ft Ex Pomona	2.20
Chariot RH Ft Ex Redlands Jct	2.50
Gold Leaf do	2.65
Anona do	2.35
Gold Buckle RH Ft Ex E High	2.70
Lochinvar do	2.65

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PITTSBURG, Jan. 11.—Six cars sold, three on track. Market is easier. Prices are low on navels on account of the quality of the stock offered. Five cars Florida oranges sold, average $1.85 per box. The market is easier on Floridas.

NAVELS—	Average.
Cobbler R H Shoemaker Jr	2.15
A-One E Peycke Co	2.30
Deal do	2.35
Sutter Fairoaks Ft Co Fairoaks	2.00
Standard do	1.80
Casa Blanca AH Ft Ex Casa B	1.95
Palm Tree do	2.00
Casa Blanca Imp Ft Ex Casa B	2.00
Cal Orange Riv Ft Ex Riverside	1.40
Yellow Beauties Asso Ft Ex High	1.70

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BOSTON, Jan. 11.—Fifteen cars sold, seven on track. The market is unchanged. Weather favorable.

NAVELS—	Average.
State TCC Ft Ex Lindsay	2.00
Forgetmenot TCC Ft Ex Porter	2.75
Royal Knight RH Ft Ex Redlds	2.55
Gold Buckle RH Ft Ex E Highld	2.80
Gold Buckle do	2.85
Lochinvar do	2.70
Magnolia Worthley & Strong	2.60
Cal Beauty	2.45
Aurora E Peycke Co	2.50
"H. M." Cal Citrus Union	2.40
Old America	2.35
Premium Benchley Ft Co	2.30
Good do	2.15
W Highland Cleghorn Bros	2.40
W Highland do	2.15
Gobbler Stewart Ft Co	2.30
Orchid Altland Ft Co	2.15
Aurora E Peycke Co	2.65

LEMONS—	Average
Protection Ohio Lemon Co	3.55
Club House	2.60
Gold Finch SS Ft Ex El Modena	2.65

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CINCINNATI, Jan. 11.—Weather cold. Market is steady. One car navels, two cars lemons sold. Five cars Florida oranges sold. Brights, $1.80 to $2.20; Russets, $1.90 to $2.20.

NAVELS—	Average.
Cluster SA Ft Ex Pomona	2.05
Stock Label	1.45
LEMONS—	Average
Cry Baby Flagler Ft Co	2.30
Montecello Sweet Wtr Ft Co Bonita	2.45

THE PLACE OF THE TELEPHONE IN MODERN FARMING.

The wheels of the business world are revolving faster every day. Human ingenuity is constantly seeking new devices to save that most valuable asset of modern business—time. One after another, new inventions are being brought into use in an attempt to increase the speed of these wheels to the utmost.

Of all such time saving inventions the greatest is undoubtedly the telephone. Introduced only about thirty years ago it is under present condi-

tions an absolute necessity as a means of communication. This necessity has spread from the large city to the small city, from the small city to the town, and is now making itself felt in the rural districts. The modern farmer does not regard his telephone as a luxury but recognizes its value as a financial asset. He realizes the necessity of keeping in close touch with trade conditions. With the aid of the telephone he can buy his supplies when the market is low and sell his crops when it is high.

That farmers all over the country are having their farms connected by telephone is the best possible proof of its value and that it has come to stay. The farmer, as a class, is the hardest person in the world to be persuaded to adopt an uncertain proposition in spite of the proverbial "gold brick" stories which are credited to him. His decisions are the result of careful thought and due deliberations. But once convinced he is not slow to action.

In selecting equipment for a telephone system it is well to keep the following in mind. The telephone is a very delicate organization and must be perfectly made in order to give good service. Buy a cheap make and the cost of maintenance will be high. Continued repairs will be in order and the service will be poor. Therefore, nothing but the best is the cheapest in purchasing a telephone equipment.

Western Electric telephones have become so widely known and have given such splendid service that they are considered standard in the telephone field. It will pay you to read the Western Electric Company's advertisement on another page of this issue.

A raisin grower of Hanford has suggested that the entire raisin crop be screened at the packing houses and all small raisins be disposed of in California for hog feed if necessary and only the larger and better stock shipped to eastern markets. He maintains that the extra price received for the better goods would compensate for the loss of the poor stock.

A resident of Lindsay reported that while in Montreal he saw California oranges selling at nearly three times the price of Floridas.

For Mehring Foot-Power Milking Machines see O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles, Cal.

Classified Liner Columns

Rates 1½ cents per word per issue. No ad. accepted for less than 25 cents. Our classified columns are the clearing house for the readers of the Cultivator. Here you can insert an ad. for the small sum of 1½ cents per word per issue, and be sure that it will be read by thousands.

FARM LANDS FOR SALE.

FIFTEEN ACRES IN KINGS COUNTY, sandy loam, good house, water, trees and vines; ¼ mile from town. Drop me a card. G. C. O. Box 175, Lemoore, Cal.

I make a specialty of orange and alfalfa ranches, and exchanges. 826 MAIN St., ROOM 9, Riverside, Cal., N. R. BELL.

POULTRY

FOR SALE — WHITE WYANDOTTES, Hayes "Bred to Lay" strain. Eggs for setting, $1.50 and $2 per 15, $6 to $8 per 100. Hens, $1.50 to $3; cocks, $3 to $5; trios, $6 to $10. Discount of 25 per cent on hens and pullets in lots of 50 or more. Write for particulars. F. E. JUDSON, Carson Heights Ranch, San Pasqual Valley, Escondido, Cal.

BUFF ORPINGTONS—BLOOD AND BREEDing tells. Five years careful selection for points and laying; results, first prize pullets last year and 50 per cent egg yield during moulting season this year. Eggs, $1.00, $1.50 and $2.00. Special prices on incubator lots. E. G. WALL, 1920 Monticello Ave., Hollywood, Cal. Phone Hollywood 1943.

SINGLE-COMB BROWN LEGHORNS—EGGS $1.50 and $2.50 per setting, $5 and $7 per 100; cockerels, $2 and up from Bright hens. MRS. C. H. VARY, Pomona, Cal.

CAMPINES, GREAT LAYERS, BEAUTIFUL fowls, splendid foragers. Recently imported from Belgium. Eggs for hatching $3.50 and $5.00 per doz. E. SMITH, 3610 East First St., Los Angeles, Cal.

CHAS. E. SMITH—BREEDER OF BARRED Rocks exclusively. Winners of the blue wherever shown. Eggs $3.00 per 15, stock for sale. GARDENA, Cal.

RHODE ISLAND RED EGGS FOR HATCHing. Fertility guaranteed. $2.00 for thirteen, $7.00 per hundred. SCOTT WILSON, Altadena, Cal.

BLACK BEAUTY POULTRY YARDS—SOME of the best S. C. Black Minorcas on the Coast. Chicks, $12 per 100; eggs from selected matings, $1.50 per 15, $6 per 100. MRS. A. F. FRESE, box 456, Dixon, Cal.

X-RAY RANCH — HOME OF LARGE EGG strain White Leghorns. Eggs for hatching by the setting; 100 or 1000. Chicks hatched to order. Prices on application. X-RAY RANCH, Santa Rosa, Cal.

A FEW CHOICE SINGLE COMB WHITE Leghorn cockerels for sale at X-RAY RANCH, Santa Rosa, Cal.

FOR SALE—DAY OLD WHITE LEGHORN baby chicks, $10 per 100; other varieties at usual prices. Will hatch your eggs for $4 per 100. Call or write J. L. TUMMOND, Buena Park, Cal.

INCUBATOR AND PAIR OF GEESE; ONE 460-egg standard Cyphers incubator, good as new, $20. One pair thoroughbred Toulouse geese. EUGENE PEETERS, San Gabriel, Cal.

PRIZE - WINNING WHITE MINORCAS. Eggs for setting, $2 for 15; $3 for 30; $6 per hundred, f.o.b. express. C. S. LANE, Santa Barbara, Cal.

O. L. CRANE, BREEDER OF PIT AND Cornish Indian Games. Rural No. 3, Santa Rosa, Cal.

BABY CHICKS BY THE HUNDREDS OR thousands, all varieties. Write J. STANSFIELD, 3301 E. 14th st., Fruitvale, Cal.

GRAPE CUTTINGS.

CHOICE GRAPE ROOTS AND CUTTINGS. Thompson Seedless, Flame Tokay, Cornichon, Muscat and Red Emperor. Cuttings, price per 100, 50 cents; per 1000, $3.50. Price for rooted vines, Thompson Seedless, Flame Tokay, Cornichon, Red Emperor, Rose Peru, $3.00 per 100 and $20.00 per 1000. J. C. SMITH, Burbank, Cal.

FOR SALE—THOMPSON SEEDLESS AND Zinfandel rooted grape vines—first class—$10.00 per thousand. GRIDLEY COLONY NURSERY, Gridley, Cal.

I HAVE ABOUT 25,000 ZINFANDEL VINES left. Must sell before February 15th. Address HUGO ZENTNER, Capay, Cal.

FOR SALE—TABLE GRAPE CUTTINGS, Muscatel, $3 per thousand; Cornichon, $4 per thousand; Red Emperor, $4 per thousand. E. DONDANVILLE, San Gabriel, Cal.

FOR SALE—MALAGA ROOTED VINES, ONE year old; also cuttings from Malaga, Muscat, Sultana and Cornichon vines. C. F. GEORGE, Etiwanda, Cal.

BERRY PLANTS.

FOR SALE—MILLIONS OF STRAWBERRY plants, all the standard varieties; many varieties blackberry, raspberry, Logan, Himalaya, Mammoth, dewberries and fruit trees. Special prices. Muscat and Flaming Tokay cuttings (disinfected,) $3 per thousand. Write us your wants. TRIBBLE BROS., Elk Grove, Cal.

FOR SALE — BERRY PLANTS; LOGANS, Giant Himalaya, Mammoth and Lucretia dewberries. Would exchange for rooted Tokay. A. P. HENNING, box 225, Cottonwood, Shasta Co., Cal.

FOR SALE—LOGAN, MAMMOTH, PHENOMenal, Himalaya, Blackberry, Dewberry; strong plants, $10.00 per thousand. Strawberries, $3.00 per thousand. GRIDLEY COLONY NURSERY, Gridley, Cal.

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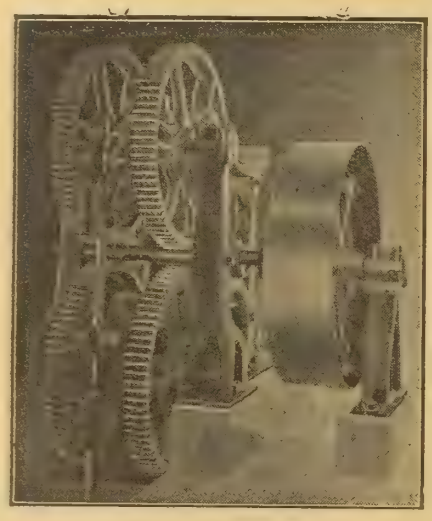

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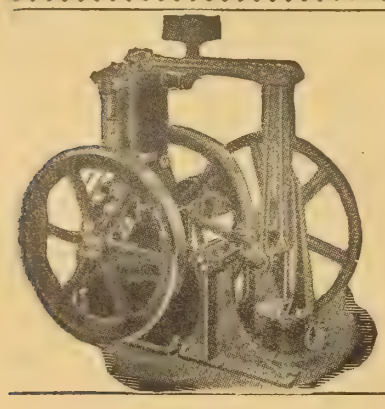

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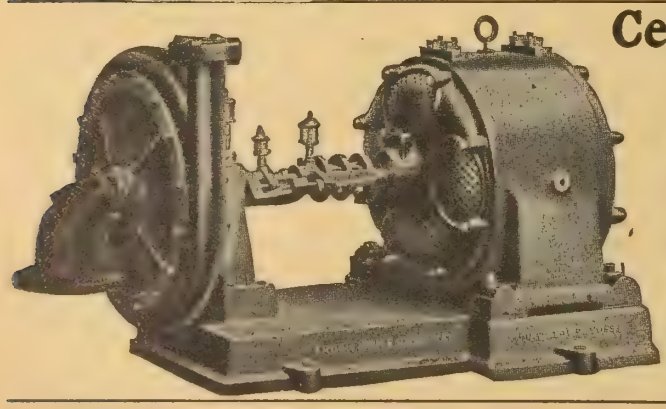

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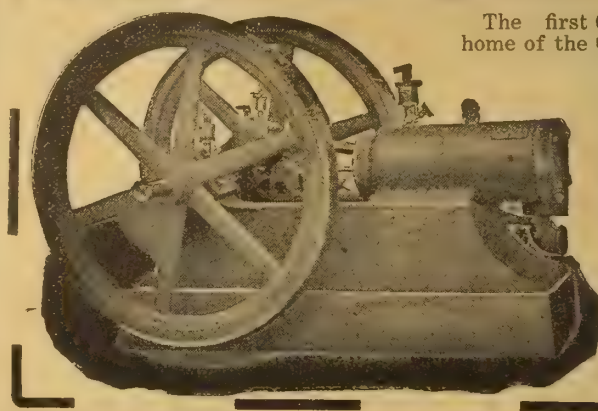

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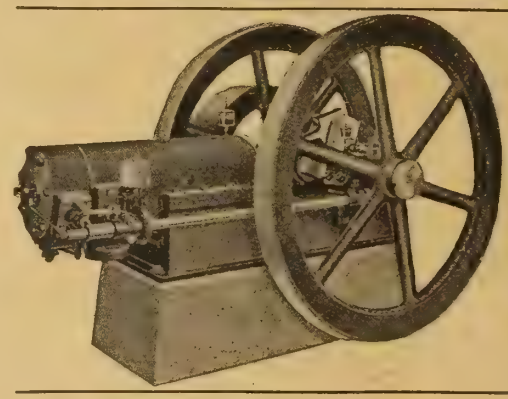

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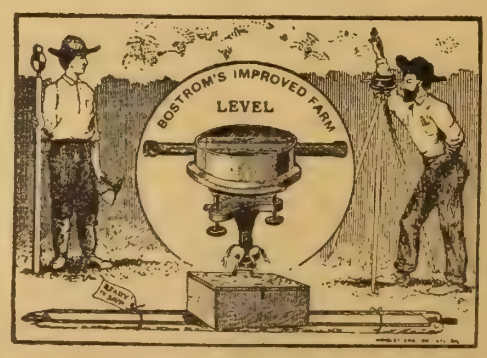

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Published Weekly — One Dollar a Year

Los Angeles — January 21, 1909 — San Francisco

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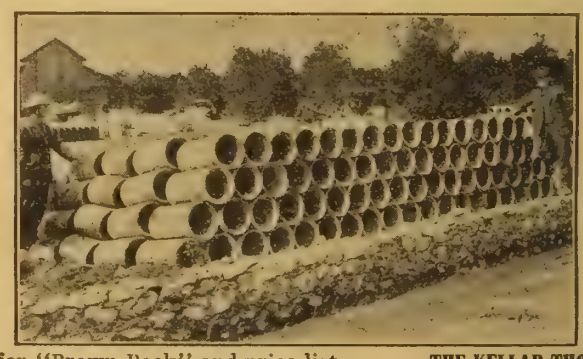

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California Cultivator

Vol. XXXII—No. 3 Los Angeles, California, Thursday, January 21, 1909 Subscription $1 a Year

The Effect of Various Limes on Soils

An Article Written for Cultivator Readers

By PROF. E. W. HILGARD of the State University

IN response to your request for information regarding the effects of lime on soils, and the differences to be expected between the use of sugar factory lime and other lime products, I can briefly summarize the matter as follows:

There are very few soils in California that require the addition of lime; the average content being over ten times greater in California soils than in Eastern ones, which are improved so much by liming. The improvement in soil conditions caused by liming are partly mechanical, by facilitating tillage and penetration of air and water, and partly chemical, in that it neutralizes any acid soil conditions and promotes the growth of bacteria in general, and those of the legumes in particular; whence the very abundant natural growth of legumes in California. It may be said that in valley soils lime will usually in California produce very little effect, except that heavy clay or black adobe may become more tillable.

This general statement holds true of all the various lime fertilizers, including marl but not gypsum. Quicklime acts most quickly on the soil, but is apt to produce a waste of humus unless accompanied by a green manure crop. It is not desirable to use it on light soils at all.

Air-slaked lime is very much milder in its action than quicklime; only half of it being in the form of effective lime, the rest being in the same form as marl; that is, carbonate or limestone. It acts more slowly than quicklime, and is less apt to be overdone.

As for sugar factory lime, it is altogether in a carbonate form; that is, it is the same as finely ground limestone or marl, but it contains in addition some of the ingredients of the beet—to wit: about two per cent or a little more of phosphoric acid, and perhaps half of one per cent of nitrogen when it is fresh. When old, a large proportion of the nitrogen has disappeared into the air; though some of it remains in the form of nitrate of lime. The total value of these ingredients on the usual commercial basis is from $2.25 to $2.50 a ton; the very fine state of division of the lime in this material renders it quite effective where lime is needed in the soil.

As to hydrated lime; it is merely lime "dry-slaked"; that is, with only about half its weight of water, of which one-half will evaporate in the slaking, so that the dry-slaked lime consists to the extent of one-fourth, of water. As it is perfectly easy for any one to dry-slake lime at home, it hardly seems necessary to pay for having it done outside and pay transportation on one-fourth its weight of water. The effect, however, is the same as that of quicklime.

Now as to gypsum; in California it has some additional usefulness to that which it possesses elsewhere; namely: the neutralization of black alkali wherever that happens to be present. It has no effect whatever upon white alkali. It has a special action in favoring the growth of legumes, such as alfalfa, beans and vetches, because of its being particularly favorable to the growth of bacteria; being, in fact, recognized as the most active substance in that respect. Moreover, it acts in setting free, or making available, potash from silicates of the soil. For a time, therefore, a dressing of gypsum may take the place of a dressing of potash, but of course its effect in that direction will soon be exhausted. Gypsum is a very undesirable addition to our sour soils, as it increases their sourness and should never be used on swamp lands.

This is about as much as can briefly be said in answer to the queries proposed by your correspondents. If they should desire to go more into details, it may be well to look up what is said on the subject of the effects of lime in my book on "Soils," 379-380.—E. W. Hilgard.

* * *

The book "Soils" written by Prof. Hilgard is one of the most complete and exhaustive works of its kind, and should be on the shelf of every farmer and orchardist in California. It is a large book of nearly 600 pages and almost every phase of soil condition, mechanical or chemical is explained.

The paragraphs referred to by the Professor summarize the effects of lime carbonate on soils, its advantages and possible disadvantages as follows:

"Physically, even a small amount of lime carbonate, by its solubility in the carbonated soil-water, will act most beneficially in causing the flocculation of clay and in the subsequent conservation of the flocculent or tilth condition, by acting as a light cement holding the soil-crumbs together when the capillary water has evaporated; thus favoring the penetration of both water and air, and of the roots themselves. It should be added that according to the experience of the writer, amounts of lime carbonate in excess of 2 per cent do not add to the favorable effects except as would so much sand.

"As to chemical effects, among the most important are:

1. The maintenance of the neutrality of the soil, by the neutralization of acids formed by the decay of organic matter, or otherwise.

2. The maintenance, in connection with the proper degrees of moisture and warmth, of the conditions of abundant bacterial life; more especially those of nitrification, thus supplying the readily assimilable form of nitrogen. Also in favoring the development and activity of the root bacteria of legumes, and of the other nitrogen gathering bacteria.

3. The rendering available, directly or indirectly, of relatively small percentages of plant-food, notably phosphoric acid and potash.

4. The prompt conversion of vegetable matter into black, neutral humus, and (as shown in the case of the soils of the arid region) the concentration of nitrogen in the same while accelerating the oxidation of the carbon and hydrogen.

5. It counteracts the deleterious influence of an excess of magnesia in the soil.

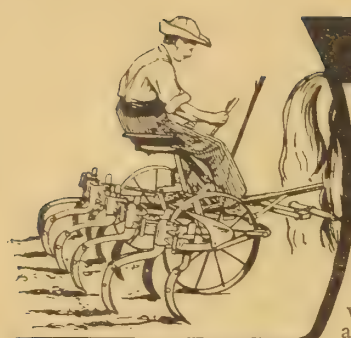
6. In alkali soils, it counteracts the injurious action of the soluble salts upon the growth of plants, not only in the form of carbonate, but also in those of sulphate and chloride.

7. As a matter of experience, both in the case of grapes and orchard as well as wild fruits, an adequate but not excessive supply of lime in the soil will produce sweeter fruit than when lime is in small supply.

8. An excess of carbonate of lime in soils (from eight to twenty per cent and more), constituting "marliness," tends to seriously disturb the nutrition and general functions of many plants (calcifuge), and to produce a suppression or diminution of the formation of chlorophyll and starch; as in the case of grape vines, citrus fruits and others, which neverless flourish best in lands moderately calcareous.

"Among the points thus enumerated, the third and fourth require some comment. Without pretending to define exactly how lime acts in rendering other ingredients more available to plant assimilation, attention may be called to the fact that lime carbonate may be considered as acting similarly to, albeit more mildly than, caustic lime, in the displacement of other bases from their compounds. It doubtless acts thus in liberating potash from its zeolithic compounds. As to phosphoric acid, the connection of the effect of lime carbonate with the remarkable availability of that substance when present in the form of tetra-basic salt, in the case of phosphate slag, is at least possible.

California Combined Harvester at Work in San Joaquin County.



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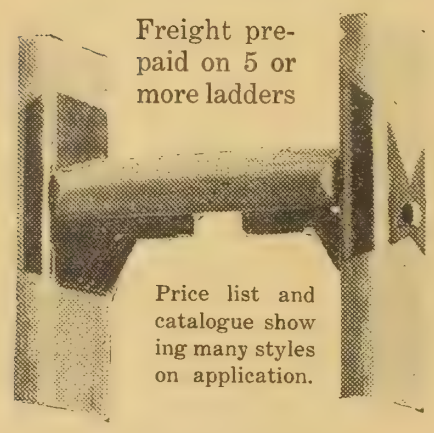

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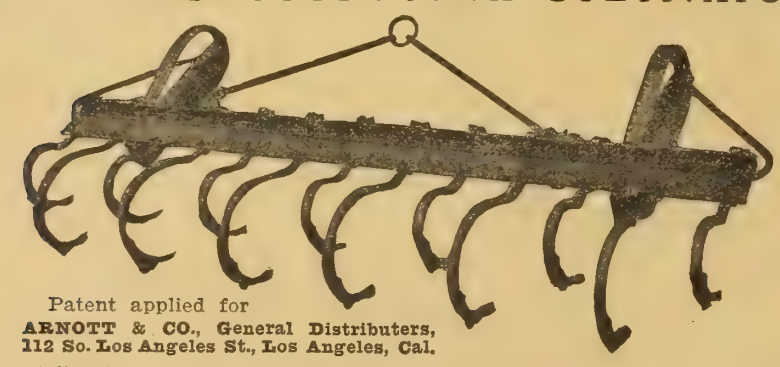

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The effects of humus on soils are both physical and chemical. Its physical effects are due in part to its remarkably porous structure which not only lightens the texture of soils, but also increases the absorptive power of soils for water and the plant food dissolved in it. Compounds formed between humus and lime, iron and some other elements have strong cementing properties and hence improve the crumb structure of soils, rendering them more friable. The chemical effects on the soil are in part those due to the slow decay of the humus and the liberation of the nitrogen, phosphorus and potassium of the original vegetable matter from which it came.

The nitrogen is especially important, and Hilgard says: "Soil humus is doubtless the chief depository of soil nitrogen and the main source from which, through process of nitrification, the nitrogen supply to plants is usually derived."

The total nitrogen in the soils of the college farm was nearly proportional to the humus and averaged one part of nitrogen to 14.8 parts humus in the clay loam and 1 to 12.8 in the clay.

There is also considerable evidence that humus can unite with some of the compounds used in fertilizing our soils. It has been shown that ammonia salts will combine with humus, the ammonia of the salts replacing lime in the humates.

Similar results have been obtained in this laboratory when potash salts were used instead of ammonia salts. The potash disappeared from solution when humus was added and lime was found instead, showing that the potash must have combined.

It is stated also that humus absorbs monocalcium phosphate, or what is commonly called superphosphate of lime.

It was also noted in our work that nitrates did not seem to leach away in the presence of humus. On three plots used for a top dressing experiment, fertilizers had been applied as follows:

a. 300 pounds per acre of complete chemical fertilizer, including nitrate of soda.

b. No manure or fertilizer,

c. 300 lbs. per acre of nitrate of soda.

The humus and total nitrogen percentages were:

a.	Humus	2.56	Nitrogen	0.18
b.	Humus	2.57	Nitrogen	0.16
c.	Humus	2.51	Nitrogen	0.20

Experiments are needed to determine whether humus can combine with nitrates as well as with ammonia salts. However, it is more likely to be the fact that by reduction, nitrates are changed to ammonia and held by the humus, as in the addition of ammonia salts.

The compounds of humus with the soluble superphosphate of lime, ammonia and potash must undergo decompositions similar to those by which the original fertility elements of the humus are made available in the soil. Thus, in the presence of humus not only are there plant elements from decaying vegetable matter, but also added fertility elements may be held in a similar condition of availability.

Without the humus, phosphates and potash salts must at length change to the insoluble compounds of those elements naturally present in the soil minerals, while nitrates are leached from the soil by the drainage water.

When these different effects of humus are considered, it can be readily seen how important it is to soils and why sandy loams are regarded as poor soils.

There is a difference of .75 per cent between the sandy loam and the clay loam in the humus, which, calculated on a basis of 3,000,000 pounds of soil per acre-foot, in eight inches would mean 15,000 lbs. of humus or 7.5 tons, requiring over 28 tons of stable manure to make it good. The manure is calculated on the basis of its containing 26 per cent of organic matter, not all of which would be humus and consequently a pound of organic matter in manure would not be equivalent to a pound of humus in the soil.

Such a difference in humus means also a difference in the moisture, nitrogen, phosphoric acid and potash associated with it, which, as has been shown, are in the most surely available forms for plants to use.

Since sandy soils are especially favorable to the destruction of humus, these available forms of plant food change to less soluble forms, or leach away, as the humus decomposes, unless taken up by the crop then on the land. Large dressings of manure, therefore, have not the lasting effect that is noted on heavier soils and the same is true of chemical fertilizers. Frequent rotations of crops are especially beneficial on these soils, since there are thus added many hundred pounds per acre of vegetable matter in the form of roots and stubble, by the decay of which humus is formed and the texture of the soil and also the chemical composition improved.—N. H. Bulletin.

SAVE THE WATER.

At a recent institute at Beaumont, J. B. Neff gave some excellent advice on conservation of water in orchard and vineyard, from which we quote:

The great question is to save the water where it will do good. By the present lack of proper irrigation at least half the available supply goes to waste.

Flowing water as measured by miners' inches, fifty miners' inches will cover one acre one inch deep in one hour if there is no waste, but variation of soil, temperature and manner of applying the water cause the waste to vary. Different vegetation requires different amounts, but as a rule it takes 100 or 200 pounds of water to produce 1 pound of dry material, and the amount equivalent to this proportion would be for hay 3 to 5 inches in depth of water during the season, while wheat must have only two to two and one-half inches. Corn needs 20, alfalfa 30 to 50 oranges 30, walnuts 25; these estimates meaning in addition to the natural rainfall.

Meadow grass contains seventy-one hundredths water lettuce 95 to 99.

Before planting an orchard especially make sure of water at any time it is needed.

After each rain loosen the soil to keep the water inside. One inch of water will saturate three inches depth of earth.

Some sandy soils will not receive more than 15 per cent. of their weight, adobe and the like will hold 30 per cent, while soil which is largely vegetable mould will receive much and yet give up to plant growth all but three per cent. Thoroughly dry sand requires six inches of water to saturate it, but an orchard must have water available or the crop is doubtful. In land that retains a good supply you might save the crop without irrigation, but grain is much more likely to prosper. Plow deep, cultivate by pulverizing till no crust is left, keep down the weeds, and 10 to 15 inches should make grain do well, and on retentive soil one inch constant flow to 10 acres will usually insure ordinary crops.

Transpiration is water passing through the plant and out at the leaves; evaporation is moisture escaping from earth into the atmosphere. Either is less in cold than heat.

Leaf mold or granular mulch four inches deep keeps moisture below if kept dry on top, so it will not draw the water to the surface. In wet soil evaporation will lose four inches per week, while soil dry on top will only release from one-fourth inch to an inch in the same time. High temperature and little cultivation will sometimes cause a loss of nine-tenths of the water in storage in the soil, in a single week.

When soil is 90 degrees in the shade it will go 95 to 100 in the sun. Loose soil will be 10 degrees cooler 1½ inches below the surface than tight, and will save 20 per cent. of

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PUROLINE A Powerful Antiseptic and Deodorizer. Odorless, non-poisonous. For use in hospitals, homes, public institutions, boards of health and ranches. ***B. & G. Disinfecting Co.,*** 417 Laughlin Building, Los Angeles, Calif.

A little building paper or laths placed loosely around tree trunks will help to prevent sun scald.

water, while temperature kept down to 57 degrees will save much more still.

Try to avoid the water going too deep. A furrow six inches deep is about the fair average to be desired on various soils, harrow or cultivate to loosen and dry out top soil, covering the furrows quickly if the soil is not of a nature to draw up the moisture.

Water inclines to sink directly downward rather than sidewise, so irrigating ditches should not be more than three feet apart. Potatoes can find and keep the water near their roots at that distance if the furrows are not so deep the water gets too far below to start with.

Have an even slope if possible, nearly level preferred, or govern the course of the water by the arrangement of your ditches.

In tree planting put a furrow three feet each side your row of trees and dig about each tree a circle six feet in diameter the first year. After one year's growth eight or ten feet will do. Take care of spaces between trees, leaving no weeds to take the strength and moisture from the ground.

Late fruits need about one inch more water than early ones, but none except apricots after harvesting of fruit. Set apricots 24 feet apart and most or all other trees the same for best results. Furrow deep to coax tree roots down and never water trees nearer ripening time than two or three weeks, and figs from four to six weeks. After the first crop of figs is off a good irrigating will develop the second fruiting. Never irrigate grapes after July.

REGARDING THE DATE.

Observations on the date are chronicled in an article in the Plant World of recent issue. Regarding the date fruit and its ripening it says:

"The development of the fruit takes place in three stages. After fertilization very little change in the fruit itself can be observed for several weeks, but during this period the entire energy seems to be expended in building a long massive stem. When this is nearly completed, the fruit starts to grow and the seed to mature. When the fruit has reached its full size, but is still green, it corresponds very closely in chemical character to any other nonstarchy fruit, and contains about 20 per cent of dry matter. The third stage now begins and additional sugar is heaped into the fruit at a rapid rate without any apparent change in size until upwards of 60 per cent dry matter is present. It then softens, the tannin becomes insoluble with consequent loss of astringency, and the fruit is ripe."

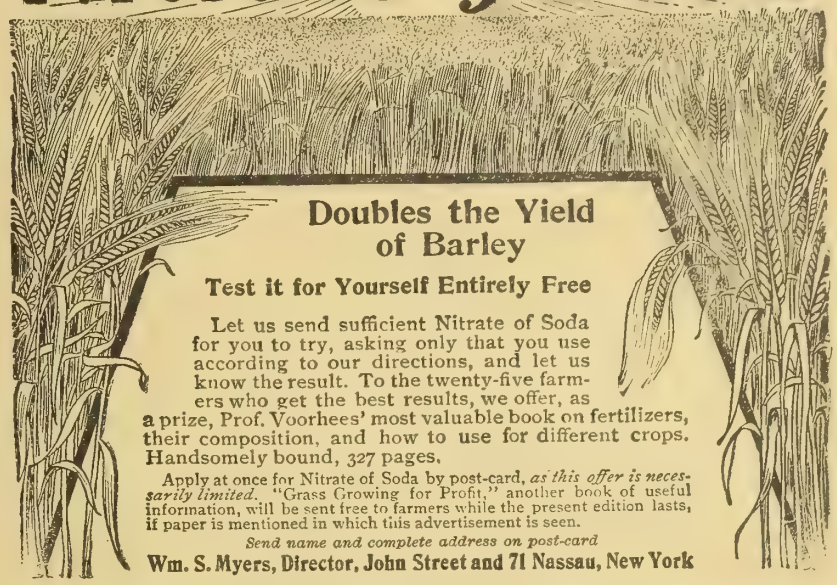
CONCRETE HUMMOCKS FOR AUTOMOBILISTS.

Concrete hummocks a foot high, and located about 150 feet on either side of grade crossings, is the latest device to be used to prevent crazed automobilists on Long Island from endangering lives by recklessly driving over grade crossings, regardless of approaching trains. This scheme was decided upon at a conference in Long Island City between a number of prominent men who are desirous of putting a stop to speed madness.

Without previous discussion, says Cement Age, New York, the investigation has completely influenced them in favor of the hummock plan. It is in successful use in Babylon and is said to have been the only device thus far evolved which has put any sort of check upon speeding automobilists. When one of these "thank you ma'ams" looms up in the distance the driver of the machine must either slow down or risk smashing the springs on his machine, if not a more serious breakdown. The slowing down at these hummocks sufficiently far away from the tracks would have the double effect of curbing the speed mania at that point and give the occupants of the automobile a chance to find out if the distant railroad crossing was safe.

Break the crust of soil beaten hard by the storms. Go over the garden after a hard rain, loosening the soil, and the hose will not be so much in demand.

Nitrate of Soda



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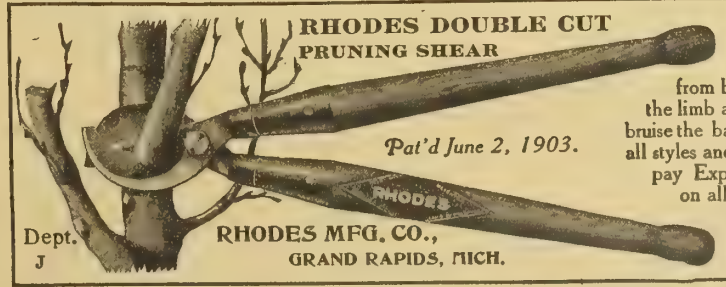

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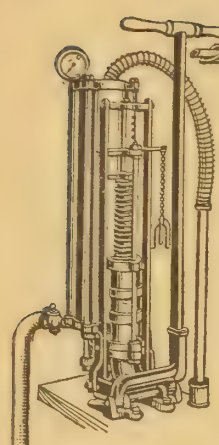

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Grafted trees grafted on Northern black and California soft-shell roots. Seedlings grown from selected nuts from grafted trees selected by myself. Place your orders early to avoid the rush and get the best trees. Price 15c and up. Took first premium on nuts and trees this year. Some lemon trees still unsold. Fine lot of Kadota Fig trees.

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Deciduous Fruit Culture

By J. W. Mills

GRAPE GROWERS ALERT.

THE following communication shows the situation now confronting the table grape growers of this state. That the growers are awake to the situation is shown by the resolutions passed by the grape growers at Lodi. The communication is as follows:

At the session of the State Fruit Growers' convention at Sacramento, in the subject of "Marketing of Table Grapes" the information was brought out that an effort was being made by the New York commission houses to secure through a ruling of the Treasury Department, a rearrangement of the measurement of the barrels containing imported Spanish grapes, thus practically reducing the duty 53 per cent.

"Instructed by the convention, Chairman Jeffrey appointed a committee of three to oppose the move. This committee has been active and has discovered that the matter is more serious that at first supposed. A petition has been filed with the Ways and Means Committee, headed by Sgobel & Day per H. W. Day, asking that the duty on Almeria grapes be entirely removed. This petition is full of misrepresentations in regard to the grape industry here.

Two thousand car loads of these imported grapes enter the New York market and have made their way this season west, to Portland, Oregon.

To remove the tariff on them would, no doubt, be very injurious to the California grape industry.

It is highly desirable to bring to the notice of the fruit growers of the entire Pacific Coast, that the New York men that have been receiving a large share of the business of California, Oregon and Washington, and who have written hundreds of letters to grape growers, mentioning the market depressions caused by the arrival of Almeria grapes, are now busy endeavoring to persuade the Ways and Means Committee that Almeria grapes do not compete with California grapes, and endeavoring to secure tariff legislation ruinous to their Western customers.

This committee will continue to do its utmost to prevent such legislation, and would be glad to receive the co-operation of the organized fruit interests of the State, as well as commercial bodies.—Robert G. Williams, Chairman, Almeria grape tariff committee, 35th State Fruit Growers' Convention of California.

The petition of Sgobel & Day and others is too long to give in full, but from it we take the following extracts:

"The fruit is no longer a luxury and should be within reach of all citizens, but as this country is unable yet to meet this demand, unless foreign grapes are brought in, the consumer will either be unable to enjoy the fruit, or, on account of the shortage, the price will place it beyond the reach of masses. The question of revenue, never having amounted to $300,000, is too small to be of moment in comparison with the rights and interests of the public and consumer, who would be permitted the use of this healthful fruit at the minimum cost. The duty is not required as a protection to the home product and is only called for by the home producer in order that he may reap the benefit of the higher prices thus established.

"The present consumption of grapes grown in California and Spain in the American market is about 55,000 tons, of which quantity during the present season California supplied 41,000 tons. This is no longer an infant industry requiring protection, as the home product is nearly three times as great as the quantity imported.

Almeria grapes do not compete with California or home-grown grapes, as the time of marketing and the quality of the grapes are separate and distinct.

California grapes market from September 1st until about November 15th. Almeria grapes market from October 1st until about December 15th although the larger part of them are held by jobbers in cold storage and sold to the retailer and consumer from January 1st until April 1st.

The California grape must be eaten within seventy-two hours after leaving the refrigerating car. It is not a fruit that will store to keep.

These conditions separate the fruits so that it cannot be claimed in justice that the imported grape has any effect upon the price of the home product.

If the Almeria grape fails to be imported however the price of the California grape would as a natural consequence advance, since California is not yet producing a large enough quantity to supply the demand. Under the present duty rate the Almeria grape cannot be successfully imported."

Later the petition gives extended comment to the demoralized condition of the vineyard growers of Spain. "Owing to increased price of labor the cost production has risen until they are seriously considering retiring from the business. This they will do unless the tariff is removed and they are permitted to enter this country. This means that the imported grape trade will cease."

The American grape grower surely has abundance of sympathy with the grape grower of Spain and wishes for him success in his work of growing grapes. But for the American to consent to slaughtering his own industry which now feeds his family for the sake of the Spaniard is going far beyond any action which we believe the importers of New York City would ever take for themselves. It is unthinkable that the Ways and Means Committee will be influenced by the appeal of Sgobel and Day and others.

The following resolution was passed by the Lodi Growers:

Resolved, by the table grape growers of San Joaquin county, in meeting assembled, That we hereby petition Congress to take no action on the petition headed by Sgobel & Day and submitted by Frances E. Hamilton, to the Committee on Ways and Means, as shown by Print No. 42, until we can present facts and figures showing its inaccuracies and misstatements.

Resolved, That we do further petition that, instead of either reducing or removing the duty on the Almeria grapes, the duty be increased until the duty added to the freight will at least equal per pound what it costs us per pound by rail to New York, thus giving the grapes raised in this country at least an even chance with the foreign-grown grapes.

A COMMITTEE NAMED.

Judge C. W. Norton, Robert K. Williams, H. H. Fanning, J. McKindley, George Lawrence and George W. Ashley were appointed to present the cause of the growers to Congress.

INSECTICIDE LAW.

The following is the gist of the Colorado law on sale of insecticides in that State:

"It shall be deemed a violation of this act for any one to sell in Colorado insecticide poisons such as Paris green, London purple, white arsenic, arsenate of lead, arsenate of soda, arsenite of lead, arsenite of soda, acetate of lead, cyanide of potassium, hellebore, pyrethrum powder, and the like, that are diluted or mixed with other substances, unless the kind and amount of the adulterants or mixtures are conspicuously printed in plain English upon each and every package sold. Upon each and every package of white arsenic, arsenate of soda, arsenite of soda, acetate of lead, and cyanide of potassium, sold in this State, the percentage of guaranteed purity must be plainly marked, and on all packages of arsenate or arsenite of lead the amount of water must be guaranteed."

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All these, like Muir, Lovell, and Phillips Cling Peach, are of California origin.

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Prop. Pleasant View Nursery.

Arizona produced over $6,000,000 in general farm crops last year.

Observations of a Tenderfoot

Miss Bee Josephine O'Mealey of Kanova Ranch at Anderson, Shasta county, gives these instructive observations of a Tenderfoot. She will surely cease to be worthy the name "tenderfoot" if she continues to observe and study California conditions as closely as she has up to this time. We hope we may hear from her again.

EVERY year hundreds and thousands of people pour into this great state, and buy homes and engage in fruit raising. Many of them have never owned a fruit tree before, these are better off than the experienced eastern horticulturist, for they have nothing to unlearn.

Our own introduction is so recent that we have not forgotten the many things which were such mysteries to us, and we may be able to aid the beginner in some of the matters, which, to the experienced grower, are so simple as to be a matter of course.

Our friends and neighbors said: "In pruning you must cut back the ends of the new growth so as to learn what buds the tree can comfortably carry, and thin out the branches where they cross or are too thick," That sounded easy, so three of us went into a five-year-old peach orchard, and in one short December day pruned 84 trees, and had an apron full of clippings on the ground.

We did not understand the meaning of "too thick." Fortunately, for us, an expert orchardist came along and explained to us what pruning really is. I am loath to admit that we were more stupid than the average beginner, we had simply never thought or understood, that reproduction of species is the primal instinct and object of all life, animate and inanimate. According to nature's plans—which are the antithesis of ours—the peach seed or pit is the object of importance, and the greater the number of seed or offspring a tree may produce, the sooner is its work done, its vitality exhausted, and it is ready to yield its place in life to the young of its own creation.

Man, however, desires the fleshy covering of the seed—not the seed itself—and would be very glad to dispense entirely with the seed. Man also desires to prolong the life and usefulness of the tree as much as possible, therefore it follows, that he must pursue a course which will compel the tree to produce a greater amount of the flesh; and a lesser number of seed since it is the seed which saps the strength and endurance of the parent.

We understand that a tree has a certain amount of sap and energy, which for our own best interests must be conserved and forced into the channels adapted to our needs and desires.

A tree left to itself will throw out a great many branches, which must of necessity be weaker than a lesser number would be, and set numbers of fruits which are, of course, smaller than if they were limited.

You remember our arithmetics taught us that "the greater the denominator, the lesser becomes the fractional part of an integer." Just so, the greater the number of fruits the smaller, must each become. Therefore it follows that the growth of a tree must be restricted, that the sap and energy may be concentrated on this task of making fewer limbs but better ones, to hold up fewer fruits but better ones. In order to do this we cannot cut off one-half or two-thirds of the tree in an entirety, and let the rest stand undisturbed, for thus, there would be no balance or symmetry, the over-crowded fruits would be misshaped and the overburdened branches would break down, on the contrary the cutting must be here a little and there a little, keeping in mind the fact that sunshine and free circulation of air are essential to perfect development, therefore the limbs must be cut away so that each one left may be free from contact with, or shadow from its fellows; they must be shortened back that the weight may not come too far away from the center, nor must the tops be allowed to grow too high, for that makes the fruit difficult to harvest.

The branches must not be cut too high from the ground, lest the trunk sunburn, nor too low and spreading, because then they would be broken by cultivation. The tendency of the branches is to reach outward toward the light while the weight of the fruit drags a down-hanging limb yet further down, and if too much strain is permitted the result is a broken branch, wasted fruit and an injured tree. And also the position of the fruit buds must be taken into consideration. If you are very new, you may not know, we did not, that the fruit buds are those grayish woolly knobs on the young new wood, each one growing out of the scar left when last year's leaves fell. Those little brown protuberances will produce twigs, or part of them at least. The foliage is so distributed that its weight is inconsiderable and we must prune so that the weight of the fruit may not draw the tree out of shape.

Look at a twig, count the number of fruit buds, assume that one-third of them will develop, picture to yourself the size and weight of the peach at maturity, then estimate how many of these buds should be left on a twig. There is no hard and fast rule, a great deal must be left to one's judgment, and in the words of the old darkey cook: "If you got no judgment, may the Lord have marcy on yuh."

It is hard indeed to cut off great branches full of those little fuzzy buds of promise but much harder, for the novice, to spend weary days a few months later, thinning.

In my childhood my grandmother slapped my fingers many times for picking the little hard green peaches but need compels me to disregard those early lessons, and so, after careful pruning, peaches must be thinned and the more the better, a peach to each six or eight inches of twig being about right, if on opposite sides of the twig, they may be slightly closer. I do not for a moment think you will follow this rigidly, we do not ourselves though we know we ought, but it does seem such a waste.

An experienced orchardist told us—"No man can thin his own trees, he should hire some one who is mad at him to do it."

But again judgment must come into play, a full grown tree should produce three hundred pounds of peaches very comfortably, and you must choose whether that three hundred pounds shall number 600 or 700 or 2000. Remember it is the seed that saps the strength of the tree, call to mind the salability of small fruit as compared with large—if you contemplate drying your peaches figure how much longer it takes to cut and place six peaches than one and decide on the course which will prove most profitable, for after all it is the elusive dollar for which we are all hustling, and the health and beauty and poetry of horticulture is in most cases only a side issue.—Bee Josephine O'Mealey, Kanova Ranch, Anderson.

BETTER NUTS.

In a communication in the Tribune of Fullerton, Mr. A. A. Mills of Anaheim touches upon the problem of producing more No. 1 and less of No. 2 walnuts. On this point he says:

To correct these light weight nuts in the future is the problem. Probably all of our walnut lands have been cropped or double and treble cropped for upwards of fifty years. In many cases these lands have never received any fertilization, rarely fertilization in limited amounts, and probably never in sufficient quantity to supply the actual needs of the trees. Then again the physical condition of the soil has not always been kept at the best and generally irrigation during the summer months has been inadequate and often omitted altogether. Sooner or later such methods are bound to bring disaster.

To correct this for next season's crop, begin this week; sow the walnut orchards down to Canadian or to Prussian Bluefield peas, as it is now too late to sow other green manure crops. Keep the orchards well irrigated if rain should be scant, so that by late spring there shall be an abundant growth of the peas. If possible, have the peas innoculated with the nitrifying bacteria which might be obtained from the Department of Agriculture, Washington, D. C., on a hurry call. Allow the peas to stand until the vines are mature and the first peas begin to ripen. Then work the whole mass into the ground with a disc harrow, as it will be impossible to plow them under. After this is well rotted apply some good complete commercial fertilizer, say about 500 pounds to the acre, this fertilizer to contain blood meal and acidulated bone. Under no conditions use bone that has not been acidulated. During the summer irrigate well enough to keep the trees in a fine growing condition until the nuts begin to ripen, which will be from September 1st to 15th. The increase in quantity and quality would probably pay ten fold.

The Rex Company are advertising the highly recommended Rex Lime and sulphur solution manufactured at Benicia in this paper. From many who used it last year, with scarcely an exception come flattering testimonials. As an insecticide and fungicide it is giving good results. Address the Rex Spray Co., Benicia, Cal.

Cut back all straggling geraniums,

Peach Trees and Grape Vines
True to Name

We can supply any kind of peach trees and grape vines. Write us what variety and quantity you want and we will quote prices on same.

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The Schroeder-Son Nursery Co.
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Large Assortment. All Varieties.
MONTEREY CYPRESS
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Main Street Nursery, Petaluma, Cal.

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The undersigned takes pleasure in announcing to all who desire to raise choice fruits that his **Kadota Fig** and **California Concord Grape** are still in the lead as the choicest of table fruits. I am prepared to furnish these trees and vines in retail or wholesale lots. Circulars sent to all who send for them.

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First-class Fruit and Ornamental Trees. A large assortment on hand. Order early while we have plenty of select stock.

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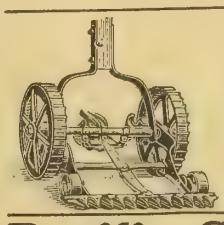

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Your dealer should have them—if he has not drop us a line and we will send circulars and prices.
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Now is a good time to plant. Pedigreed Stock. Fruit Trees and Berry Plants of all kinds.
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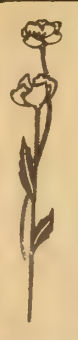

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Fullerton, Cal.

California Farm Names

This interesting bunch of farm names has been crowded out too long. It is one of the most interesting features of the Cultivator and gives beside an insight into methods of work in many parts of the state.

Send in your ranch name. If it's only an acre in size give it a name, you'll love it more, you will keep it up better, give it a bigger lawn and more flowers.

Name the ranch.

"Carson Heights," owner, Mr. & Mrs. Fred E. Judson, San Pasqual, San Diego county. This ranch is a part of the old home ranch of Mr. John Judson, one of the pioneers of '49. Regarding their home and its historical surroundings, the Judsons write:

"It is situated in the San Pasqual valley on the mountain slope just below where ran the old Fort Yuma trail used by the soldiers during the Mexican War. In this valley the famous scout, Kit Carson, and the American soldiers under General Phil Kearney fought a battle with a force of Mexicans. The Americans lost about 18 men and had as many more wounded. The Mexicans surrounded the Americans after the battle and Kit Carson and Lieutenant Beale slipped through the Mexican pickets during the night and made their way over the trail to San Diego bringing back re-enforcements. Carson Heights is devoted to raising thoroughbred White Wyandottes, English walnuts, alfalfa and dairying. Bananas have been successfully raised on the higher portion of the ranch. The water used for home and garden purposes is brought from mountain springs several hundred feet above the ranch, giving a pressure of 200 pounds per square inch. The power produced is used for running machinery."

"Mountain View Ranch," owner, Roy E. Swigart, Macdoel, Siskiyou county. Mr. Swigart uses well printed stationary, both letter head and envelope. Mountain View Ranch is located in Butte valley in Siskiyou county and has the finest of sunshine and most beautiful weather. It is however surrounded so completely by mountains that the name Mountain View has been chosen for the ranch. The mountains surrounding are covered with pine and the valley with juniper and sage. "Old Mount Shasta, ever white robed, is at the south end of the valley and Mount Pitt shows boldly above the rest of the range on the north."

"Dos Alisos," owner, G. S. Storrs, Duarte, Los Angeles county. This home is in the midst of a beautiful setting of orange groves in the foothills above Duarte overlooking the beautiful San Gabriel valley and but a few miles out of Los Angeles.

"Steladelma," owner, G. W. Scott, Madison, Yolo county. Mr. Scott writes that he considers the farm names a valuable feature of the Cultivator and in explanation of the name "Steladelma" says that it comes from the names of three daughters, Stella, Addie and Elma. "We devote the land of this place to diversified farming and stock raising which I think are inseparable if profit is desired. We have all kinds of stock and a fine flock of White Leghorns. Besides the horses used in farming operations we have a 32 horse power traction engine used largely in the grain fields. I am now 80 years old, in good health, full of hope and vigor and in expectation of a bright future here in this world."

"Acacia Farm," owner, Mrs. B. Marks, Dos Palos, Merced county. Mrs. Marks writes she has been a subscriber to the Cultivator for over ten years and expects to be among the subscribers for the next 40 years "as I am now only 60 years and doing the greater part of the work on our little 20 acre farm. Your suggestion that we name our farm is fully appreciated. Thank you for the interest you have taken for our welfare. The Cultivator is truly the farmer's friend. It is not printed in the interest of the corporations or middle men. May it continue to grow until it reaches every farm in California." Regarding conditions in the San Joaquin valley Mrs. Marks further adds that many farmers are embarrassed by the exactions of the "M & L Corporation" which have kept finances in a strenous condition the last two years.

"The Virginia," owner, Joseph Clarke, Redlands, San Bernardino county. Mr. Clarke writes: "In reference to farm names would say we have decided to call our ten acre orange grove and home 'The Virginia' in memory of my old home in the Old Dominion. Our place is located on Colton Avenue and Nevada street, two miles west of Redlands. I think the naming of the farm an excellent idea. We appreciate most highly the Cultivator and could not keep house without it."

"Arbor Ville Ranch," owner, W. H. Condart, Holtville, Imperial county. Mr. Condart writes that Arbor Ville consists of 100 acres on which one of the first crops was sweet potatoes. "The arbor which leads to the name is covered with sweet potato vines too dense for the sun to get through. On the first of last March my land was a barren desert and now the shady arbor will be made the main feature of the ornamental part of the ranch. We are much interested in your farm names and think all farmers should give their place a name. Our aim is to make the ranch deserving the name we have given it." The writer further adds that their ranch is slightly above sea level which is contrary to most of the ranches in the Imperial valley.

"Rancho de Martinez," owner, Thomas R. Hanna, Martinez, Contra Costa county. Mr. Hanna has neatly printed memorandum sized letter heads and fine bond paper, carrying the information that choice fruits are the principal features of the ranch.

"Early Vale Orchard," owner, H. Kettenburg, Winters, Yolo county. Mr. Kettenburg writes: "In a way of suggestion I would like to say that we endorse the course of the Cultivator. It is always a welcome visitor and after reading it is filed away for reference. Our little farm contains 55 acres of which 15 is in orchard, of apricots, peaches, plums, figs, pears and apples, and about 10 acres we use for winter and early vegetables. The remainder is in pasture and in hay. We keep about 100 laying hens, the product of which is sold in San Francisco at 35 cents per dozen the year round. This is done by contracting with private parties."

"Cypress Avenue Fruit Vale," owner, Mr. & Mrs. D. S. Coyner, Los Alamos, Santa Barbara county. Regarding this attractive home Mr Coyner writes that it is about a quarter of a mile from the center of Los Alamos. "Six acres are planted in fruit trees, consisting of pears, apples, peaches, plums and walnuts. We have besides two small vineyards and nearly all the trees are in full bearing. Our home is a nice seven room house, has a good barn, outbuildings for storing fruit, lots of shade trees, windmill and tank, and we raise the finest kind of vegetables between trees."

"Canyada Verde," owner, A. M. Otis, Whittier, Los Angeles county. "The Cultivator is essential to our work here in this beautiful La Habra valley. Our Spanish name means Green Valley and that is certainly what we have."

"Alberta Orange Grove," owner, A. E. Rudell, Rialto, San Bernardino county.

"El Modello," owner, Charles F. Collins, Dinuba, Tulare county. Mr. Collins writes that he is growing on El Modello 105 different varieties of fruit and nuts, and that he can pick fresh fruit from the trees every day in the year. "Back home, in old Iowa they are in the icy grip of Jack Frost while we have bowers of roses on El Modello."

It is with pleasure this week that we are permitted to announce that Assemblyman Lawrence H. Wilson of the 16th district has taken up the matter of introducing into the present session of the California legislature a bill designed to extend the privileges of a trade mark law to farm names. The purpose of such bill being to protect such a name so the farmer may advertise his products under that name and be protected in the use of the name in shipping fruit, garden truck and other farm products.

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NEW 1909 CATALOGUE
Just off the Press
116 pages, fully illustrated contains information of value to planters. General facts about seeds, plants, bulbs, flowers and trees; when and how to plant; the best garden tools, etc. Sent free on request. Write for copy.
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Balled in moss and leaf mould. Need less water and can be planted later. Uniform size and being balled have fine roots. Fine to grow. Boxes of 100, sample lot, in flats and protected tops, only $1.60. Try them and you will use no other. Write for circular and special prices on large lots.
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Is cheap, durable and quickly put on the tree. It prevents Rabbits from destroying your trees. A sure protection against frost, sun-burn, grasshoppers or dry winds. Can be easily removed; will last for years.
Send for samples.
Prices
12 inch long, $ 9.00 per 1000
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American Live Stock Breeders Convention Program

THE twelfth annual convention of the American Live Stock Breeders Association will convene next Tuesday January 26, at ten o'clock at the Belasco Theatre, 335 South Main Street, Los Angeles.

The first session will be largely given over to addresses of welcome and response and to the annual address of President H. A. Jastro and to the appointment of standing committees. Hon. W. A. Harris, of Lawrence, Kansas, will, however, make an address on Our Foreign Markets.

Tuesday afternoon session will convene at two o'clock. Hon. J. A. Carey of Cheyenne will give an address on Land Laws; Hon. S. H. Cowan, Attorney for National Live Stock Association, What the Live Stock Industry Demands of Congress; C. D. Marsh, Expert of Bureau of Plant Industry, Washington, The Loco Investigation. These addresses will be followed by a general discussion by all members on tariff on hides, wool and live stock.

Wednesday morning, January 27, Dr. O. E. Dyson of Chicago will give an address on Meat Inspection; I. T. Pryor, President of Cattle Breeders' Association of Texas, on Benefits Derived from Live Stock Organizations and Co-operation; Honorable Gifford Pinchot, Chairman of the National Conservation Committee, it is hoped will be present and deliver an address. The closing feature of Wednesday morning will be an address by E. S. Gosney, President Arizona Wool Growers Association.

Wednesday afternoon at two o'clock Dr. C. M. Haring, Veterinarian of the University of California will give an address on Live Stock Conditions in California; Dwight B. Heard, President Arizona Cattle Growers Association, Federal Control of Public Grazing Lands; J. C. Underwood, Wyoming, Secretary Laramie County Cattle and Horse Growers' Association, The Future of the Cow-man. The afternoon session will be closed with a general discussion of the administration of forest reserves and the proposed government control of the open range.

Thursday, January 28, at ten o'clock, will be the consideration of resolutions, followed by general business of the association, election of officers for the coming year, selection of the next place of meeting, etc.

Thursday afternoon will be given over to an automobile ride under the auspices of the Los Angeles Chamber of Commerce. This feature will start at two o'clock.

Beside the above entertaining features, a reception will be tendered on Tuesday evening, January 26, by the Chamber of Commerce, at its rooms, 128 South Broadway. On Wednesday evening, the Y. M. C. A. has extended the invitation to its athletic contest and a reception at its magnificent new structure, 721 South Hope Street. On Friday morning, trips will be taken to Pasadena, members reporting at the Pacific Electric Depot at nine o'clock for the start. On Saturday afternoon, January 30, members will attend the driving club matinees at Agricultural Park.

Among the important questions that will come up for consideration at this convention are: Tariff on hides, wool and live stock; extension of foreign markets for live stock and meat food products; railroad legislation, covering railroad service; prohibition of advances in interstate railroad rates except upon approval of Interstate Commerce Commission; a minimum speed limit for transportation of live stock and perishable freight; meat inspection and sanitary condition of live stock; federal control of the unappropriated open range suitable only for grazing; administration of forest reserves; also other questions of interest to live stock people.

KEEP HOGS FREE FROM WORMS.

A Missouri correspondent writes: "I am fattening a small bunch of March pigs. I am feeding them all the new corn they will eat, together with a liberal allowance of ground rye and skim milk. In addition to this ration they are being fed some pumpkins, as the pastures are dry. Would you advise feeding anything to prevent worms? If so, what?"

We believe it is always a good plan to feed hogs something that will keep worms away. This comparatively few farmers do. We have frequently visited the slaughterhouses here in Sioux City and elsewhere, and there have become impressed with the fact that the great bulk of the hogs that reach the market are affected with worms to a very large extent. Sometimes their intestines are so filled with these pests that one wonders how they manage to live. There are a number of good worm remedies on the market.

A hog that is infested with worms cannot produce pork economically, because its system is not in normal condition. Furthermore, such a hog is also more susceptible to contagious and other diseases than one not affected in that manner. We have often made the statement that worms are frequently the indirect cause of cholera. Do not understand us to say that worms will produce cholera. Far from it. Cholera is a germ disease and can be produced only by the cholera germ, but a strong, vigorous hog is not nearly so susceptible to cholera as is one whose system is in a run-down condition.

A very good, practical remedy for worms consists in feeding one pound of copperas to 100 pigs for a period of five days. Then feed no copperas for six weeks; after that feed copperas for five days again as before and continue this intermittent copperas feeding from birth to block. The copperas should be dissolved in water and mixed with the grain, preferably ground grain of some kind. Many hog feeders are using this remedy and recommend it very highly.

SUCCESSFUL SALE.

The sale of high bred Shorthorn cattle made by the Howard Cattle Company and Mrs. J. H. Glide at Woodland on January 5, resulted in the sale of 62 head of exceptionally fine stock. The average of the 62 head was $157, or a total of 9,775 for the 62 head. The 23 head of cows sold for a total of $3,390, an average of $147 per head, while the 39 bulls sold for $6,385, an average of $163 per head. The highest priced single animal was English Lady Fifteenth, bought by J. W. Goodwin of San Francisco. This animal commanded $510. Mr. Goodwin also carried away a fine bull Ed. Lancaster, 299834, a youngster calved November 6, 1907, for which he paid $450. T. B. Gibson of Woodland captured Glides Gloster Second, for which he paid $400. Other stock were purchased at prices ranging from $100 to $300. Amongst the purchasers of these fine animals we noticed S. H. Cowell of San Francisco, B. Bloss, Atwater; Sam Aftergut, San Francisco; J. F. Dunne, Hollister; J. W. Goodwin, San Francisco; T. B. Gibson, Woodland; Leslie Symmes, San Francisco; Grenada Ranch Company, Montague; Kern County Land Company, Bakersfield; Henry Able, San Jose; Joerger Bros., Clarksville; William L. Newhall, San Francisco; A. W. Foster, San Francisco; George L. Dillman, Anderson; F. Steinzel, San Lorenzo; W. M. Van Arsdel, San Francisco; George Chandler, Baker City, Oregon; W. F. Dillingham, Honolulu; W. G. Rossi, Slatington.

The Sacramento Valley Development Association is hoping for the appointment of a commission by the governor to act in conjunction with the commission appointed by the President which will have to do with the improvement of the Sacramento River and its tributaries.

Cream Separators, all sizes, all prices. O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

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Eucalyptus rostrata, the Red Gum
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E. cornuta, the Yate Tree
E. polyanthema, the Red Box
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and Many Other Valuable Sorts
I shall be pleased to correspond with prospective buyers and give particulars as to prices on the seeds I am offering. Trial packets of any variety 15c each, 2 for 25c, or twelve for $1.25. Also young trees of many varieties for sale. Send for circular and cultural directions.
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GROWER OF STRAWBERRY PLANTS ONLY
and only the best. Price $2.50 per thousand. Write for my price on lots of ten thousand or over.
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By Mrs. Minna E. Sherman

THE FARM SEPARATOR.

AT THE latest Creamery Operator's Convention the farm separator came in for a good share of attention at the hands of the various speakers. It was certainly not considered as an improvement. The responsibility for all the bad creamery butter that has troubled the markets lately, was held to be its fault. Now the fact is that this way of handling cream has come to stay, and the ways of handling it must be met. The situation is about like this. I visit many creameries during the year, and I am of the opinion that the butter maker is often a routine man who cannot meet an emergency. The old time butter maker who took the pan skimmed cream he could get, and made it into first-class butter, possessed a greater knowledge of actual cream than the present butter makers. They must learn to know cream quickly at sight. Under the system of receiving the sweet milk at the separator, putting it through the separator, and into the ripening vats and then into the churn resolved itself into a simple mechanical proposition of time, temperature and good temper on part of the butter maker and his helpers. Now comes the trying out. If the butter maker is worth his fancy wages, he can handle the cream from the farm separator.

Handling.

The farm cream arrives at the creamery where it is inspected, and if a man knows cream he should be able to put it in a vat with its kind. Then with proper cooling rooms and the use of an acid test it can be worked off all right. Cream that arrives too bad for use should be sent back just as the milk used to be sent home. The butter maker did not have to receive unusable milk, neither will he be obliged to receive bad cream. The test for acidity it has been contended must be used for every little batch of cream as it arrives at the creamery. This is unwarranted by the facts of the case. Two or three vats should be in use and after the fat sample is taken, put the cream into the vat that it is nearest like. After the cream is well stirred it should be chilled and then tested for acidity, and if ready may be churned at once. The cream should be graded as No. 1, 2 and 3, and churned separately, and sold as 1, 2 and 3 grades of butter. Then divide the prices among the producers of the cream according to the price of the resultant butter. Let the man with No. 1 cream receive No. 1 prices for it, and let the man with No. 3 receive grease prices for his.

Justice.

The low price brought by the poorer cream would soon bring the dairy man to time. If he chose to go to the next creamery, let him go, for he is not worth much to the creamery any way. Back in Wisconsin it is rather amusing to hear the children; they speak of their father's farm with pride, as having been a condensary source of milk. They quite look down on the neighbor who is only a butter creamery man. Why should we not foster the same pride in our people? We can do it by paying for cleanliness. Why should we not pay for cleanliness? The careful man that sends in clean, pure cream spends more money than the slovenly man who is content with any old sort of stables. Cleanliness in the cow stables means cement floors, Gypsum spread daily, all manure hauled out and extra wages allowed to picked out milkers. How sensitive are the milkers to any criticism of their ways! They often have the large dairyman at their mercy. The Japanese crews are terribly set in their ways and do not have any conscience about leaving in a bunch. It has always seemed to me that a cruelty charge could be laid to the milkers who leave without cause, for the cows suffer from going unmilked. It is certainly cruel to the owner. Now the worry of handling a large herd of cows is greatly increased if the owner enforces cleanliness. I presume it is a knowledge of guilt that makes people touchy about this matter. To call a patron dirty has cost the butter makers a job sometimes, in the creamery, while to tell a farmer's wife how poor a cook she really is, did cost one Farmers Institute speaker a place on the force. These things must be said and it is not a poor test of the man or woman who can clothe an offensive fact in polite, inoffensive language.

Modern Virtue.

Personal cleanliness is certainly a modern virtue. While many will contend that it was not possible that the Revolutionary dads were not as well washed as their grand children, still, we remember the farm house way, of filling the old wooden tubs with hot water on Saturday night for the dreaded weekly bath, and then think how we of today have our porcelain tub of hot water every night for cleanliness and the cool morning tub for refreshment and do not consider we are over clean then.

Modern Improvements.

The milking machine seems to have again dropped out of sight, but it will come when the need is great enough. We are now thinking of developing the electric power to help us out on the ranch. Electricity can be made to save considerable labor. Out at the Kearney place, now left to the University for a State School, electricity has been applied to a number of uses. The engines are run every evening and furnish light until nine o'clock doing away with the risk of fire from lanterns, pumping the water at the same time. On the ranch we will try the utilization of the water flow to run small plants for pumping out drainage water, to pump well water and to pump for irrigation. By establishing a central plant and wiring the ranch by degrees the whole can be brought into operation. The work of pumping out water fortunately comes at the time of year when the water is in the canals. The lighting up of the houses as well as barn will be a part of the improvement. There are so many uses for electrical power on a farm that it is only a matter of time until the large power companies will supply it to us. The separator, milking machine, vacuum house sweeper, as well as fans for the houses and for the cow stables are all within easy reach. The farmers need not do without so many things that he does not have, if he will utilize the forces at hand instead of wishing for the things of the city. The person who lives in the country has so many things that even the wealthy do without in the cities. I feel when I return home from a stay at wealthy homes in the city, as though I lived a life of luxury with horses and carriages and men to do my bidding at every turn.—M. E. Sherman.

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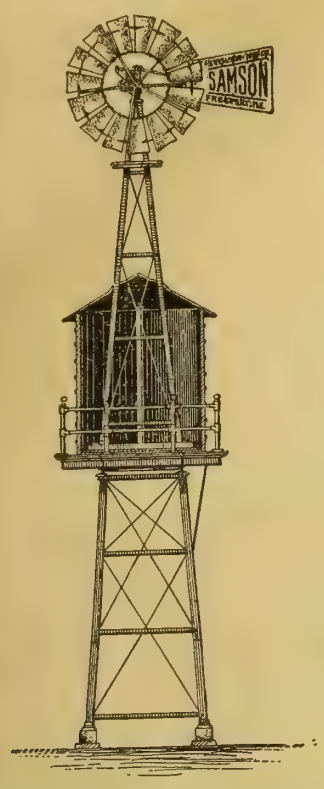

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Portland eggs are now quoted at 42½ cents.

centage of the meat offered and sold for bacon is not of the best quality. With the most of it there is too large a proportion of fat. People are becoming more and more exacting and the discrimination against the nearly all fat strips is becoming very marked. For first-class bacon the rule requires three streaks of lean intermixed with fat. There are three breeds of hogs that are well fitted by their physical makeup to produce first-class bacon—Berkshire, Yorkshire and Tamworth. It is an erroneous idea that any of the breeds fed along slowly to the desired weights make first-class bacon. There must be an inclination on the part of the breed to produce a large percentage of lean meat, and the ideal bacon hog must be long and deep sided. We have entertained a decided preference for the Berkshire, not only on account of the abundance of lean on the sides, but because they produce superior hams that sell for a high figure.

There seems to be an opinion that the pigs destined for bacon must be fed along slowly until they have reached the required weight. This is a mistake. It should be borne in mind that young animals develop muscle while growing and not after; therefore, in order to secure the best results they must be fed with the object of rapid growth in view from the start. It is a good plan to encourage them to eat when three weeks old and feed them scalded middlings mixed with milk while yet warm, in a little trough where they can get to it and not be interfered with by larger animals.

Clean the trough each time before putting in the next feeding. Keep the appetite good by giving only as much as they will eat up clean. As they grow along, coarser feeds can be mixed in, such as corn and oats ground together, with the hulls sifted out. Barley, peas and rye make good feed to mix with the other feeds. Rye is sometimes cheaper than middlings. The main thing is to make the feed palatable and keep it well balanced with protein enough to make blood and muscle as well as fat. A good ratio of protein to carbohydrates is one to six in winter and one to five in summer. A grass run in summer and clover hay in winter help greatly and make the feeding less expensive. —Farmers' Tribune.

A POPULAR ERROR.

In the handling of live stock I do not know of a mistake so common among all classes of men, aside from the veterinarian, as the one connected with the common colic of the horse. Scarcely without exception, when the horse is cramping from colic, he is thought to have something the matter with his kidneys. Cramps in the intestines from accumulation of gases or some irritating food cause him to stretch himself with the fore and hind feet wide apart. No doubt this gives some relief by tightening the muscles across the abdomen. It is not an indication of any fault with either the kidneys or the bladder. It is a physiological fact that spasm in the bowels acts reflexly upon the bladder, making this latter organ inoperative for the time being. The remedy, in almost every case, is nitre, or some remedy directed to relieve the bladder or the kidneys. The correct remedy would be to give a purge to remove the irritating substance from the bowels, and anodynes to relieve the pain. The bladder, except in cases of long protracted colic or inflammation of the bowels, will take care of itself. Diseases of the kidneys are quite rare in the horse, and when they do appear seldom come with an acute attack. Remember, then, if the horse is rolling on the ground, getting up and lying down, bloated, and stretching himself out, the chances are a hundred to one that it is colic, or some other disease, and no fault whatever with the bladder, although his actions might indicate a distention of that organ.—Geo. H. Glover.

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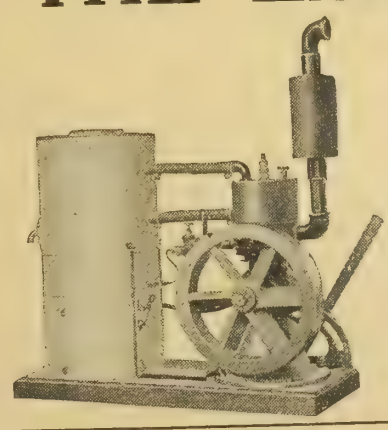

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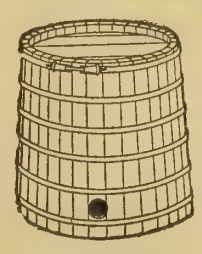

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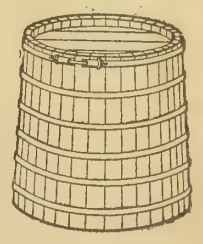

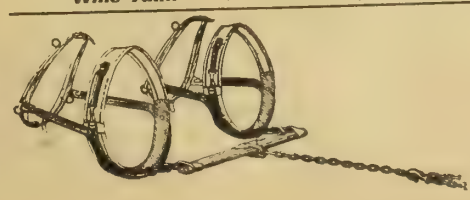

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Contents

FIELD SCENES IN IMPERIAL VALLEY, Cover.
EFFECTS OF LIME ON SOILS, 59.
CITRUS.—Value of Humus; Regarding the Date; Save the Water; Concrete Hummocks, 60, 61.
DECIDUOUS.—Grape Growers Alert; Insecticide Law; Observations of a Tenderfoot, 62, 63.
CALIFORNIA FARM NAMES, 64.
LIVE STOCK.—American Live Stock Convention Program; Keep Hogs from Worms; Successful Sale; The Farm Separator; How to Produce Bacon; Popular Error, 65, 66, 67.
EDITORIAL.—Trickery of Importers; Farm Names; Demonstration Train; Dry Farming Congress; All For a Dollar; National Live Stock Association; Elevate the Bench; Farmers Institutes, 68.
AGRICULTURAL NOTES OF THE PACIFIC COAST.—Northern, Central, Southern, The Coast, 69.
POULTRY.—Line-Breeding vs. In-Breeding; Chicken Chat; Dressing Market Fowls; Artificial Incubation; Breeding Pigeons; Why Failure Comes; Fine Nests, 70, 71, 72.
QUERIES.—Cornichon on St. George Root; Dog Wash; Vanilla Extract; Garget; Pruning Malagas; Bacteria in Milk; Irrigating Grapes; Olive Oil Soap; Measuring Water; Brine for Olives; Various Questions; Bean Harvesting Implements; Mildew; Redeeming Old Vines; Egyptian Corn for Silo; Pumpkins and Citrons; Fifth Teat, 73, 74, 75.
HOUSEHOLD.—Rhyme of Thomas the Doubter; An Ideal Railroad; About the House, 76, 77.
PRODUCE MARKETS.—Los Angeles Market; San Francisco Market; Citrus Markets, 78, 79.

TRICKERY OF IMPORTERS.

After long association with various men in the mining camps of early California days Bret Harte came to the wise conclusion that,

For ways that are dark and tricks that are vain,
The heathen Chinee is peculiar.

The grape grower in California has reached the conclusion that John Chinaman has not yet secured an entire monopoly on the ways that are dark. They show us as evidence the petition recently filed by Eastern importers of fruits from Spain that these same importers have ways of their own that are also very peculiar. Peculiar in this, that the petition does not state a condition which does prevail in the great importing business and does not prevail in the grape-growing districts of California.

On deciduous page of this week's issue of the Cultivator will be seen a statement sent to this office by Mr. Robert G. Williams, Chairman of the committee recently appointed by the State Fruit Growers' Convention to look after the interests of California grape growers before the Ways and Means Committee at Washington. The work for which this committee was appointed was to prevent the importers from securing a reduction of approximately 53 per cent in the import duties on table grapes. The committee has now found that really the effort of the importers is to reduce the duties 100 per cent. In the petition which is headed by the large firm of Sgobel and Day, the statement is made that California "is not yet producing a large enough quantity to supply the demand," consequently the best interests of the poor consumer of the country demand that the Almeria grape shall be admitted free in the interests of these poor people. Imagine for a moment the poor people of the country buying Almeria grapes. Their price has been and will be, so far as any reduction might be made upon removal of the tariff, entirely prohibitive to them. Besides that the claim that California is not yet able to supply the demand is proved to be false by the results of last season's marketing. To be sure, we do not claim that the Tokay and other similar grapes shipped from California are identical with the Almeria. At the same time, with cold storage keeping of fruit, California table grapes have supplied the market until long after the holidays are past. This holiday trade is all Sgobel and Day claim they wish the introduction of the Almeria grape for.

The Lodi growers and some other sections are thoroughly alive to the situation and the wires have been kept warm with protests against any such action, and Congressman Needham is doing his best at Washington to aid the grape growers.

At the very best the California grape grower is handicapped by the freight charges being so much greater from California than they are from Spain. The tariff is only a partial protection or aid in overcoming this difference in freight. If denied this protection, disaster will surely come to the table grape industry.

FARM NAMES.

The Cultivator has just received a letter from Assemblyman Lawrence H. Wilson of the 16th District in which he says, "I intend to introduce a bill designed to extend a trade mark law to farm names, that such names, when used as trade mark or brand for the sale of fruit or other products, may be protected." This is certainly a wise move and will give to every farmer a material advantage in having a protected name for the ranch and be in addition a spur to him to produce as high a grade product as possible that his protected name might become a more valuable asset in his farming operations. We believe a similar law prevails in Missouri and possibly in some other states of the Union. We cannot conceive where any possible exceptions can possibly be taken to such a law, and it should surely not require a great lobby to carry it through. It would not necessitate any material expense for the recording of these names and issuing the permits to use them to the farmers and would be a clerical task of so small moment that its burden would fall lightly upon any department of the state government where it was placed.

Mr. Wilson requests that farmers having ideas regarding the features of this law write him, with any suggestions which may appear wise. Once it is definitely before the legislature it will perhaps be wise for everyone feeling that such a bill will be an advantage to the farmer to write to the various assemblymen and senators urging its support.

DEMONSTRATION TRAIN.

It now appears that all sections of the state touched by Southern Pacific lines will be given an opportunity to inspect the demonstration train which has already made the circuit of Sacramento valley and will soon be on its second trip through the San Joaquin valley. Later in the month it will touch Southern California.

This train is made up of several cars, two of which are used for exhibit cars, showing different methods of work and various farm products which have lessons for the producer. The train is accompanied by lecturers from the State University who give information along fruit growing and farming lines.

DRY FARMING CONGRESS.

Preparations for a great assemblying of "dry farmers" at Cheyenne, February 23-24-25, at the Trans-Missouri Dry Farming Congress, are practically completed. A letter from Secretary John T. Burns, of the Board of Control, Cheyenne, announces that some of the brightest minds of arid America will be present and that this will prove the most important congress held by this organization. Any person may become a member of this congress for a nominal sum, in consideration of which the bulletins of the congress are mailed as fast as issued. The congress wishes the name of every dry farmer of the west and will appreciate getting in touch with those who are interested in learning more as to culture of arid lands.

ALL FOR A DOLLAR.

Subscribers of the Cultivator often remark about the amount of matter which is given for the small sum which is asked on subscription. "The biggest and best for the least money" is a remark often made. Last week's paper required thirty two pages to hold the amount of good reading matter which we knew our subscribers would require. This week is twenty four and next week another big thirty-two pager is coming. In it there will be an article by an Australian subscriber of the Cultivator on Eucalyptus Culture, written especially with reference to the giant of all eucalyptus trees, Amygdalina regnans.

A lot of queries which are held over from this week will be given place by the larger edition. It may be noted this week that three pages are given up to these queries and their answers. This is becoming one of the strongest departments of the Cultivator.

Then there is Mrs. Sherman's Department, which is always exceptionally good. Mrs. Sherman says things in a way which gives information and is at the same time most delightful reading. Mrs. Sherman's article next week is "Ranch Doings." It isn't exactly all about the dairy, nor even entirely about live stock, although it will appear in that department, but in it is a fund of information which every rancher will appreciate.

Mr. Mills will touch upon Deep Cultivation of Vines which will be very timely. Other factors we will not take the time to enumerate, but bear in mind that "the biggest and best for the least money" is one of the mottoes of the Cultivator.

NATIONAL LIVE STOCK ASSOCIATION.

Los Angeles is making extensive preparations for the twelfth annual meeting of the American National Live Stock Breeders Association, and the Chamber of Commerce, Y. M. C. A., and other bodies in the city are planning to give the attendants the time of their lives. Secretary Tomlinson informs us that promise is made for large attendance and much interest has been manifested in correspondence and in suggestions for the meeting. Talented speakers from sections all the way from Washington, D. C., to San Francisco, are on the program.

ELEVATE THE BENCH.

There is one movement before the California legislature which should succeed this session. That is, the plan of taking the elections of all judical candidates away from party affairs. If adopted, the plan is that the names of candidates for the judiciary shall be given in a column separate from any party column, without any indication of the party affiliations of the candidate. Such a move can only result in the election of men of a higher type than has been possible under party domination.

FARMERS INSTITUTES.

J. B. Neff, Conductor of Institutes of Southern California, reports coming institutes as follows: Toluca, January 25; Gardena, January 26; Montebello, January 27; Fillmore, January 28-9; San Fernando, January 30.

Shop Talk

FARM BOOKS.—The Cultivator caters to the rancher along the line of farm books, and is always ready to give the advantage of any discount obtainable. For instance note the following copied from our 1909 clubbing list. All orders must include a year's subscription to our paper and the price given is for both. Books are also post paid so that no other expense is incurred. Send in your orders.

A. B. C. & X. Y. Z. of Bee Culture	$2.35
The New Agriculture	2.50
Feeds & Feeding	2.50
American Grape Growing and Wine Making	2.25
Poultry Standard of Perfection	2.35
Perfected Poultry of America	3.00
Campbell's Dry Farming Manual	2.50

The Cultivator included 1 year at the price.

Agricultural Notes of the Pacific Coast

Northern California

Cloverdale Citrus Fair will be held February 17-22.

Lakeport was recently visited by quite a severe snowstorm.

Yolo county has more grain sown than last year at the same date.

A large mill for making alfalfa meal has been established at Red Bluff.

Petaluma shipped nearly four and a half million eggs last year and 59,000 dozen poultry.

Two men near Healdsburg recently died from anthrax contracted while skinning a diseased cow.

Many cars of eggs have been received from Middle West points during the recent high prices.

The fall of snow at Meadow Lake, Nevada county, aggregated seven feet in the streets of that town.

Cherry trees of the Sacramento valley are in some sections being affected by a new disease called "cherry die back."

Marin county shippers of butter are increasing their shipments to San Francisco under favorable weather conditions.

Upper Matole, Humboldt county, has had over 25 inches of rainfall this year. This is about nine inches short of the average.

Shippers at Petaluma are working for a $15,000 appropriation in the State Legislature for the improvement of Petaluma Creek.

The Blackberry Growers Association of Sebastopol is considering a plan of incorporation in order to market fruit more satisfactorily.

The premium list for the Cloverdale Citrus Fair shows $75 first prize for the best display of oranges and lemons from one community.

The Tehama Live Stock Association in a meeting held at Corning recently passed resolutions endorsing the construction of the dam at Iron canyon.

The Tehama county stock association has appointed an advisory board to co-operate with the Forestry Service to work in harmony with it in the control of the forest reserves.

The plant introduction garden at Chico has just established in the gardens a 140 ton shipment of all kinds of bamboo brought directly from a large nursery in Japan. The government will propagate from this for a few years and then distribute.

One of the heaviest and longest continued storms that has visited Northern California resulted in the highest water which the rivers have shown since cultivation has become extensive. Many bridges were washed out and levees broken so that much valuable farm land is now under water.

The grange of Petaluma has installed officers for the coming year as follows: Master, M. D. Winans; Lecturer, Mrs. Alma Walls; Chaplain, Mrs. C. D. Grover; Treasurer, Mrs. E. G. Bennett; Secretary, Miss Cassie McGlynn; Steward, Mrs. A. S. Hall; Lady Assistant Steward, Mrs. M. D. Winans; Assistant Steward, M. D. Hopkins; Ceres, Mrs. Skiffington; Pomona, Miss Alice Kelsey; Flora, Mrs. Porch.

Central California

An orange grower at Exeter received as net returns for holiday fruit shipped, $644 for one car and $590 for the other, both being rather small cars.

The cry of the packers that over production of grapes is the cause of the present low prices is not accepted by the growers as being made in good faith.

County Entomologist Morris of Santa Clara county is one of the busy members of the newly formed Central Coast Counties Bee Keepers Association.

Horticultural Commissioner Sharp of Kings county calls the attention of planters of vines and trees to the horticultural law and insists on its rigid enforcement.

A bill recently passed the United States Senate for the purchase of private lands in eastern Tulare county which are covered with a Sequoia grove of big trees.

Grape growers at Lodi and other sections of Central California are up in arms over the efforts of the Eastern importers to secure free importation of Almeria grapes.

The annual meeting of the Fresno County Farmers Union was recently held and it was decided to ship dried fruit and raisins for members of the Union direct to eastern customers.

Lindsay has an orange which was shipped with a box of fruit during October to a point in Michigan, purchased at the fruit stand there and returned by mail and is yet in fair condition.

Stanislaus county reports that from present indications the grain and hay crop of this year will be much in excess of that of last year. The showers have been well distributed and the grain is now in fine condition.

According to the line of work laid out for the raisin combine it has run in contact with the regulations of the Cartwright law and a halt has been called until some different line of action may be taken up or the Cartwright law repealed.

Notwithstanding the raisin growers are up against the Cartwright law they are continuing to secure signatures of raisin growers to the contract. They confidently expect to arrange matters so as to save the valuable work done toward perfecting this organization.

Santa Clara Valley prune growers who have been concerned as to the prevalence of the red scab are demanding an investigation as to its cause. Some have maintained it was due to the thrips but many growers are asserting that such is not the case, it is merely a fungus and must be treated as such.

At the last regular monthly meeting of the Santa Clara Valley Poultry and Pet Stock Association officers were elected for the coming year as follows: President, F. E. Mann; vice-presidents, F. E. Baldwin, George A. Sealy, E. K. Glendenning, V. H. Richards, R. A. Robertson; directors, Henry Berrar, Joseph T. Brooks, W. S. Sullivan, E. R. Everett, A. B. McKean; secretary, Charles R. Harker; treasurer, E. Van Every; auditors, H. M. Billings, George Leaman.

Southern California

Imperial Valley is shipping much hay.

San Diego county has about 50,000 head of cattle.

The celery crop was greatly benefited by the recent storm.

San Diego county has about 11,000 acres in wheat, 20,000 in barley, and nearly 4,000 in oats.

The Highland plan of insurance against scale is spreading to other sections of San Bernardino county.

San Diego is not a raisin county but at the same time it produced last year over 4,000,000 pounds of very fine raisins.

A Fullerton chicken raiser shows his itemized accounts to prove that his hundred Rhode Island Reds netted him $300 last year.

The recent storm has delayed the shipments of citrus fruit, which will be a good thing for the market, which had become somewhat weakened.

Arroyo Grande has been wonderfully benefited by the showers of the last few weeks and vegetation is now in advance of last year this same date.

The Fullerton cabbage growers are discussing a contract offered them by a new shipping firm. Owing to some objectionable features it will probably not be largely signed.

The La Habra Vegetable Growers' Association in its annual report shows that a large part of the crop of tomatoes was delivered at the La Habra packing house, netting $40 per ton.

The cantaloupe acreage about Imperial will be vastly less than last year. Many of those who formerly engaged in the industry are now transferring their energies to live stock.

A new railway in southwestern Ventura county known as the Malibu Railway is now delivering beans for bean raisers in that section much more economically than former long hauls.

Southern California has been visited during the last few days with showers which have done a world of good. The rain has been light but coming so slowly has penetrated the ground very deeply.

At the annual meeting of Water Company Number One of Imperial valley, it was reported that that one company has under irrigation 82,000 acres of land for which they have 135,000 acre-feet of water.

Cattlemen of San Luis Obispo county are seriously concerned over the rigorous enforcement of the quarantine law which they maintain is unjust because the dipping as performed in that county has been ineffective.

Southern California oranges recently sold in Philadelphia for one dollar apiece. It must be added, however, that this fruit was part of a car given for the benefit of the Italian earthquake sufferers. The entire car brought $2550.

Wild ducks killed by the members of gun clubs near the big San Joaquin ranch have long caused wonder by their exceptional fatness. This has finally been found to be due to their raids upon lima bean fields belonging to neighboring ranch people.

The Coast

The fruit growers of Idaho, recently met in annual session at Caldwell.

Arizona cantaloupe growers will grow practically no cantaloupes this season.

Scions of Winter Nellis pears are being shipped from Coeur d'Alene to fruit growers in Iowa.

The state manager of the Farmers' Union of Washington is organizing a new union at Sprague, Washington.

A meeting of the Farmers Union of Washington and Idaho has been called to meet in Spokane on February 9.

Portland is building a new live stock pavilion. It is of brick and 65 feet high and will seat 5800 people.

The state legislature of Idaho is being petitioned to increase the appropriation for payment of inspectors of fruit trees.

A big exhibit of bees and honey will be made by bee men of Yakima county, Washington, at the Alaska-Yukon Exposition.

The Hawaiian Islands prohibit the importation of pineapple plants from Australia, owing to the fear of introducing injurious insects.

Twenty varieties of apples, shipped from Idaho to the recent horticultural congress at Council Bluffs, Iowa, won seventeen first premiums.

The Yakima county poultry show recently closed a successful annual show at North Yakima. Judge Denny of Syracuse placed the ribbons.

The Yakima Commercial Club is purchasing six carloads of Yakima fruit which will be sent east and distributed free as part of an advertising campaign.

A beet sugar factory is promised the farmers at Farmington, Washington, and contracts are being signed up for delivery to a factory which will be built at Waverly.

The Agricultural Department, which is working in the Hawaiian Islands, is endeavoring to secure colonization of American farmers to develop resources of these islands.

The levee on the eastern side of the Colorado River near Yuma was found insufficient to keep the recent high water within bounds, and much agricultural land was injured.

At the recent meeting of the Hawaiian Rubber Growers' Association, report of the officers of recent work showed the industry to be established on a profitable basis in those islands.

A recent cold spell of Western Washington was the coldest in its history according to the oldest inhabitant. In Portland the temperature dropped uncomfortably close to the zero mark.

Summer fallowing is said to be responsible for the destruction of prairie chickens in the Idaho country and the hunters are making effort through the legislature to devise some means of protecting this game.

Farmers all over eastern Washington are organizing horticultural marching clubs which will take part in a great industrial parade at the opening of the 17th National Irrigation Congress to be held in Spokane next August.

Don't Forget Quality

MIDLAND Poultry Food

Is based on ***quality*** and it is quality in Poultry Food that produces eggs. ***Cheap filler*** and ***cheap grain*** will ***not*** make eggs. ***Midland Poultry Food*** contains only the ***choicest*** cereals and animal food the market affords. You ***can't*** afford to try and be successful and not get results. ***Midland Poultry Food*** will produce results. Try it and see. $1.95 per sack

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Are still here, after others are gone. ***The Standard of the World Machine.*** Winners of ***more prizes*** awarded by ***World's Fair Judges*** than any other make.

Remember, we make a hot water machine. One of the ***best hot water machines*** on the market.

Send for our Illustrated Catalogue.

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Petaluma, California

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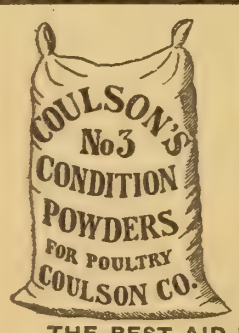
Aggeler & Musser Seed Co., 113-115 N. Main St., Los Angeles
Berrar & Robertson, San Jose, Cal.



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THE BEST AID IN GETTING THOSE HIGH-PRICED EGGS.
It acts as a tonic and digestive. Enables hens to lay more eggs during fall and winter.
Our FREE booklet, "THE RIGHT WAY," gives full particulars.
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Buy **Petaluma Incubator and Brooders**

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Get Our Prices on Egyptian Corn, Swift's Beef Scraps, Bone Mills, Clover Cutters, and all Poultry Supplies. **Send for Our Large Illustrated Catalogue.**

Aggeler & Musser Seed Co.
113-115 North Main St. Los Angeles, California
Southern California Agents for Petaluma Incubators and Brooders and Midland Poultry Food

Trap Nested White Leghorns

I trap nest every bird one year before I put them in my breeding yards, and no bird that has not made a record of 13 dozen or better per year as pullet is used. I cannot afford to breed neither can I afford to sell eggs from a hen that has not made this record as a pullet. I mate 15 hens to a well matured cockerel or yearling cock bird. My breeders have roomy yards, thus assuring strong fertility. A few choice cockerels for sale.

Eggs $1.50 per 15; $7.50 per 100; $60 per 1000.

S. E. Gregg East Adams St. Riverside, Cal.

White Wyandottes

My San Jose Winnings: 1st, 2nd and 3rd Cock; 1st Cockerel; 1st, 2nd and 3rd Hen; 1st and 2nd Pullet. The above winnings were made out of ten entries.

Box 60, R. No. 1 Mrs. C. D. Hubbard San Fernando, Cal.

Profit in the Poultry Yard

By Mrs. Frank Metcalf

We solicit short articles of a practical nature from the fancier and utility breeder, giving their experience with poultry. All inquiries pertaining to feed, management, disease and its prevention will be answered through these columns.

LINE-BREEDING VS. IN-BREEDING.

PEOPLE want to know what is the difference between line-breeding and in-breeding about this time of the year, and it is right that they should be enlightened. Now there is a difference, but it is about as hard to explain as the difference between Christian Science and Spiritualism, yet all will admit that there is a difference.

What is it? One says we are all spirit and tries to so spiritualize us that we are free from the ills of the flesh. The other says it is possible to materialize the spirits of our departed friends, so that we may have communion with them while in the flesh ourselves, and both have trouble.

Well, now, line-breeding is the scientific mating of closely related specimens with the object of perfecting certain characteristics in a particular strain of birds, and must be done by a specialist to be successful.

In line-breeding father is mated to daughter, mother to son, grandparent back to grandchild, and a table kept, or that is, a record of each individual, like a family tree, so that the males are raised from one family and the females from another without the cross-breeding of brother and sister and cousins. Charts showing how this can be done are published from time to time, or can be found in most books treating on the breeding of fine poultry.

In-breeding is another thing, as it is usually understood, and means that males and females from the same flock are mated indiscriminately together without any regard to whether they are brothers and sisters or cousins, and soon results in smaller and weaker chicks, and infertile eggs.

Where one has not time and patience to line-breed very carefully, fresh blood in the shape of new males should be used every alternate year, at least. One may safely use the same male two years in succession, but after that a new one should be substituted.

If one has an extra good strain of fowls and does not want to introduce fresh males direct, buy a new hen from some one who has as good or better stock than oneself, mate her with a fine male from one's own stock, and use the males from this mating with one's own full blood stock.

The females may be used with their father again, and thus two families built up, from which one can select and mate for improvement, according to the chart. Experiments like this are what make fanciers, and is one of the most fascinating studies one can undertake.

I once met a very learned Doctor, who experimented in animal breeding, and worked out theories he formed from his studies of the human race.

He had an idea that "first impressions were most lasting," and that matings lasted longer than most people believed, basing his opinion upon his observations. He said he noticed that a woman's first husband affected the children she bore during her whole life. He invented a system of animal breeding which he called "Crossing and Moving away" which was considered the "sensation of the century" at the time. He had a flock of white sheep and wished to put black faces upon them without spoiling other "points." He obtained a ram resembling his own in all respects but the black face, mated that ram with his ewes one year, and killed every lamb from that mating. The next year he mated his ewes back to a pure bred ram of his own kind, and behold! over half of the lambs had black faces, proving his theory correct.

Now he told me, if I let my chickens all run together until they matured, the cockerels would mark those pullets for a much longer period (if not for life) than I suspected. This seems a little far-fetched, but let us consider: The blood of the foetus and of the mother commingle during pregnancy, therefore she partakes of the blood of the parent through the unborn offspring during all this time, and how far-reaching this influence is, we cannot guess. There are more laws than Mendel's governing heredity, and we cannot hope to learn all in one short life, but I certainly did take more care about separating the sexes of my chicks after talking with this wise old doctor, and results repaid my trouble.—Mrs. Frank Metcalf.

CHICKEN CHAT.

Acorns for Hens.

I should like to inquire through your poultry department whether, in your opinion, the eating of live oak acorns by hens, would tend to prevent egg production. I moved here near Morgan Hill, the middle of last October; of course the moving of my hens stopped eggs for a few weeks, but a band of about 100 pullets soon began laying, and when getting 18 to 20 a day, they suddenly began to decrease, and about this time I noticed that they were devouring the live oak acorns, and up to the present time they have not got back to where they were in the number of eggs.

Another flock of older hens have begun laying. I notice as soon as the houses are opened, they gobble up every acorn which has fallen over night. I notice also, that some, at least of the pullets mentioned, appear to be lightly moulting. The whole flock look in a fit condition to lay.

Also, I noticed that several of my old hens when heavily moulting, apparently went nearly or quite blind. How can you account for that? My flock numbers about 325. They have free range, and are fed according to rule, and have an excellent appetite.

Would mention in regard to the blindness, that I could see nothing like soreness about their eyes, but they appeared just unable to see. —E. A. C.

Do not think the acorns were at fault about the laying, but believe the pullets did as many other pullets are apt to do, lay a few eggs and then take a vacation. It is provoking, but natural, especially, if they moult the least little bit. The blindness of the hens was probably due to moulting, and only of a temporary nature, was it not? If permanent, it must have been caused by some weed they encountered in their search after goodies on free range.

Believe when those pullets begin again, which will likely be soon, that they will make up for lost time, and the eggs will be better for hatching than if they had continued on duty all winter.

I have just had a letter from one of, if not the most successful poultrymen in the State, to the effect that his hens and pullets had not paid for the last four months. Some way this last winter has been a trying one for chickens.

* * *

Goose Requires Green Feed.

I have a goose which acts as if it were paralyzed in the back. It runs a little ways and then falls down with its wings out flat and quivers all over. It eats and drinks well. Has been that way about a week. A lady told me she had two that way, and she thought they got hurt in their heads.—Mrs. H. K.

I believe your goose has liver trouble, which causes symptoms such as you describe, and is brought on by too much grain, and not enough green food. A steady diet of wheat will cause it as quickly as anything, a goose being naturally a grazing bird.

One of "Cap Johns Orderly's" or an equally prompt acting pill will sometimes help such a case, but a change of food is necessary to effect a cure. Bran mashes, with plenty of grit and green food are called for, with grain used very sparingly for a while.

She may be egg-bound. In this case, sweet oil should be applied to the vent liberally until relieved.

DRESSING MARKET FOWLS.

Poultry intended for market should always be plucked, unless the market demands otherwise, as plucked fowls, as a rule, are more salable than those unplucked, says a writer in Petaluma Journal. They should not be given any food for a period of at least 24 hours before being slaughtered in order that the crop and intestines may be emptied. They should be given a small quantity of water just before they are slaughtered.

While some prefer to kill the birds by suspending them by the legs and with a sharp knife cutting across the roof of the mouth far back, thus severing the jugular vein, yet I believe that wringing the neck is the best method. This is easily done by grasping the legs of the fowl in the left hand and the head in the right, the back of the bird being upward and the top of the head in the hollow of the right hand. Hold the legs of the fowl against the left hip and the head strongly, at the same time bending it suddenly backward which will dislocate the neck near the head. Thus the fowl will be killed instantly. Then remove the head, after which the work of plucking should begin at once.

If two pickers work together they can pluck a fowl rapidly. First take out the quills in the wings and tail, then pull the remainder of the coarse feathers, strip the wings, as they cool most quickly; then the body and lastly the legs. In order to avoid tearing the skin, care should be taken to pull only small handfuls of feather at a time, as tearing the skin gives the fowl a very unsightly appearance.

The fowl should not be dipped in water under any circumstances. After all but the pin feathers have been removed the fowl should be taken down, laid across the knees and the pin feathers carefully removed. If to be sold undrawn the head should be washed free of blood, the wings folded close to the body and tied there and the fowl laid upon a table, breast downward, to cool, or it may be suspended with a cord, head down.

If beheaded and drawn, the head should be severed and the skin drawn over the bone and neatly tied there with a cord. Place the fowl upon a table, with its back downward, and remove the intestines from the rear.

Care should be taken not to break the gall bladder. Should the entrails accidentally be torn and their contents come in contact with the flesh, its interior should be washed out with cold water and the fowl hung up until it has become thoroughly dry.

Allow the carcasses to cool thoroughly, after which pack them neatly in clean boxes and they are ready for shipment. If the work has been neatly and cleanly done a good price is practically assured.

ARTIFICIAL INCUBATION.

For successful work it is necessary to have good incubators, good eggs, and good, common sense management. The same directions that apply to one make will not necessarily do for another. Neither can the same directions successfully fit all conditions.

But there are some matters that will generally apply to all incubators.

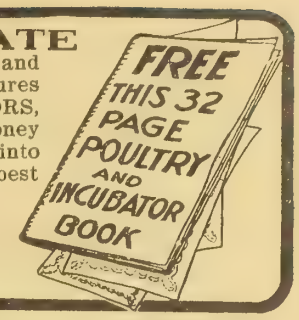
In the first place the machine should be strongly built of well-seasoned lumber. Next, it should be located in either a well-ventilated dry cellar, or in a double-walled room above ground.

The first proper step to be taken is to carefully follow the directions as given by the manufacturers. One or more hatches may be necessary to note whether the directions fit your conditions. If not, then there can be gradual changes made, as might be suggsted.

Important rules to remember are: Fill the lamps each evening and

BEFORE BUYING INVESTIGATE

IT COSTS NOTHING, write today for my FREE 148-page and 32-page SUCCESS incubator book. It contains valuable lectures on poultry and all about the celebrated SUCCESS INCUBATORS, and Brooders. The Success Incubator is certainly a great money maker; chicks that are hatched from the SUCCESS grow into money fast. The SUCCESS INCUBATOR is made of the very best material, is the most durable and the most easy to operate. We should be glad to send you one on from 30 to 60 days' FREE TRIAL. Write today for my FREE 1909 Incubator books. They may mean much to you. **E. E. McClanahan, 108-10-12 East Eighth St. Los Angeles, Cal.**



Excelsior Egg Food

Mr. W. W. Howard, the White Leghorn expert, is feeding Excelsior Egg Food exclusively. Mr. Howard's flock is noted as an egg producing strain. If you are not getting satisfactory results, try Excelsior Egg Food.

ExcelsiorScratchFood

Is just what you have been looking for. Give it a trial and you will never be without it.

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Los Angeles, Cal.

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NINETEEN kinds of baby chicks, turkeys, ducklings, goslings, etc. Send for our price list, gives full details and information. We ship chicks safely anywhere within 48 hours, no loss. We know how to hatch and pack chicks for shipment. We are booking orders now. Place your order early and be sure then to get exactly what you want. Can supply chicks in lots of 1 dozen to 30,000 every 21 days. Write us today. Visitors always welcome.

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Don't plant poor seeds—get the best.
Send for free catalogue and price list.
Also of the best

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Stop That Guessing

The

Los Angeles Incubators

Are now equipped with a moisture guage that will accurately register the moisture; relieves the operator of all guess work and assures better hatches than ever.

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WHITE LEGHORNS GREAT EGG PRODUCERS GREAT WINNERS

Bred from best American and imported stock. Great layers—lay while eggs are scarce and high Over 700 in a single day in December from 1000 hens. From Oakland's great show we carried off more ribbons than all competitors compined. Stock, eggs and baby chicks for sale also

BUFF ORPINGTONS Chicks and eggs from choice matings. Send for descriptive circular.

THE MODEL POULTRY FARM **BOX H** **IRVINGTON, CAL.**

WHY?

Do All Prosperous Poultrymen Use

Jubilee Incubators and Brooders

Our Catalogue A Will Tell You. It Is Free.

Jubilee Incubator Company ***Sunnyvale, Cal.***

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Healthy vigorous day-old chicks hatched from selected utility stock. White Leghorns especially. All other leading breeds hatched to order. Prices according to grade of breeding stock. Send your name with address on a postal card and we will send you our circular and prices.

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395 E. St. James Street
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2,000 Laying Hens
East San Gabriel Egg Ranch
S. C. White Leghorns and Barred Plymouth Rocks

We can fill orders promptly from our selected matings of utility bred stock, at $5 per 100, $45 per 1000. Our prize winning Leghorn, $2 per setting of 13. Won all first and all but one second, also silver cup for best pen at last Chutes Park Show.
San Gabriel car to Masonic Home, two blocks south to ranch.

SWANSON AND JOHNSON
San Gabriel, California

WHITE WYANDOTTES
BUFF COCHINS, CUCKOO BANTAMS

First prizes. Never beaten at a coast show
Cockerels cheap $2 and up. Trios $5 to $10. Hen and Runt pigeons $3. per pair.
HARRY McINTIRE
27 and D Streets **San Diego, Cal.**

White Rocks
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WHITE LEGHORNS

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THEY PAY
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THEY SHOW
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Makes Them Grow

COULSON'S SPECIAL DRY CHICK FOOD, during the five years it has been on the market has justly earned for itself its great reputation as a life-saver for little chicks by its special adaptation to their needs.

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FOR YOU TO BUY the many different articles composing Coulson's Special Dry Chick Food is quite impracticable; you could not be certain as to their quality for one thing, and the high cost of certain of them when purchased in small lots might lead to their being left out to the detriment of the chick.

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COULSON'S SPECIAL DRY CHICK FOOD can be fed exclusively to your little chicks for the first six weeks, at a cost of about four cents (4c) each; and what is of still greater importance, it will do all that can be done in the way of feed to bring them through that critical period of their lives in full health and vigor.

TO RAISE EVERY CHICK you hatch; to have fine, large, healthy chicks; to have chicks that will stand up and crow when eight weeks old; to raise chicks that you will be proud of, FEED COULSON'S SPECIAL DRY CHICK FOOD, THE LIFE SAVER.

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GERMAIN SEED CO., Distributing Agents, Los Angeles, Cal.

never use oil of less than 150 degrees test.

Always begin a hatch with a new wick.

Have the temperature of the egg chamber as near 103 degrees as possible, and keep the incubator away from the sunlight.

Test on the seventh and fourteenth days. Study the air cells of the eggs to determine if moisture or ventilation is needed.

After the fourth day turn the eggs night and morning, up to the eighteenth day.

Keep the burner clean from dirt, and scrape the charred part of the wick in preference to trimming it.

Never turn up the flame of the lamp so high that it will smoke.

In placing the eggs in the machine, have the large ends pointing the same way, and never add eggs after the hatch has started.

Cool the eggs after the fourth day, by placing the trays on top of the machine, and laying the bulb of the thermometer on a fertile egg. As soon as the temperature has fallen to ninety degrees, return the trays to the machine.

If the air cell of the egg is unusually large, add moisture; if small, give ventilation. The air-cell on the first test should measure a quarter of an inch from the middle of the large end five-eights inch on second test, and three-quarters of an inch on the nineteenth day.

Incubating white and brown shelled eggs at the same time in the same machine generally results in unsatisfactory hatches. The shells of the former are thinner than those of the latter, and consequently require different treatment.

After removing the infertile eggs, in order to have an even temperature for the eggs in the machine, spread out the fertile ones in the trays so that they will occupy about the same relative position to one another.

In selecting eggs for hatching have them of a uniform size, neither too large nor too small. Also reject thin-shelled eggs, and those having a ridge around them, or round and poorly shaped ones.—Petaluma Poultry Journal.

BREEDING PIGEONS.

The fancy for pigeons, as it is called, stands on a different footing in many respects to the business of breeding them for commercial or market purposes. Doubtless such things as pigeon-pies are not now utterly unknown. If you should ever feast on them you may wish to become a squab breeder, if for no other purpose than to supply your own table with this luxury. It is now a frequent dish upon the tables of the wealthy and connoisseurs of good eating.

To the sick and convalescent at certain seasons of the year they offer an appetizing and digestible food, highly recommended by the highest medical practitioners. A nice young fat squab is a dainty dish for the sick and afflicted, and the number that are killed and used for this purpose extends into the tens of thousands. The frequent use of them in place of wild birds in leading first-class hotels and high-priced restaurants is simply immense. The number bred and consumed for dainty food by lovers of high living is beyond estimate in the aggregate. In fact the business of market squab breeding is a growing and profitable one to engage in as a specialty, or in connection with other branches of stock breeding.

This is a business or a branch of stock breeding that can be conducted profitably by nearly all fowl keepers or farmers.

Few for Start.

To commence the business of breeding them it is only necessary to purchase a few pairs to start with, as in and in breeding does not really affect them; but at the same time it must not be carried too far; this can be prevented by purchasing a few extra male homing pigeons occasionally to cross with your young birds, which will keep up the vigor and vitality of your stock at a small cost. The amount of care and cost of keeping is small. They require cleanliness about their coops, etc., and if bred in confinement a good supply of sand sprinkled on the floor, plenty of fresh drinking water and a shallow tub for bathing in hot weather. Their feed consists of small, whole corn, wheat, rye, buckwheat, barley, peas and oats; a little hemp, canary and millet seed are also good for an occasional feed and some soaked stale bread is good while they are breeding their young, or as a change of food for the breeding stock.

To mate them for breeding it is best never to allow them to select mates, but pairing them with the selection of a large size male and a medium size hen will result in good vigorous young. To mate them is a simple matter, and it is only necessary to divide a medium size box with wire netting and place cock and hen in each separate compartment for a few days longer when they will usually be mated, and have a strong attachment for each other.

WHY FAILURES COME.

It is a common occurrence for prospective poultrymen to set up in business with insufficient capital; and it is ridiculous to assume, as many do, that an investment of $500 will insure an income capable of supporting a family. Invest that amount in any other business and try to live off the income and see if you can succeed. Start small and if you have only a few hundred dollars do not give up your other work, but gradually add to your poultry yard and in time it will grow into a business which will enable you to devote your entire time to it. Then again others select locations totally unsuited and they fail. Others think that there is no work to do and fail through neglect. Begin small; do your work well and gradually grow as you have more capital to add.

FINE FOR NESTS.

Mr. Wm. Nelson of Orland tells us that he has found the following described nesting places excellent:

"The best hens' nests are made from five-gallon oil cans, cut open on one side in the middle and to each corner and the edges turned up and pounded down, and then set in a frame so they can't get out. I have used them a long time, and find them cheap and handy."

A strong movement of home seekers is being made toward the Palo Verde section on the Colorado River, some distance north of Yuma. Over 40,000 acres of this fine land is desired by a group of land seekers. It is near the Blythe ranch and has nearly all been filed upon.

Santa Ana farming lands are rapidly being seeded to sugar beets.

Hatching Eggs

FROM

Quality S. C. White Leghorns, Mammoth Imperial Pekin Ducks, Golden Sebright Bantams, Black Tailed Japanese Bantams. All prize winners this season. Write for prices.

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Now is the time to hatch **BANTAMS**

Golden Sebright, Buff Cochin, and Light Brahma Eggs, $2 per 15. Prize winners.

H. E. Dillingham Box 67, San Gabriel, Cal.

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Cornichon on St. George Root.

In a recent issue you advised E. M., of Newport Beach to plant Purple Cornichon on Rupestris St. George.

This combination has been quite extensively planted here (Alhambra valley) and without a single exception has been a complete and disastrous failure.

St. George and Tokay, St. George and Muscat and St. George and most wine grapes do well here, so the fault of St. George and Purple Cornichon is not to be laid to the fact that the St. George is not in agreeable soil.—Thos. R. Hanna, Rancho de Martinez, Martinez.

Dog Wash—Vanilla Extract.

I have two valuable dogs that are badly infested with vermin. Kindly tell me how I may destroy them. How is vanilla extract made, from the vanilla bean?—R. T., Sonoma.

(1). Wash the dogs once a week with a solution of one teaspoon creolin to one quart of water. There are many dog soaps on the market which do good work. (2). Vanilla, in fine bits, 250 parts, is put into 1350 parts of mixture, of 2500 parts of 95 per cent alcohol and 1500 parts distilled water. Cover tightly, put on the water bath, and digest for one hour at 140 degrees F. Pour off the liquid and set aside. To the residue in the bath add half the remaining water and treat in the same manner. Pack the vanilla in an extraction apparatus, and treat with 250 parts of alcohol and water, mixed in the same proportions as before. Mix the results of the three infusions first made, filter, and wash the filter paper with the results of the percolation, allowing the filtered percolate to mingle with the filtrate of the mixed infusions.

Garget.

About a month ago I bought a cow which had been fresh two or three months. At times small lumps and strings came out with the milk from two teats, more from one than the other. Just before passing these substances, the bag above those teats becomes hard, then softens up, but not naturally, like the other side. What is the trouble, what is the cause, and what is the remedy? Is she liable to dry up soon? She gives less milk out of the worst teat now than when we first got her. She is a good cow otherwise.—W. F. R.

I fear you have failed to milk the cow clean every single time, and now have a little garget to contend with. Bathe the udder with hot water or rub it well with hot lard and protect from the cold with a sack covering. Milk clean every time and the trouble should quickly disappear. Certainly if the milking out is not thorough the cow will go dry.—M. E. S.

Pruning Malagas.

Can you tell us how to prune Malagas?—W. J. M., Coachella.

Where can I get some book on pruning vines, especially Malagas? Are they pruned to stake up, or the same as muscats, only somewhat higher, from young to bearing?—S. F. D., Exeter.

In the young malaga vineyard, training them to a stake from a year old will make an erect, straight growing vine. The first year's pruning is to cut them to a single straight cane. The second year's pruning, the central cane is left a foot long and tied up to the stake. The stakes are four feet long and driven into the ground a foot. Each year this center or leader is carried up a foot or more until it reaches the desired height of the vine. The height best liked is about three feet. The side spurs are shortened in each year. It is best to have only one stem or trunk to a vine. This heads the vines three feet from the ground with the lowest spur a foot from the ground. While the vine is young, if it is desired to have it very perfect it may have the lower shoots taken off from within a foot of the ground by rubbing them out. Be careful in leaving the spurs to do so in a way that will balance the vine all around. Stake with the four foot stakes just as soon as the vines are long enough to tie up. Prune to leave two to four buds on each spur of new wood. The spurs are left four to six inches long and eight to twelve spurs are not too many for a mature vine. When vines have matured they become strong enough to stand alone and then the stakes may be removed. —M. E. S.

The best information on pruning is The Pruning Book, by L. H. Bailey. It treats of trees as well as vines, but is not from a California standpoint.

Bacteria in Milk.

My cow is in good condition, seems perfectly healthy, is fed on best alfalfa hay and a pail of dry bran morning and evening. Gives large mess of milk, but after the milk stands 24 hours, there is in bottom of pan about one half an inch of thick, stringy, sticky substance like a thin sweet milk curd.—C. J. G., Santa Ana.

I should suggest the trouble was in the developing of the slimy bacteria. These appear in milk that is kept below the point at which the lactic acid ones naturally turn the milk sour. These bacteria are picked up by the cows standing in puddles and find the milk a favorable medium to grow in. Scald everything in hot water and then rinse the milk vessels in lime water. Try to keep the milk a little warmer or else very much cooler. These troubles in milk are nearly always outside the cow. —M. E. S.

Irrigating Grapes.

Will you please tell me how you would irrigate a Thompson seedless vineyard that is four years old. Ground not prepared in any way. Also what time or month most suitable for irrigating?

How do you prune a seedless vine. I have been pruning by leaving five or six canes as recommended by Prof. Bioletti, which don't seem just right. I have never been able to get more than four tons to the acre, more times, two tons or less. Consequently, it is hard to keep the "Wolf from the door," although I have 22 acres in vines.—S. W., Yuba City.

The description of conditions is not very full. If the water is on the land I should irrigate these vines this spring by running a deep furrow between the rows and soaking the ground well. Then as soon as pos-

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Besides all the choicer new and standard sorts. One hundred and thirty-five varieties described in our new

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of trees, roses and plants. We want all rose and plant lovers to have a copy; it's free, send for it today.

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25,000 Grafted and Seedling Walnuts from best selected seed and grafts. 25 kinds of Peaches, clean and well rooted; 20 varieties Apples; a choice stock of Royal 'Cots; 4000 Satsuma and all other leading Plums; Oranges, Lemons, Grapes, Palms, Roses and Ornamentals. Anything in the nursery line. A fine, well assorted, clean and thrifty stock. My personal attention is given to selecting best buds, grafts, seeds and cuttings to propagate from.

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This is a Fertilizer well adapted to produce a good, vigorous growth to your trees and vines, and the best quality of fruit in quantities that you desire, consequently paying you large interest on the money expended. Make a trial of this brand and you will use no other. Write for our pamphlet, ***"The Farmers' Friend,"*** for 1909.

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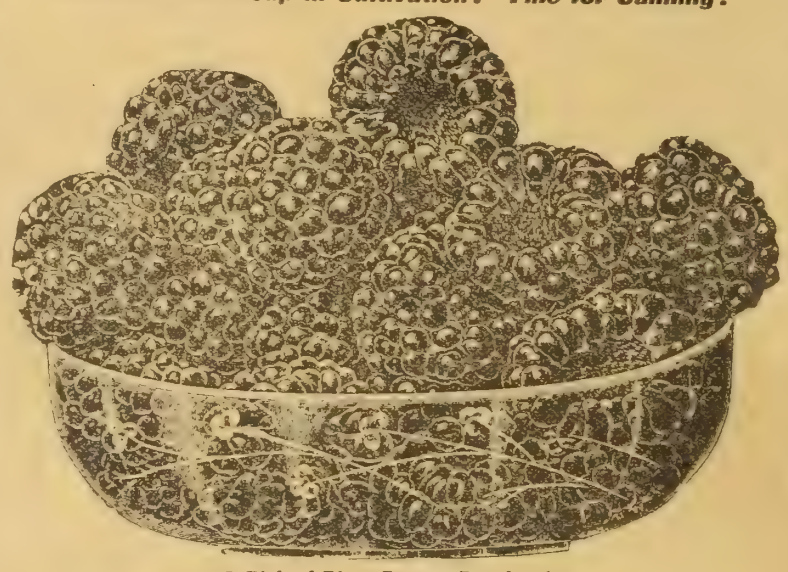
Dealer in All Kinds of Beekeepers' Supplies

When writing advertisers, mention Cultivator.

sible, throwing the earth into the furrows. If the harrow follows the plow at once in the vineyard, it will save much moisture from being lost. While this soil may be deficient in humus or in other necessary materials for vine growth, still I should not be discouraged over two tons to the acre on four year old vines. Staked vines do not reach their full maturity until six or seven years. Here we use three and four canes on Thompson Seedless. Prof Bioletti is a good authority and probably knows what your locality will stand, for Yuba soils are considered rich.

This past year the yield of grapes has not been heavy in many districts of the state. We have had in addition, smaller prices than usual. When the happy time comes that we have a law that forbids the selling of futures in food supplies then we will have only Nature to look to for the money. This year the selling short of raisins was done largely at low prices, the growers were firm in wanting a living price, so the eastern buyers were scared off and the market demoralized. We growers have enough in our struggle with Nature to do our part. We usually get left when we try to fight the combination of men who sit up at night, while we sleep, to hatch schemes of making money out of us.—M. E. S.

The Best Blackcap in Cultivation! Fine for Canning!



A Dish of Plum Farmer Raspberries

Plum Farmer Raspberry

Discovered years ago in a lot of plants received by us from Ohio, it was named in my honor by a friend of mine. You can rest assured that I would never have allowed it to be sent out under that name had I thought it anything but valuable.

It is the largest, most productive, best colored and most attractive blackcap in cultivation. The plants are models of growth, healthy and very vigorous. When not in leaf, they present a silvery bluish appearance. Plum Farmer Raspberry will succeed where other blackcaps fail. It is very early and ripens the bulk of the crop in a short time. The fruit is not jet-black, but of a grayish appearance, enormously large, sometimes measuring one inch in diameter.

The berry-growers in this locality have gone wild over it, setting it to the exclusion of all other blackcaps. It sells for highest prices, bringing as high as 12½ cents per quart right at the grower's door. It has created a furore among growers and excites the admiration of all when shown on the market.

This description is by the Plum Farmer. I wish all my friends to try this berry.

Plants Ready. Send for Catalogue.

A. Mitting, Santa Cruz, California

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LIME & SULPHUR SOLUTION

The well known REX LIME & SULPHUR SOLUTION manufactured by the California Rex Spray Company, at Benicia, is no longer an experiment. Of the thousands of customers that used it last year, we have scarcely a single report but what is in its favor.

It is the best known insecticide and fungicide; is a tonic to the tree; is prepared on scientific principles; is absolutely uniform; every barrel that is made at the factory being of just the same strength, namely, 33° solution, Baume test; is free from sediment; is ready for use in the orchard without having to be boiled; one barrel of 50 gallons makes 600 gallons of the strongest spray, and is by far cheaper, at the reduced price at which it is offered this year, than any farmer can afford to make a home-made, imperfect solution.

Ask you dealer, or address:

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Magnolia Nursery

A. R. Rideout, Proprietor **Whittier, California**

When writing advertisers, mention Cultivator.

Olive Oil Soap.

Can you give me a formula for making an olive oil soap for toilet use? —J. H. D., San Jose.

We note the following formula, but cannot vouch for its worth: Olive oil, 100 parts, solid potassium hydroxide, 21 parts; water, 100 parts; 90 per cent alcohol, 20 parts. Boil by means of a steam bath until the oil is saponified, adding if necessary a little more spirit to assist the saponification.

Measuring Water.

When water is running over the edge of a board without pressure in a 3-foot wide headgate, how deep should it be above the edge of the board to make one foot of water? How deep to make 6 feet? How shall I prevent birds from eating fruit buds on apricot trees?—A. K.

We do not know what you mean by one foot of water. If you mean on the miner's inch basis, or if by one foot you mean 12 miner's inches, that would be one question, or if you mean one cubic foot per second it would be an entirely different matter. One and one-half cubic feet per minute means one miner's inch. Again, the measurements cannot be accurately made or even approximately made measuring up from the edge of the board. The suction of the water as it begins to pour over the edge of the board makes the water of lesser depth at that point than it would be if measured at a more accurate place, for instance a couple of feet back from the edge where the water is perfectly quiet. If the water is at a depth of say one inch in the pool, and we mean by depth down to a point equal to the top of the edge of the board over which the water flows, then your three-foot headgate would be carrying approximately 20¾ miner's inches of water. But this question is too complicated to answer in this department with any definiteness whatever and we refer you to our issue of April 16, 1908, which gives table for weir measurement, giving miner's inches, also one for cubic feet, and with illustration as to how to make weir for this measurement. Your last question, regarding preventing birds from eating fruit buds is one which is most perplexing and even impossible to answer. Use the shot gun to frighten them away and kill a few occasionally, is perhaps the most satisfactory. Pieces of tin tied to the tree to hang loose so as to flutter in the wind, will often frighten them away. The use of poisoned fruit stuck up in the trees, or of poisoned water is very objectionable, because you kill fully as many of your friends as you do your enemies.

Brine for Olives.

Please give information how to make the brine for olives. That is, what should its strength be?—W. W. S., Ventura.

This depends on whether you mean for the first or final brine. You cannot put as strong brine on the olives when the lye is first removed as you can later for the reason that the fruit is injured if submitted to too strong a brine at the very first. The usual plan is as follows: After the lye is removed, use a very weak brine, changing once in two days. Replace this brine with a stronger one composed of four ounces of salt to a gallon of water and let stand two days. Then put in brine of six ounces of salt to the gallon for seven days. They will then stand a brine of ten ounces to the gallon for a couple of weeks. The last brine should contain 14 ounces of salt to the gallon and be made of pure boiling water, set aside to cool before pouring over olives.

Various Questions.

Please give me the name of a good corn for this location. I wish it for feeding to poultry. Is it wise to set a hen twice in succession? Can I graft Drake seedlings onto prunes, apricots, and nectarines?—L. B. S., Fair Oaks.

Any good dent corn should do well in your section, but to secure the best results, you will have to select from a strain which has borne well in the same section. However, the best you can probably do the first year is to get good seed and from that crop select your own seed for next year. Many poultry men follow the plan of setting a hen twice in succession, but to do this successfully the hen must be kept free from vermin or she will become so filthy as to become of little value and will probably leave the nest. We would not advise the budding of almonds on an old orchard of prunes, nectarines, etc. As a matter of fact this can be done, but we do not think the orchard will be valuable enough to justify the time of waiting. If the trees are removed and good almonds on almond roots planted, you would probably have better results.

Bean Harvesting Implements.

Please give best implements to use in planting and harvesting lima beans, where planted in a large way? Is there an implement which will plant peanuts? How far apart are the beans in the rows?—W. H., Covina.

An implement dealer can give you this information better than this office, and we think if you will write to those advertising in the Cultivator you will get this information direct. There are certain tools however, such as the bean planter, markers, and then for harvesting, the cutter, which is something like a weed cutter, which cuts off the roots of the ripe plants just under the surface of the soil after which they are thrown in small piles. Plant rows three or four feet apart and 18 inches or two feet apart in row, according to richness of soil, farther apart in rich soil. Peanuts are usually planted by hand.

Mildew.

What is best for rose bushes? They are badly infested with mildew on leaves and the buds do not develop.—W. H. P., Santa Ana.

The simplest treatment for mildew is the scattering of flowers of sulphur over the vine when the fog is on. If the leaves are moist, it will adhere and when the rays of the sun beat upon them later, the fumes destroy the mildew, or rather prevent its spread to other roses. Roses which are susceptible to mildew, must be sulphured quite often.

Redeeming Old Vines.

When you were at the Farmers' Institute at Reedley, in your talk you gave us, you brought up the question of redeeming old vines. Now I have a vineyard that is 17 or 18 years old, and the land seems to be rich enough; but the vines don't seem to throw out wood enough to bear the fruit and therefore I have short bearing.

Now in forming the new crown, how many shoots do you tie up? Did you realize an increase in production the first year, or was it in later years?—A. E. Mc.

In regard to the longer pruning of the muscats, while any new practice

may in later years prove wrong, still after four years of this work I cannot see that it is not a distinct gain. The old vineyard on this ranch that we were about to pull out has now a greatly improved condition, and we stand good to see it bear next year, a ton of raisins to the acre.

The canes, three, four or more, on the top, or as near as they can be gotten to the top, are left two or three times as long as in the old way. Tying them together, if possible and always trying to leave the top bud one that points inward. Then all the other spurs are completely removed and the suckers must be kept off to force the growth upwards. The thing to guard against, is not to get long bare arms, but to keep the vines with plenty of side spurs on these raised up tops. After the second year the prune should only raise them a few inches each year, say six at the most. The vines will at first show a great amount of leaves, and look darker green. To my mind this shows that it is the right way to do the pruning, for it is the way the vine wishes to grow.—M. E. S.

Egyptian Corn for Silo.

Is Egyptian corn a good crop to fill silos. The corn grows well in this section, and if drilled thick, makes a growth about four feet high, and the stalks are not large and woody as when grown not so thick.

Can I cut same corn and cure it, then put through feed cutter, and feed with silage instead of hay?—Subscriber, Winters.

We do not as a rule care greatly for Egyptian corn if either Indian corn or sorghum can be as readily grown. It will make a fair silage if grown as suggested. It must be siloed before the grain hardens and then abundance of water should be used on it, to make it heat up rapidly in the silo. The bane of silage making in California is lack of moisture to make the heating up a scalding process, rather than a burning one inside the silo. (2) Yes it can be fed for roughage if the stalks are small and well cured. It will not balance up a corn ration however; alfalfa will do it either as hay or as silage. Pound for pound, alfalfa hay will balance up corn meal, while ten to twenty pounds of alfalfa hay works well against forty of corn silage. I should prefer to leave the corn at least six inches long for roughage.—M. E. S.

Pumpkins and Citrons.

Which gives the most tonnage per acre, pumpkins or citron melons? Also what is the food value of each for milch cows? Which is the easier of culture and which is harder on land?—H. J. S., Escondido.

If you grow the old-fashioned cushaw, the tonnage of available plant-food is greater per acre than ordinary pumpkins or citrons. If equal amount of pumpkins and citrons are grown to the acre, the pumpkins are the most valuable. Now can you grow more tons of pumpkins to the acre? I can grow fully as much. Then the question is one of culture. The citron seeds can be simply put into unplowed ground, or into any rough place, and will grow making a crop, while pumpkins need well tilled soil and irrigation a couple of times during the season. Neither crop can be regarded as a soil exhauster, as they do not draw deeply except on the moisture. I have not an analysis of the citrons at hand, but from memory can say that they are more valuable for succulency than for anything else in adding to the feed. The seeds contain, of course, some stored-up nutriment. From practical feeding experiences, I should say that no one around here would give you pumpkins for less than two to six dollars a ton, and citrons can usually be had for the hauling.—M. E. S.

Fifth Teat.

A 24 month's old heifer about to calve has well shaped udder, four teats properly placed, and one small teat about an inch to rear of one back one. Should this extra teat be milked? Should the treatment be same with each succeeding calf?—C. M. C., Hollister.

Do not milk the supernumerary or rudimentary teat. Nearly all great dairy cows have two extra teats on the back of the udder and often the dairy sire will have them two inches long. It is regarded as a favorable mark of productiveness in a cow.—M. E. S.

The Harris Seed Co., of San Diego, is out with a 50-page catalogue of seeds and ornamental plants, also trees, which has a fund of information including planting tables, planting calendar, etc., which makes it well worth requesting. This firm is one of the newer ones to be introduced to Cultivator readers and is catering to the wants of planters in the Southern end of the state, who demand good goods in a way that is winning increased business.

Imperial Valley Lands have a greater earning capacity per acre than any land on earth. For price list and information address, James S. White Jr., and R. A. Holt, Holtville, Cal.

Wood soled Boots and Shoes. Boots $3.25; Shoes, $2.00 O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles, Cal.

Orange Seed Bed Stock
FOR SALE. ADDRESS
J. S. Killian, El Monte, Cal.
Phones: Sunset, 8x4. Home, Red 31, or,
L. C. Rice, Tropico, Cal.
Phone Sunset, Glendale, 263.

MORSE-SEEDS

Our new 1909 Catalogue contains a long list of the standard varieties of vegetable, flower and field seeds, plants and trees—also the best of the newer things of recent introduction. Mailed free on receipt of name and address.

There are some wonderfully attractive things offered, to which we call especial attention as follows:

Page 8 A new Muskmelon (Fordhook) and a new Pepper (Sweet Upright)
Page 9 A marvel in Tomato novelties (Dwarf Giant)
Page 22 A full list of Eastern grown Sweet Corn (especially sweet)
Page 30 A full line of Florida grown Watermelon (especially uniform and solid at the heart)
Pages 32-33-34 Our own grown Onion Seeds (the best in the world)
Page 52 A page of Burbank's Specialties—16 varieties of beautiful flowers, all grown by Mr. Luther Burbank on his own grounds and under his personal selection at Santa Rosa.
Pages 74-75-76-77-78 All about Sweet Peas—novelties—collections—a preferred list—all grown by ourselves—the largest growers in the world.
Page 80 The wonderful new Rose from France (The Lyon Rose)
Page 83 Other new Roses.
Pages 93-94-95 A very large assortment of Eucalyptus Trees in boxes or pots (note the photographs of the most important kinds on page 94)
Page 106 A great New White Dahlia (Mrs. Morse)

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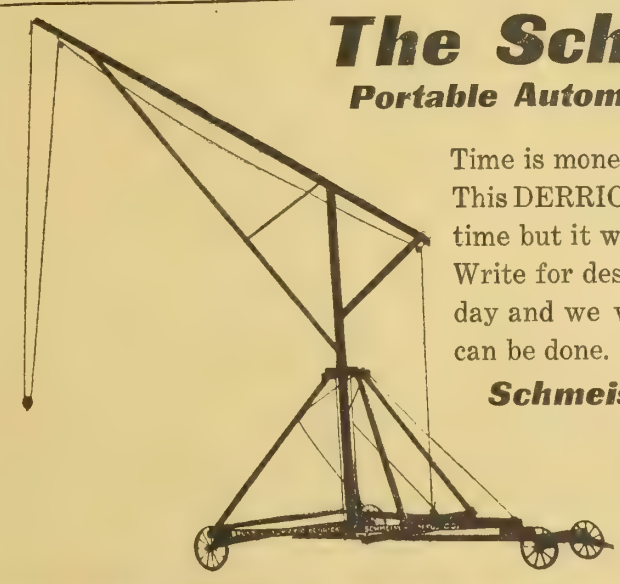
Portable Automatic Derrick



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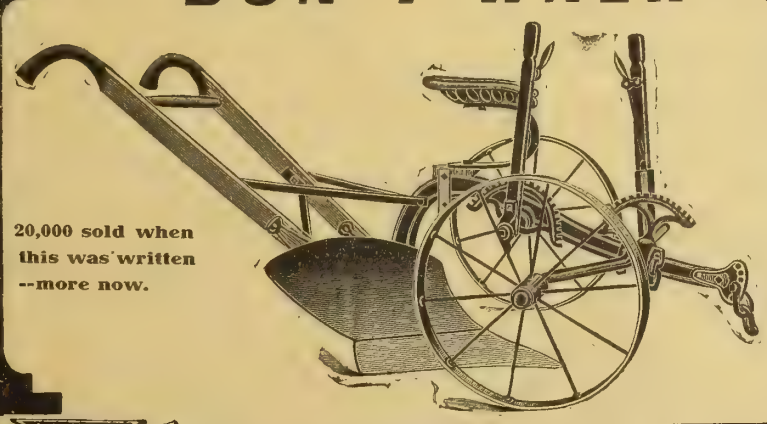
DON'T WALK---RIDE!



20,000 sold when this was written --more now.

Both the man who looks for thorough efficiency and the man who makes price a deciding power, is pleased with the

Banner Riding Attachment

This all-service implement converts any kind of walking plow or harrow into a perfect riding implement. A wrench is the only tool needed.
Has a high lift and turns square corners, left or right.
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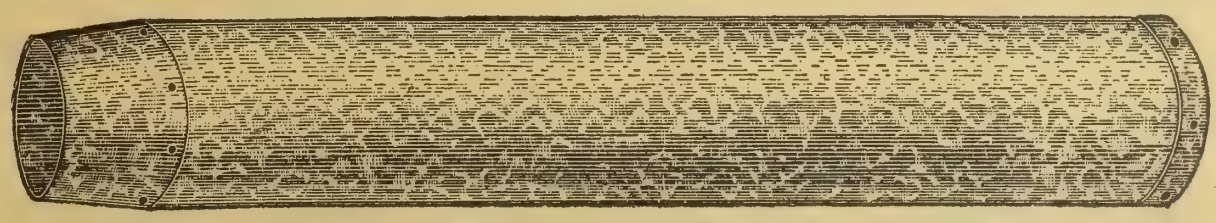

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Exclusively a Savings Bank whose policy is for ***Conservatism*** and ***Safety,*** the result of ***Fifty-One Years' Experience.***

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Founded June 18, 1862 **Northwest Cor. California and Montgomery Sts., San Francisco**

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Angle Lamp

The Light That Never Fails

Thousands in use all over the country. A good light is the greatest pleasure and the first necessity of every home.

The only lamp on the market that is sold under an absolute guarantee.

Remember, the light from Kerosene is the light science has agreed upon as being the purest and best, because it is soft and mellow and restful to the eyes.

Here are a few of The Angle Lamp Merits:

NO UNDER SHADOW. NO SMOKE, NO ODOR, LITTLE HEAT. GREAT ECONOMY—COST LESS TO BURN than an ordinary lamp. As easy to operate as gas or electricity, and better than either. ABSOLUTELY SAFE under all conditions. Lighted and extinguished like gas. Burned HIGH or LOW like GAS without a trace of odor. And a BRILLIANT, soft, steady, shadowless light—but this you will have to see to appreciate.

The lamp as shown in cut burns 22 hours on 3 quarts of oil.

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Boesch Lamp Co., 1135 Mission St., San Francisco

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Our graduates make $6 per day after 3 months instructions. You can enter at any time.—No previous knowledge required.

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The Barker Portable Cottages Bungalows, Garages, Tent and Poultry Houses

These houses are correctly built of selected material and are so different from the ordinary portable houses as the aim has been to make them look like a permanent structure built on the ground. They have stood the test of years and are conceded by experts to be the best, cheapest and most practicable portable house made. Please investigate before purchasing or building. We also manufacture sanitary poultry houses of our own designs. Write or call at office and factory, corner of Topeka and Alameda Streets, Long Beach car line.

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Madary's Supply House

Is the Largest West of the Rocky Mountains

For Beekeepers

All kinds of bee supplies, orange shook, packing boxes, berry crates, grape baskets, etc. The best goods and the lowest prices. Personal attention to correspondence and prompt attention to orders.

Warehouse and Salesroom, 733-9 Aliso Street
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Household Department

A RHYME OF THOMAS THE DOUBTER.

When the Master had finished the story
Of the sower and the seed,
And had showed His disciples the lesson
Of rocks and wayside and weed,

Then up spoke Thomas the Doubter,
And his brow was heavy with thought—
He had seen a darker problem
In the lesson that was taught.

"Master," said Thomas the Doubter,
"When the seed sown is the Word,
I can see the meaning right plainly
Of the parable we have heard.

"But, Master, say that the sower
Were God and the seed were men,
And some of them fell by the wayside,
What were the lesson then?

"For I see men daily, my brothers,
Like the seed of which you spoke,
And among the thorns fall many,
And the thorns spring up and choke.

"And some of them, good Master,
Fall where the soil is scant,
And perish there for the absence
Of the life for which they pant.

"It is easy," said Thomas the Doubter,
"For those on good soil cast,
For they have their joy of living
And the harvest at the last.

"But those who fall by the wayside,
In thorns and on stony ground,
Are they like the seed grain scattered
By a careless hand around?"

But the Master was silent and mournful,
And His brow was furrowed with thought,
And there lay on His soul a burden
Which Thomas the Doubter had wrought.

—William Herbert Carruth.

AN IDEAL RAILROAD.

THE engine of the fast mail snorted and wheezed down the grade and whistled half a mile from Pegleg Whackem's farmhouse.

Pegleg was going to town that day, and he looked out of the window in the direction of the whistle.

Pegleg got a broom and tied a red shirt on the end of the broom handle.

"Go out and flag it, Lindy, and tell the engineer Pegleg Whackem's going to town and wants him to wait a minute."

Lindy scampered out and stood in the middle of the track, waving the red shirt from the broom handle. The whistle tooted twice, and the engine came to a stop in front of Pegleg's pump.

"Well?" said the engineer, thrusting his greasy cap and head out of the cab window.

"Pop wants to go to town," said Lindy, dragging the red shirt along the track as she went up to the engine. "He wants you to wait a minute. He ain't got his boots greased yit, and ma's ironin' him a white shirt."

"All right," said the engineer, gruffly.

"How long'll it take, do you think?"

"Oh, mebbe half an hour," said Lindy.

The engineer lay down on the grass, glad of the chance to rest.

"This is what I call railroadin'," he muttered, sinking to sleep beneath the shade of a spreading elm.

The fireman drew a cup of water at the pump. Passengers alighted from the fast mail and gathered wild flowers by the way.

An inquisitive fly awakened the engineer and he looked at his watch. Then he looked over where Pegleg Whackem was tugging at his boots.

"Hey Pegleg!" he cried. "Ain't you ever comin'? I got passengers on this train an' they want to get to the city. If you ain't ready in ten minutes more I'll go an' leave you."

"I can't git this doggoned boot on," explained Pegleg, tugging till he was red in the face. "It's got wet and shrunk, I guess."

"Well I ain't goin' to wait for your boots to dry," said the engineer, getting on his feet. "I've waited half an hour for you now. We've got fast freights on this road an' we can't be everlastin'ly knockin' them out. I'm goin' to pull out."

"Oh, you air, air you?" queried Pegleg, hotly. "Well, I guess you ain't goin' till I'm aboard, or by ginger I'll see the directors of this road in jail, sure as my name is Pegleg Whackem. You don't seem to understand that a railroad is run for the accommodation of the public. Times ain't what they used to be, when your doshdanged fast mail gave two toots and was from Peters' store to Rhodes Crossin' without stoppin'. We got some legislation, now, and the people are runnin' th' railroads—not a lot of overfed directors. So you jist wait right where you are."

"Well there ain't any law requirin' me to stay here all day if it should take you that long to grease your boots," declared the engineer, with surly disregard for the public convenience.

"Oh, there ain't, ain't there?" retorted Pegleg, rubbing the outside of his boot with a piece of soap. "Well, you jist wait till I git my copy of the revised statutes of the United States, and I'll show you whether there's any law or not." He strode into the house, with a flopping boot on one foot, returning with an immense volume, which he bore out to where the engineer was standing, and thumbed over till he came to a section encircled with a pencil mark. "There, darn you, read that!" he said. "I calculated to go to town today, and I jist looked up th' law to see what rights I had, and found 'em all set down here. It's fine and imprisonment, Mr. Engineer, if you go off an' leave me before I git this boot on, an' git on that train, an' I'll have the law on you and your whole kit an' caboodle of directors."

The engineer read the statutes slowly and with great care. Pegleg tugged at the refractory boot meantime.

"I guess you're right, Pegleg," the engineer admitted, handing back the revised statutes. "The law seems clear enough."

"You bet it's clear, an' it shows the people got some rights as well as the railroad," said Pegleg.

"I'd like to git into the city before mornin'," said the engineer. "I wish you'd hurry as much as you can, Pegleg. My passengers are gettin' nervous." "Let'em git nervous retorted Pegleg. Ain't they all got nosegays? What more do they want? Mebbe they think because I'm a farmer I ain't got no rights, but I bet I know the law better than they do. I got 26 pounds of butter to take up to the city, an' I lose two cents a pound on it if I don't git it there on this train, an' I ain't goin' to lose no such sum as that jist because the fast mail wants to make a speed record. Git a holt of that boot strap, won't you, an' see if you can't help me git this boot on."

They tugged unitedly, and the boot came on. Pegleg sighed with relief and the engineer climbed into his cab.

"Now, jist as soon as I git my white shirt on an' my butter salted on top I'll be with you," said Pegleg, returning to the house.

In five minutes he reappeared with his butter crock in his arms. Entering the coach he took two seats for himself and one for his butter, and the fast mail journed on.

Pegleg looked out of the window contentedly. "This is what I call gittin' th' railroads properly regulated," he soliloquized.

SAFETY OF THE STUPID.

"Bliggins says that he has no regrets for anything he ever said."

"Yes," answered Miss Cayenne, "that is a satisfaction enjoyed only by people who never say anything of the least importance."—Washington Star.

Th' prettiest tassels don't always hide th' biggest ears of corn.

About the House

The Household Department has a new feature this week which will remain for a few weeks at least and from the number of helpful hints for this issue, we hope it will continue many weeks.

The home keeper who writes the hints and who will have full charge of the department sends her hints under the name of "Elbepe." She is a home maker who will be pleased to get in touch with other home makers who have hints of value.

FOR the woman with "nerves," out door air, out door pleasures and out door work are the best medicines she can use—and these can be had without cost. The busy wife and mother who is cook and nurse and seamstress shakes her head doubtfully and wonders where the time is to be found for any out door employments. When the in-door work that is actually necessary is done, or partly done, the mother's strength and time are so nearly gone that the idea of one thing more is overwhelming. But the old proverb, "where there is a will there's a way," should be brought to mind and perhaps the way may be found.

One of the busiest women I ever knew—or perhaps I should say the one who by all the rules should be the busiest—told me that every day, no matter how much work there was to do if she was not sick in bed, she managed to spend some time out of doors. If there was no time for a walk or drive, if she had work that would occupy all her time, then the work was taken out of doors. Her wash tubs were carried out (she did not have the stationary tubs,) and the tiresome rubbing and rinsing and wringing were done in the fresh air under the blue sky. Her churning was usually done on the screened porch; vegetables were prepared or sewing done outside the house. It is easy to roll the sewing machine out of doors and when the weather is pleasant the sewing is not nearly so tedious if it is done with an accompaniment of birds and flowers and sunshine.

Needless to say that the children of this sensible woman I have been talking about are happy and strong and rosy cheeked, for they have been brought up on plain food and fresh air and have always had the care and companionship of a mother who has kept her "nerves" under control in spite of hard work, little money and hard cares. What woman has done another may do.

So much is said of the "left overs" in "domestic economy society" nowadays that only a new and easy way of using these troublesome factors in every household is welcomed. For, to have the reputation of providing well for your family by "setting a good table" you must give value received, either in money or time, and to use the "left overs" often takes more time than they are worth. Don't think I advocate throwing the "left overs" out of the window or setting the ragged remnants of a roast on the table for two or three meals; but I do think it is best for the average woman to practice the "simple life" in making over the remnants.

A meat pie is a wholesome and toothsome dish and one that is not long in the making. Cut the cold meat into small pieces and place in a kettle with any cold gravy you may have, a bay leaf and a little parsley, and enough water to more than cover the meat. Place on the stove and cook until the meat is very tender; add more water from time to time if necessary. Season to suit your taste, or what is more important, to suit the taste of your family. Add a little flour stirred up in a cup of cold water to thicken the water around the meat to the consistency of cream. Be sure there is plenty of this gravy for many a meat pie is spoiled because it is "too dry." Pour the meat and gravy in a baking pan and cover with a biscuit dough made with a little more shortening than for biscuits. Place in the oven and bake until brown. If you should have some cold mashed potatoes on hand beat them up with a little milk or cream, a pinch of pepper and salt, and use them instead of the biscuit dough. Make the layer about an inch thick and dot with little pieces of butter. Bake about twenty minutes or half an hour.

A dainty for the children's lunch basket is made by washing and stoning some nice dates, then rolling them in powdered sugar. Lay away to dry for a few hours and you will find that a handful of these will take the place of cake for the school lunch.

And here is a "don't." Don't allow the little girls to wear shabby Sunday finery to school. A neat print or gingham dress is much better in every way.

For people who like bananas and chocolate, a dessert is quickly made by peeling the bananas and rolling them in grated chocolate and powdered sugar. Serve with whipped cream flavored with vanilla.

IS OR IS NOT DANGEROUS.

"Railroad casualties receive such wide publicity," said an insurance man yesterday, "that there is a common belief on the part of the public that one is more liable to accidents while traveling than when living the simple life in the confines of his home.

"As a matter of cold fact, statistics show that accident insurance companies pay more losses to people who get injured in their own homes or on their own premises than they do to people hurt in railway accidents. Insurance companies pay more money to people who get hurt hanging pictures or taking stoves apart than they do to victims of head-on collisions. It sounds strange, but it's the truth."—Kansas City Journal.

WITH PERFECT EASE.

The art photographer had visited the farm. "I want to make an exhaustive study of this particular bit of landscape," he said, "and would like to have your hired man retain his present position on the fence there. Can he sit still?"

"For days at a time," replied the farmer.—Cleveland Plain Dealer.

HUSTLE IN LIFE AND DEATH.

The American grows quickly, works quickly, eats quickly, makes up his mind quickly, gets rich quickly and dies quickly. He is even buried quickly.—Paris Revue.

The Wm. H. Hoegee Co.
Incorporated
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Greatest Sporting Goods House on the Pacific Coast

We extend a cordial invitation to those who may not be able to obtain certain goods from their dealers to try our mail order system. We issue a number of catalogues illustrating the goods we manufacture or handle, and will be glad to mail you any of them if you will mention line of goods interested in.

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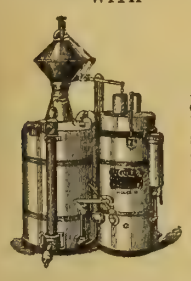
Tents, Awnings, Stack Covers, Irrigating Hose, Corduroy and Khaki Suits, Picking and Feed Bags, Ammunition Pouches, Gun Cases, Scabbords, Etc.

Malthoid Roofing

Mr. W. T. Somes, Proprietor of Bimini Hot Springs Hotel, Los Angeles, Cal., U. S. A., writes as follows: "Our hotel building, a flat roofed structure covered with Malthoid Roofing, is situated quite near the large Bimini Bath Houses that burned so fiercely the night of November 15th. The wind carried the blazing shingles and red hot cinders in showers to my building, where they simmered on the Malthoid Roofing and went out, doing no damage beyond a number of small blisters raised on the surface of the roofing. We have had one rain since the fire and the roof is tight."

The Paraffine Paint Co. San Francisco California
E. G. Judah, General Representative, Security Bldg, Los Angeles

Light and Cook with Colt Trade Mark Acetylene



Favor us with an inquiry concerning Colt Acetylene. We shall take pleasure in sending you free of charge our excellently compiled 44-Page Catalogue containing complete and instructive matter regarding piping, fixtures, stoves and burner pertaining to this wonderful and inexpensive lighting system.

Fowler Shankland, Pacific Coast Distributor
204 Severance Building
Cor. 6th and Main, Los Angeles
Phones: F7514; Main 4830

$7.98 Dresses A Man

For $7 98 we will send you the following: one Fancy Worsted Blue or Black Thibet Suit of Clothes (state color), one Merino Suit of Underwear, one pair of Best Socks, one Fancy Sunday Shirt, one collar, one beautiful tie, one strong pair of Suspenders, one pair of Donga $5 00 shoes. **Send no money.** We will ship you all of the goods to your city with the privilege of seeing them before paying one cent, and if not found in every way as represented and what your home dealer would charge $20.70, return them to us and we will pay all charges.

	Merchant's Price	Our Price
One Fancy Worsted or Thibet Suit of Clothes, state color wanted	$12.00	$5.68
One Merino Suit of Underwear	1.50	.58
Good Pair of Socks	.35	.07
Good Sunday Shirt	1.00	.37
Best Collar	.15	.04
Beautiful Tie	.35	.12
Strong Pair of Suspenders	.35	.14
Pair of Donga $5.00 Shoes	$5.00	.98
	$20.70	$7.98

Freight paid if full amount of cash is sent with the order to any city in the United States. We have 1,000,000 of the above bargain lots which we are absolutely positive will not last more than 30 days; **Order today.**
Free Clothing and Dry Goods Catalogue, Grocery List, Etc.
DEERING MERCANTILE CO., 60 Wabash Ave., Chicago

EVERYBODY can have a private **Billiard Room.**

No special room, or much money required for my Portable Billiard and Pool Tables, and yet all the enjoyment of a Table that weighs a ton and costs a Fortune. Catalogue?

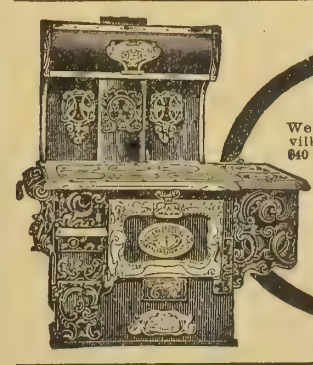
C. Ridderhof, Laughlin Bldg., Los Angeles

$16.30 buys this handsome six-hole Nickle-Trimmed Cast Range direct from the Manufacturer

without high shelf. With high shelf, just as shown in the cut, $19.97; large oven, six cooking holes, best quality of iron. Burns coal or wood. Handsome nickle trimmings. OUR TERMS are the most liberal ever made. You can pay after you receive the range. You can take it into your own home and use it 30 days. If you don't find it exactly as represented, the biggest bargain you ever saw you won't have to keep it.

Write today for our beautifully illustrated Stove Catalogue No. 101-C. A postal card will do it. Don't buy until you get it.

P. F. Ross & Co.
268 Market St. San Francisco, Cal.



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360 DAYS APPROVAL

direct from our factory at actual factory prices. No stove or range has a higher reputation or gives better satisfaction. You run no risk. You save all dealers' profits. We pay the freight.

Send Postal For Catalog No. 508
and see list of towns where we have satisfied customers.
Kalamazoo Stove Company, Mfrs., Kalamazoo, Mich.
Our patent oven thermometer makes baking and roasting easy.

SECOND HAND PIPE

We will sell you pipe that can be used for any purpose. ***Satisfaction guaranteed*** or money returned. We handle all sizes of standard pipe and casing. Shipments made on same day as order is received. Price of pipe is low now. Write for our prices.

Pacific Pipe Company
S. W. Corner Howard and Main Streets, San Francisco, California

The Produce Markets

Los Angeles Markets

LOS ANGELES, Jan. 20, 1909.

Butter.

Butter prices have received a great boost owing to the stormy weather of the north causing a shortage of shipments. Storage is practically all cleaned up and the extremely short supply forces prices out of sight. Many dealers are quoting at 77½ but really selling at 80. The lower quotation is made for use with the northern shipper.

Produce Exchange wholesale quotations are as follows with actual selling price to the trade 2½c advance on Extras.

Creamery ex per roll	.80
Firsts	.70
Eastern extra per roll	.70
Cooking	.23@25
"Butterine"	.16@20

Cheese.

Southern California Anchor	.17
Northern fresh	.16½
Longhorn	.19
Eastern singles	.16½
Cheddars	.17
Swiss	.16½
Imported Swiss	.28
Daisy	.16
Oregon	.16½
Limburger	.17@19
Twin	.15½

Eggs and Poultry.

Buyers seem to have combined to pound down the price of eggs arbitrarily for the supply is short of the demand. Easterns are being shipped in at a loss and yet the dealers seem to control and force prices down. If it can control, prices will be found lower. It seems to be simply a case of shearing the producer.

Eggs local candled	.37@38
Eggs case count buying price	.24
Storage selected	.33@34
Eastern storage short time	.37@38

Dealers pay for live stock.

Hens per pound	.14@16
Young roosters per pound	.18
Fryers	.20
Broilers per lb	.22
Roasters	.15@16
Old roosters	.8
Turkeys	.16@20
Geese	.15@16
Ducks	.15@16
Squabs	.1.25@1.75

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs from 175 to 200 pounds	6¼ @6½
Prime steers	4¾ @5
Heifers	.4@4¼
Calves per pound	.5
Sheep ewes per head	.3.75@4.00
Lambs per head	.3.00@3.50
Wethers	.4.50@5.00

Potatoes.

Wholesale prices are:

Sweets per ctl	.1.50
Burbanks, local	.1.75
Burbanks northern	.2.00
Sweets choice	.1.25
Early Rose seed	.1.75@2.00
White Rose	.2.00
Highland fancy	.1.50@2.00
Coast	.1.65
Salinas	.1.90
Oregons	.1.75@2.00

Onions.

Wholesale quotations:

Australian Browns	.1.75
Globes	.1.50
Garlic	.12

Vegetables.

Artichokes per doz Northern	1.00@1.25
Beets per doz	.30@40
Bell peppers per lb	.20@25
Beans string	.15@20
Beans Limas per lb	.8@10
Brussels sprouts per lb	.11
Cabbage Red per lb	.3
Cabbage sack	.1.35@1.50
Celery per crate	.2.75@3.00
Chili per lb	.16
Chili dried	.9@12
Chicory per doz	.30@40
Cucumbers per doz hot house	40@1.50
Cauliflower per crate	.1.00@1.25
Carrots per doz	.30@40
Egg plant per lb	.8
Green onions per doz bunches	10@15
Horseradish per lb	.12
Lettuce per crate	.75@90
Lettuce choice	.75
Mushrooms per lb	.35
Peas sugar per lb	.7@8
Parsley	.15
Parsnips	.35@40
Rutabaga per doz	.40
Rhubarb	.65@75
Radishes per doz	.15@20
Salsify	.40
Summer squash per box	.1.00@1.25
Spinach per doz	.10
Turnips doz bunches	.30@40
Tomatoes lug box	.50@75

Citrus Fruits.

Navels fy	.2.00@2.25
Navels ch	.1.00@1.25
Tangerines	.1.60
Grapefruit seedless	.3.50
Grapefruit seedlings	.2.00
Lemons fy	.2.00
Lemons choice	.1.50
Limes per basket	.50

Fresh Fruits.

Wholesale prices on the market are:

Baldwins 4 tier	.2.00
Bellflowers	.1.15@1.20
Newton Pippins	.1.50
Fall Pippins	.1.50
Colorado Jonathans	.2.50
Red Pearmains	.1.35
Spitzenberg	.2.00@2.50
Grapes Red Emperors	.1.50
Guavas per lb	.6
Cornichons	.1.50
Pears lug box	.2.00
Persimmons per box	.1.50@1.75
Pomegranates per box	.1.75
Strawberries per box	.12½@15
Raspberries	.25

Dried Fruits.

Wholesale prices are:

Apricots	.9
Evap. apples fy per lb	.6½@7
Figs loose white	.5
Figs blk	.5
Peaches in boxes	.7½
Peaches sacks	.5½
Pears	.9
Nectarines	.9@10
Prunes 30's to 40's boxed	.8½
Prunes 40's to 50's	.7½
Prunes 50's to 60's	.7

Beans Dried.

Wholesale prices are:

Limas per ctl	.4.50
Pink No 1	.3.00
Lady Washington	.4.25
Small white	.5.00
Black eyes	.3.50
Garvanzas	.4.50
Lentils	.7.00@8.00
Bayou	.3.50

Nuts.

Almonds IXL per lb	.14
Almonds choice	.11
Pecans polished	.12@17
Peanuts Virginia	.6½
Peanuts California	.5
Walnuts No 1	.15
Chestnuts	.8@8½

Honey.

Wholesale quotations:

Extracted water white	.7½
Extracted Light Amber	.7
Comb W W	.15
Comb white	.15
Beeswax	.30

Hay.

Prices paid to producers f. o. b. Los Angeles are as follows:

Barley No 1	.17.00@19.00
Barley No 2	.15.00@17.00
Alfalfa northern per ton	.14.00@15.00
Alfalfa local	.15.00@17.00
Tame oat No 1	.18.00@20.00
Wheat No 1	.16.00@18.00
Wheat No 2	.14.00@16.00

Grains.

Wholesale selling price f. o. b., Los Angeles.

Wheat new per ctl	.1.90
Kaffir corn	.1.80
Corn Eastern sacked	.1.80
White oats	.1.85
Seed Rye	.1.25

Feed Stuff.

Wholesale selling price f. o. b., Los Angeles:

Cracked corn	.1.85
Shorts	.1.80
Bran	.1.65
Oil cake meal	.2.50
Feed meal	.1.90
Rolled barley	.1.65

HE HAD A FUZZY FEELING.

In the soft twilight of a summer afternoon mother came upon Young Hopeful standing in a brown study by the greenhouse door. His hands were clasped before him and his lips were dejectedly parted, says Harper's Weekly.

"Why, what's the matter, lamb?" mother asked, bending over him.

"I'm finking, muvver."

"What about, little man?"

"Have gooseberries any legs, muvver?"

"Why, no, of course not, dearie."

A deeper shade fell athwart dearie's face as he raised his glance to her.

"Then muvver, I've swallowed a caterpillar!"

HIT AND HOME RUN.

Maud—I suppose you made a hit with that big red hat in the country.

Belle—Hit! I should say so. It struck the bull's eye the very first time I wore it.—Boston Transcript.

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

San Francisco Markets

SAN FRANCISCO, Jan. 19, 1909.

Butter.

Butter has advanced strongly during the week and is now quoted at 38½ for extras and offers at that usually refused because of actual shortage.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras per lb	.38½
California firsts	.33
California seconds	.27
Ladles extra	.23
Storage Cal ex	.31

Cheese.

California young American fy	.16½
Firsts	.15½
California flats fy	.14
Firsts	.13½
Seconds	.11½
Young American Oregon fy	.16
Eastern N. Y. Cheddars fy	.17
Oregan flat fy	.14

Eggs and Poultry.

Eggs advanced during the week to 47½ but on Monday declined to 47 where they now stand with firm market.

Official quotations of the S. F. Wholesale Dairy & Produce Ex. are:

Fresh ranch extras	.47
Eggs first per doz	.46½
Eggs second	.42
Pullets selected	.44
Eastern Storage ex	.43
Eastern firsts	.42
Eastern seconds	.37½
Hens per doz	.3.50@5.50
Hens extra	.7.00@9.00
Young roosters	.6.00@7.00
Old roosters	.4.50@5.00
Fryers per doz	.6.00@7.00
Broilers per doz	.4.50@5.50
Geese per pair	.2.00@2.50
Goslings per pair	.1.75@2.00
Ducks young	.6.00@8.00
Live Turkeys	.20@25
Dressed Turkeys	.24@26
Pigeons young	.2.00@2.50

Live Stock.

San Francisco prices gross weight:

Steers No 1	.4½ @4¾
Do second quality	.4@4¼
No 1 cow and heifers	.3½ @3¾
Second quality	.3¼
Hogs 100 to 130	.5¾
Hogs 130 to 250	.6@6¼
Rough heavy	.4½ @5
Calves per lb	.4@5
Lambs spring	.5¼ @5½
Wethers No 1	.4½
Ewes No 1	.4

Potatoes.

Potatoes have advanced and are now selling well on a strong market.

Wholesale market quotations:

River white fy sacks	.1.25
Salinas Burbanks	.1.55
Sweets per crate	.1.75@2.00
Oregon Burbank	.1.35@1.50
Lompoc Burbanks	.1.60@1.65
Early Rose seed	.1.25@1.30

Vegetables.

Wholesale quotations:

Bell peppers per lb	.15@20
Brussels Sprouts	.46
Celery per doz	.40@50
Celery per crate	.90@1.00
Cucumbers per doz	.1.50
Chili peppers per lb	.4@5
Egg plant per lb	.15@20
Green peas per lb	.6@7
Mushrooms per lb	.5@8
Marrowfat squash per ton	20.00@22.50
Squash per box Southern	.1.00@1.50
Onions green per box	.70@75
Okra per box	.1.25@1.50
Rhubarb per box	.1.25@2.00
Tomatoes box Los Angeles	.1.25@1.50
String beans	.10@17½
Wax Beans	.10@12½
Garlic new	.8@10

Onions.

Oregons	.2.00
California's	.1.75

Citrus Fruits.

Navels fy & large sizes	.2.25@2.75
Tangerines crates	.1.25@2.00
Mandarins	.1.35@1.60
Grapefruit seedless	.2.50@3.50
Grapefruit seedlings	.75@1.25
Lemons ch	.2.00@2.50
Lemons fy	.2.50@3.25
Limes	.4.00@5.00

Fresh Fruits.

Bellflowers	.85@1.00
Bellflowers No 2	.50@65
Spitzenberg	.1.25@2.00
Newton Pippins	.85@1.15
Ben Davis	.1.25@1.50
Winter Nellis	.75@1.00
Persimmons	.75@1.00

Dried Fruits.

Prunes 4-size basis	.3@3¼
Santa Clara	.3¼ @3¾

½c premium for larger sizes

Apricots per lb; Choice 8½; fancy 9@10.

PEACHES—Choice 5; fancy	6@6½
Apples Evap	.5¾ @7
Pears	.5½ @8

RAISINS—1908 crop, f. o. b.: Clusters and Layers, 20-lb bxs—Imperial Clusters, 6-crown, $2; Dehesa Clusters, 5-crown, $1.75; Fancy Clusters, 4-crown, $1.40; London Layers, 3-crown, $1.15; do, 2-crown, $1.05. Seeded, 25-lb bxs—Fancy bulk per lb, 5¼c; Choice bulk, 5c. Loose Muscatels, 50-lb bxs—Standard, 4-crown, 4c; do, 3-crown, 3¼c; do, 2-crown, 2¾c; Seedless, 3½c. Seedless Sultanas—Unbleached, 4¼c. Thompson Seedless—Unbleached, 4¾c. Dried Grapes, 2½c.

Nuts.

Walnuts S S No 1 new crop	.9½
Walnuts No 2	.6
No 1 Standard	.8½
No 2 Standard	.4½ @5
Almonds Nonp	.11½
Almonds IXL	.10½ @11
Ne Plus Ultra	.9½
Drakes	.8½ @9
Chestnuts, Cal	.9½ @14

Beans Dried.

Limas	.4.10@4.20
Pink	.2.50@2.55
Small white	.4.70@4.75
Large white	.3.85@3.90
Black eyes	.3.10@3.20
Red Kidneys	.3.75@4.00
Garvanzas	.2.75@3.00
Bayo	.3.15@3.25
Horse beans	.2.00@2.25

Hops.

Hops new crop	.5@10

Honey.

White comb	.15½ @16
Light Amber	.9@10
Extracted W W	.7@8
Extracted light amber	.5½ @6
Beeswax No 1 per lb	.28@30
Beeswax No 2 per lb	.23@25

Hay.

During the week ending today total receipts of hay have amounted to about 2,600 tons. This amount although more than we received during the two weeks previous has moved off very readily under renewed activity after the holiday season. Prices are firm with a possible higher tendency and at the present writing we see no possibility of a lower range for some time to come. The warm rains which we are now having are doing a tremendous amount of good to the country and undoubtedly will reduce the consumption of hay in some districts by making green feed plentiful. There is only one thing which can offset this and that is a severe cold spell with heavy frost after the rain which of course would tend to kill the young grass and keep that back which has well started.

Alfalfa is perhaps in greater demand than it ever has been before owing to the fact that it can be sold cheaper than grain hay and furthermore is the best dairy fodder when green grass is not available. The supply of this article is very short in the state and considerable is now being brought from the outside.

The present range of prices we quote as follows:

Choice wheat hay	.21.00@23.00
Good wheat hay	.19.00@21.00
Other grades same	.17.00@18.00
Wheat and oat	.16.00@21.50
Tame oat	.16.00@21.00
Wild oat	.15.00@17.00
Stock hay	.12.00@14.00
Alfalfa	.14.50@18.50
Straw per bale	.50@85

Grains.

Wheat No 1	.1.67½ @1.70
Barley	.1.42½ @1.45
Corn large yellow	.1.80@1.85
Oats white	.1.67½ @1.75
Oats gray	.1.65@1.72½
Rye new crop	.1.45@1.50

Feed Stuff.

Bran per ton	.29.00@30.00
Feed cornmeal per ton	.37.00@38.00
Cracked corn per ton	.38.00@39.00
Rolled barley per ton	.27.50@30.00
Oil cake meal per ton	.38.00@39.50
Cocoanut cake per ton	.25.50@26.50
Middlings	.33.50@36.00

STRICT OBEDIENCE.

Mrs. Flint always demanded instant and unquestioning obedience from her children. One afternoon a storm came up and she sent her son John to close the trap door leading to the roof.

"But, mother—" said John.

"John I told you to shut the trap door."

"Yes but mother—"

"John, shut that trapdoor."

"All right, mother, if you say so, but—"

"John!"

John slowly climbed the stairs and shut the trapdoor. The storm howled and raged. Two hours later the family gathered for tea. When the meal was half over Aunt Mary had not appeared, and Mrs. Flint started an investigation. She did not have to ask many questions; John answered the first one.

"Please, mother, she is up on the roof."

Citrus Market

LOS ANGELES, Jan. 20, 1909.

The shipments were slowed up by the storms of last week so that the market has been strengthened and better prices prevail on oranges. Some damaged fruit has been forwarded which sold at low prices. It is nearly cleaned up and but little more will go.

Lemons are strong in tone and good returns are being made.

Shipments.

Shipments of oranges to date aggregate 2,742 cars of oranges and 963 cars of lemons.

NEW YORK, Jan. 15.—One car navels and two cars of lemons sold. Market is unchanged on navels, but very active on lemons.

NAVELS—	Average.
Our Favorite M & Greene Co	2.25
Tropical Queen do	2.15
LEMONS—	Average.
Independent Growers Ft Co	3.30
Pride of Corona QC Ft Ex	3.15
Corona Beauty do	2.80

PITTSBURG, Jan. 15.—Two cars sold, five on track. Market is unchanged on navels. Four cars Florida oranges sold, average $1.55. Market is weak on Floridas. Weather warm.

NAVELS—	Average.
Queen Bee QC Ft Ex Corona	2.00

ST. LOUIS, Jan. 15.—Weather cold. market is very strong on lemons, also strong on large sizes of navels. Five cars sold, seven on track.

NAVELS—	Average.
Yellow Beauties AFE Highgrove	1.85
Uncle Sam Riv Ft Ex Pach Sta	2.25
Fiesta do	2.30
Lochinvar RH Ft Ex Highlands	2.65

CLEVELAND, Jan. 15.—Weather cool. Market is steady. Three cars sold. Six cars on track. One car Florida oranges sold, average $1.80. Prices low on Floridas on account of the quality.

NAVELS—	Average.
EEE ST Ft Ex Leffingwell	2.35
Plain Label do	2.15
Canna SB Ft Ex Yerkes Spur	2.40
Cobbler, Shoemaker Jo	2.10

BOSTON, Jan. 15.—Ten cars sold. fourteen on track. Weather fine. Market is slightly easier.

NAVELS—	Average.
Forgetmenots TCC F E Porterville	2.10
Tulip TC Ft Ex Porterville	1.85
Oakleaf TCC Ft Ex Porterville	1.65
Lochinvar RH Ft Ex E High	2.45

CINCINNATI, Jan. 15.—Weather cool. Market is weak. One car lemons and five cars Florida oranges sold. Florida Brights sold from $1.25 to $1.75, Russets, $1.50 to $1.95. Two cars on track.

LEMONS—	Average.
Arab SA Ft Ex San Dimas	2.75
Duck do	2.05

PHILADELPHIA, Jan. 15.—One car lemons sold. Weather cold. The market is steady. Five cars on track. Twenty-eight cars of Florida oranges sold which ranged from $1.30 to $2.25. The market lower on Floridas.

NEW YORK, Jan. 18.—Sixteen cars navels and five cars lemons sold; also one car Arizona navels. Market higher in spots. Lemons easier, lower. Clear, cold.

NAVELS—	Average.
Blue Mountain P & McKevitt	2.35
Young America do	2.15
Our Favorite M & Greene	2.20
Tropical Queen do	2.05
Mountain Lion FH Speich	2.45
Rialto Girl Growers Ft Co	2.55
W Highland Cleghorn Bros	2.60
Stock Label do	2.15
Premium Benchley Ft Co	2.35
Alphanite	2.05
Standard Orange County	2.40
Royal Knight RH Ft Ex	2.70
Red and Blue Label TCC Ft Ex	2.35
LEMONS—	Average.
Chess Queen Ely Gilmore Co	2.70
Bishop do	2.45
Loma Vista A P Nelson	2.50
Rook Ely Gilmore F Co	2.55
Squirrel RH Ft Ex	2.65
Palm tree do	2.50
Pet SA Ft Ex	2.85
Arab do	2.70
Duck do	2.55
Selected Limoneira Co	2.50
Loma do	2.40

For Mehring Foot-Power Milking Machines see O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles, Cal.

ARIZONA NAVELS—	Average.
Cactus boxes	4.00
Desert half boxes	3.80
Cactus half boxes	2.15

PHILADELPHIA, Jan. 18.—Four cars navels and two cars lemons sold. Market is steady. Weather cold. Seven cars on track. Twenty-five cars of Florida oranges sold. The market is unchanged. Prices are lower on large sizes.

NAVELS—	Average.
Planet, SS Ft Ex Orange	2.29
Queen QC Ft Ex Corona	2.30
EEE ST Ft Ex Leffingwell	2.27
Rialto Girl Growers' Ft Co	2.56
LEMONS—	Average.
Choice LGFGA Lemon Grove	2.48
Standard do	2.27
Selected Limoneira Co	2.34
Bridal Veil do	2.24
White Cross do	2.02

ST. LOUIS, Jan. 18.—Weather cool. Market is firm on good stock navels. Steady on lemons. Seven cars sold. Four cars navels and three cars lemons sold.

NAVELS—	Average.
Princess QC Ft Ex Corona	1.45
Lily do	1.25
Cal. Orange Riv Ft Ex Riverside	1.75
Cluster SA Ft Ex Pomona	1.85
Stock Label do	1.80
Tulip TCC Ft Ex Porterville	1.45
Oak Leaf do	1.35
Red C Covina Ft Ex Covina	2.45
Cougar Covina Ft Ex Covina	2.35
Cambria T Strain	2.20
Shamrock do	2.05
LEMONS—	Average.
Extra Choice STFE Rossmoyne	2.65
Standard do	2.60

BOSTON, Jan. 18.—Eleven cars sold, fourteen on track. The weather is cold. The market remains unchanged.

NAVELS—	Average.
Forget-Me-Nots TCC Ft Ex	2.55
Tulip TCC Ft Ex Porterville	2.45
Oak Leaf TC Ft Ex Porterville	2.10
Gold of Ophir BCC Ft A Palermo	2.20
Pride of Cal Riv Ft Ex Riverside	2.45
Truth do	2.65
La Paloma do	2.55
Pride of Cal do	2.45
LEMONS—	Average.
Blue Mt. Pinkham & McKevitt	2.60

PITTSBURG, Jan. 18.—Five cars sold, five on track. The market is easier on small sizes, but strong on large size navels. Five cars of Florida oranges sold, average $1.75. The market is unchanged on Floridas. Weather fair.

NAVELS—	Average.
Valley TCC Ft Ex Porterville	2.20
Braeside R Ft Ex Concrete Sta	2.20
Golden Rule Riv F Ex Riverside	2.10
Golden Riverside Ft Ex Riverside	1.95
Uncle Sam R Ft Ex Pachappa Sta	2.05
Fiesta do	1.85

CINCINNATI, Jan. 18.—Weather cool, market is steady. One car navels and four cars Florida oranges sold. Four cars on track. Florida Brights, $1.70 to $2.00; Russets, $1.70 to $2.10.

NAVELS—	Average.
EEE ST Ft Ex Leffingwell	2.20

CLEVELAND, Jan. 18.—Weather cool. Market is easier. Five cars sold. On track, eight cars. One car Floridas sold, $1.70 to $2.05, average about $1.80. Market is unchanged on Floridas. There are two cars on track.

NAVELS—	Average.
Queen QC Ft Ex Corona	2.25
La Mesa Riv Ft Ex Riverside	2.55
Golden Rule Riv Ft Ex Riverside	2.35
Braeside Riv Ft Ex Riverside	2.25
Gavilan Riv Ft Ex Riverside	2.55
Pride of Cal do	2.10
Golden Flower Red GO Assn	2.55
LEMONS—	Average.
Tiger SB Ft Ex Colton	2.80
Floral do	2.15

BERRY PLANTS.

FOR SALE—MILLIONS OF STRAWBERRY plants, all the standard varieties; many varieties blackberry, raspberry, Logan, Himalaya, Mammoth, dewberries and fruit trees. Special prices. Muscat and Flaming Tokay cuttings (disinfected,) $3 per thousand. Write us your wants. TRIBBLE BROS., Elk Grove, Cal.

FOR SALE — BERRY PLANTS; LOGANS, Giant Himalaya, Mammoth and Lucretia dewberries. Would exchange for rooted Tokay. A. P. HENNING, box 225, Cottonwood, Shasta Co., Cal.

FOR SALE—LOGAN, MAMMOTH, PHENOMenal, Himalaya, Blackberry, Dewberry; strong plants, $10.00 per thousand. Strawberries, $3.00 per thousand. GRIDLEY COLONY NURSERY, Gridley, Cal.

FOR SALE — STRAWBERRY PLANTS, Brandywine, Excelsior and Arizona, $3 per thousand. Mammoth and Himalaya Giant Blackberry, $3 per hundred. FRED L. WING, Upland, Cal.

FOR SALE—LOGAN, MAMMOTH PHEnomenal and Himalaya berry plants, etc. Send for prices. R. J. Hunter, Oak View Berry Farm, GRIDLEY Cal.

CATTLE WANTED.

WANTED—FROM ONE COW TO TWO hundred good first class grade of thoroughbred Jerseys. GEO. A. SMITH, Corcoran, Cal.

Classified Liner Columns

Rates 1½ cents per word per issue. No ad. accepted for less than 25 cents. Our classified columns are the clearing house for the readers of the Cultivator. Here you can insert an ad. for the small sum of 1½ cents per word per issue, and be sure that it will be read by thousands.

FARM LANDS FOR SALE.

IMPERIAL VALLEY—DO YOU WANT to help us pioneer the **Weston Townsite** and get paid for it by getting in on the ground floor on the first 10 acre tracts, "without money and without price?"

We can offer a few 10 acre lots surrounding the Townsite at $1000.00 each, to be paid for in work on adjacent tracts or on a share basis of planting to oranges or grape fruit or to vines and deciduous trees. WESTON is situated in the centre of the famous No. 8 Water District and has more than 50,000 acres of the finest garden soil in the Valley tributary to it.

Remember the history of the townsites of Brawley, Imperial, El Centro, Holtville and Calexico and profit while you may.

If you are free to go there we can help you and you can help us. For particulars apply to IMPERIAL INVESTMENT CO., 315 H. W. Hellman Bldg., Los Angeles, Cal.

IN CENTRAL CALIFORNIA LAND can be homesteaded or taken under law requiring improvements but not residence now. Good rains, soil, water, and climate. Suitable for stock, poultry, bees, fruit, grain and garden. All first expenses about $160 for 160 acres. Convenient to work, market, railroad, some near oil wells. Some that I have located have sold for many thousand dollars. Write JOE CLARK RANCHER, Route 2, Hanford, Cal.

I make a specialty of orange and alfalfa ranches, and exchanges. 326 MAIN St., ROOM 9, Riverside, Cal., N. R. BELL.

POULTRY

Eggs from Ranch X-Ray,
That is what they all say;
X-Ray White Leghorn eggs
On which every one braggs
For hatching or to eat
X-Ray Eggs can't be beat.
Santa Rosa, California.

Some choice 2 year old cocks, a good mating for young hens. X-Ray Ranch, Santa Rosa, Cal.

BUFF ORPINGTONS—BLOOD AND BREEDing tells. Five years careful selection for points and laying; results, first prize pullets last year and 50 per cent egg yield during moulting season this year. Eggs, $1.00, $1.50 and $2.00. Special prices on incubator lots. E. G. WALL, 1920 Monticello Ave., Hollywood, Cal. Phone Hollywood 1943.

SINGLE-COMB BROWN LEGHORNS—EGGS $1.50 and $2.50 per setting, $5 and $7 per 100; cockerels, $2 and up, from Bright hens. MRS. C. H. VARY, Pomona, Cal.

WHITE ROCKS—SNOW WHITE, prize winning, bred to lay. Eggs $1.50 and $2.00 per sitting. W. E. B. SMITH, 820 Elm Ave., So. Pasadena, Cal. Phone Sunset, Main 2866.

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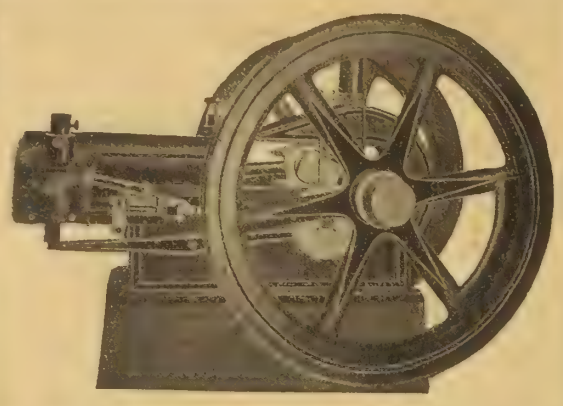

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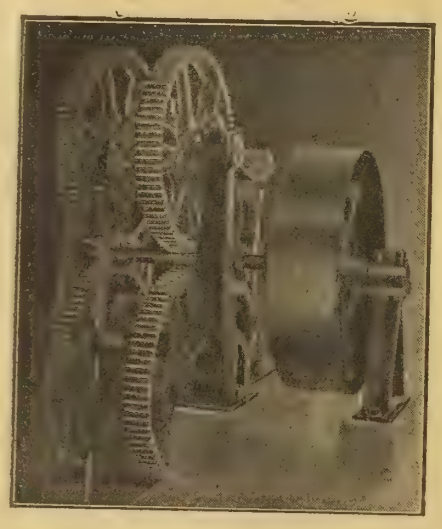

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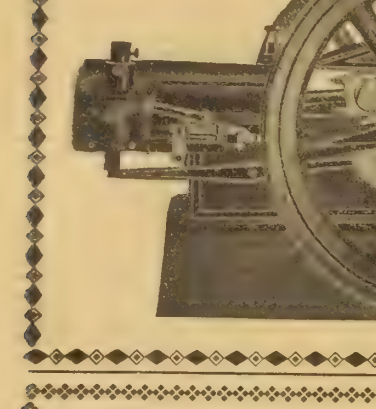

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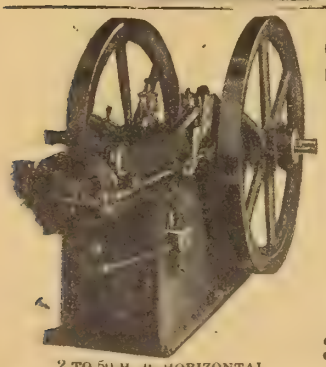

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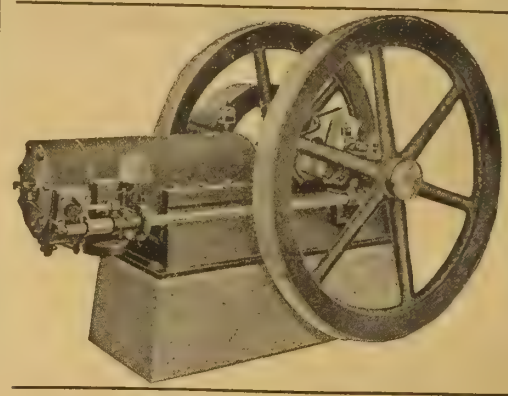

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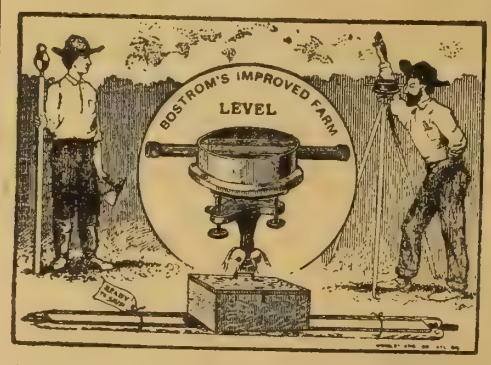

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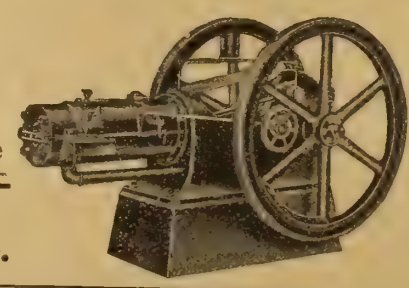

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$1.50 Per Dozen. $6.00 Per Hundred. $40.00 Per Thousand.
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J. B. WAGNER* - *The Rhubarb and Berry Specialist
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California Cultivator

Published Weekly — One Dollar a Year

Los Angeles — January 28, 1909 — San Francisco

Imperial County Alfalfa Fields

The Imperial Is Proving a Mecca for Stock Raisers as a Place to Drive Their Stock for Finishing Off

NEVER before has there been quite so satisfactory a state of affairs in the valley as now, as regards the quantity and value of hay and pasturage. Combined with a vast quantity of feed here, here is a scarcity on the coast which has sent prices high. Farmers are now selling baled alfalfa for $12 on board the cars in the valley, and are cleaning up the large accumulation preparatory to the cutting for the new season, which will be under way in ninety days. There is a great quantity of this baled hay being shipped, and large sums are being distributed among the farmers as a result.

There is a much smaller quantity of baled barley hay going to market, and the prices realized for this are naturally much higher.

Then there are tens of thousands of acres of barley fields being pastured, for which the farmers are receiving monthly pay from the stockmen or are fattening their own stock, all of which is bringing in large sums of money.

The dairy industry at the same time is booming, many young head coming into milk production.

The sheep men are also happy, for after a discouraging period, the price of mutton has been advancing rapidly.

With it all, there is great promise of grain with which to fatten the hogs in the summer.

And that is why Imperial valley is now getting to look much better to the people who realize what is taking place.

Money, which has been hard to get hold of for several months, is slowly but steadily becoming more plentiful, and the drift toward better things which the Standard predicted to set in January 1 is already in evidence. Another month or two will make the changed condition conspicuously apparent to everybody.—*Imperial Standard.*

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Don't Pay Two Profits!

The Famous
Success
Hot Water Incubator

Sold on Free Trial o Anyone Anywhere

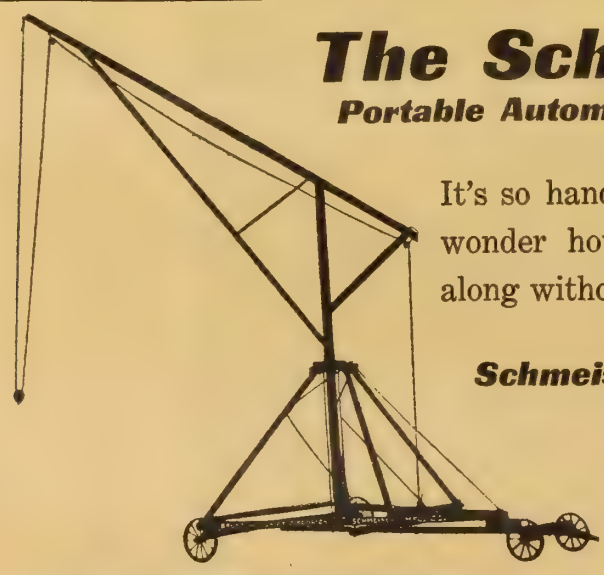
LOOK—130-Egg, $15; 260-Egg, $20; 340-Egg, $30; 612-Egg, $40. We Pay Freight.

This high class incubator before you buy any other at any price. We own our own building, pay no rents, and can undersell by many dollars all other dealers in incubators and brooders. All incubators are made from first grade clear redwood, wool padded tops, double walls, lined with heavy felt paper, hot water heating system, 14 oz. cold rolled copper heater, special long lever automatic self regulator. Our machines will hold an exact even temperature, no watching them at night.

Our heater is better than any other used on any incubator at any price. Automatic in admitting fresh air. Investigate this machine and save many dollars and get the best at any price. Free 32-page book contains lectures on chick raising, etc. It's free, send for it today.

E. E. McClanahan

108-112 E. Eighth St. **Los Angeles, Cal**



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Portable Automatic Derrick

It's so handy that you will wonder how you ever got along without it.

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THE BEST IN THE WORLD; HAS NO EQUAL

The Original R. I. Knapp Side-Hill Plow

Orchard and Vineyard Plow received first premium at State Fair

If you cannot get our plow send us the name of your dealer and we will see that you are supplied. Has given entire satisfaction for over thirty years. Equally as good for valley as hill sides. We manufacture five sizes—from one-horse orchard and vineyard plow, to the strongest grading plow.

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Fruit Growers and Vineyardists

We Would Advise You to Use Our P. N. K.

This is a Fertilizer well adapted to produce a good, vigorous growth to your trees and vines, and the best quality of fruit in quantities that you desire, consequently paying you large interest on the money expended. Make a trial of this brand and you will use no other. Write for our pamphlet, ***"The Farmers' Friend,"*** for 1909.

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Propagated From the Best Specimens of Their Kind

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OUR ASSORTMENT

Comprises all the Best Commercial Varieties of

Peaches
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Order Now
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and our stock is the best that years of experience, care in selection, and care in growing can produce. That is what you want.

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Trees *Grape Vines*

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Grown on Virgin Soil, True to Name, and Healthy. Nineteen years of fair and square dealing makes us the most popular nursery in the West. ***Wilson's Trees and Grape Vines*** long noted as the very best. Catalog and Price List for the asking. Address

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California Cultivator

Vol. XXXII—No. 4 Los Angeles, California, Thursday, January 28, 1909 Subscription $1 a Year

The National Live Stock Association

"YOU live stock people furnish us much of our food, much of our clothing, even some of our shelter, and still more, attend to the wants of our sole." The above is from the welcome extended by Pres. Stewart of the Los Angeles Chamber of Commerce to the delegates of the American National Live Stock Association, which was called to order by Pres. J. A. Jastro at the Belasco theatre, Los Angeles, last Tuesday morning. It was a representative body of the most substantial looking class of men one often has occasion to look upon. From nearly every state and territory of the Middle West and Pacific Slope they had come to enjoy a look at the California climate and to discuss methods of advancing the great industry which they follow. More than $4,000,000,000 are invested in this one industry in the United States. Of this, California has entirely too small a proportion. For as Pres. Jastro remarked in his opening address, "Some of the fresh pork consumed in California is shipped from the middle west, as is nearly all the cured pork products."

The president called the association to order shortly after ten o'clock and the first word of welcome was extended by Mayor Harper of Los Angeles. Geo. H. Stewart, president of the Chamber of Commerce, also gave hearty welcome to the class which usually pioneers every new country. This was especially true, he said, as to California, where the livestock industry had existed even before the coming of the gold seekers. He complimented the attendance as representing a class greatly skilled in "corraling the nimble dollar and of equal skill in letting it go to roam where it will and let him catch who can. We bid you hearty welcome to our beautiful city and assure you we will keep our camp fire lighted and that the gates of our city are wide open to receive you." Response to the welcome was given for the association by H. E. Crowley, secretary of the Texas Cattle Raisers' Association. He expressed appreciation of the fact that stock growers were permitted to hear the "gates of this beautiful city swing open upon the hinges of hospitality. We accept your cordial welcome with all our hearts."

Next week's Cultivator will give more extended reference to the deliberations of the convention, which is only convening as we go to press. We are glad, however, this week to be able to give the following extracts from the annual address of President Jastro:

This is the first time the American National Live Stock Association has honored California with its convention, and being a Californian by adoption, I wish, in addition to the very cordial welcome you have received, to extend to our members, delegates and other visiting stockmen my personal welcome and thanks for their attendance. That many of you have come so long a distance is a gratifying proof of the interest you take in the work of our association, and is a tribute duly appreciated by your officers.

In earlier days California was noted for its many large cattle and sheep ranches. Indeed, the live stock industry under the Spanish rule and for many years thereafter, was one of the most important industries on the Pacific Coast. Today the old ranches, with but few exceptions, have largely disappeared, and the land formerly used for grazing is being devoted to more diversified agricultural pursuits. This transition in the far west is the same as experienced first in the Atlantic States, and then in the Mississippi Valley, and with each decade new conditions and new problems confront us. Before the railroads crossed the great Rocky Mountains and pierced the Pacific Coast, there was plenty of free range for all those pioneers who were willing to brave the hazards of the live-stock business in the unpeopled West. With the advent of adequate transportation facilities came the farmers, who settled in the fertile valleys; later on, irrigation vastly increased the land available for agriculture. The ranchman was slowly crowded into the mountains, and onto the semi-arid region, where farming cannot be conducted profitably without water and where irrigation is impracticable. With this development of the West, came also the overcrowding and overstocking of the free ranges, and their consequent depletion. The lands of Kansas and Nebraska, which were once great free ranges, have now almost entirely passed into private ownership; there is no more free grass in Texas, and it is fast disappearing in the Dakotas, Montana, and Colorado. The ranchmen of the future in those states will have to own their ranges, if they are to continue in business. There are still, however, in some of our western states and territories, such as Wyoming, Idaho, Utah, Nevada, California, Arizona, and New Mexico, great stretches of country in the mountains and on the plains, unfit for farming and impossible to irrigate. Such land has no value except for grazing, and in all human probability will always have to be used as grazing land. In many districts of this almost arid waste, it takes from fifty to a hundred acres, and even more, to support one steer, and under unwise and indiscriminate use and abuse what little value it ever possessed is fast being destroyed.

Years of experience, much of it full of misfortune, have impressed upon the stockmen the growing evils of uncontrolled and overstocked ranges. Although many solutions have been discussed by live stock associations and others interested, no definite plan satisfactory to all has yet been devised. When the question of federal control of the open range was first considered by this association, eight or ten years ago, there was a marked difference of opinion among the users of the range, but in the past few years there appears to be a steadily increasing majority who favor government control by a lease or otherwise. At our last annual meeting, the almost unanimous sentiment of our members was crystallized in a proposed bill which we desire passed by Congress. By the provisions of that bill the federal government is authorized to establish grazing districts in the semi-arid sections of the West, and to appoint officers necessary for the administration and protection of such grazing districts; to issue permits to graze live stock thereon for periods of not more than ten years, with the right to fence, giving preference to homesteaders and to present occupants of the range.

Promptly on adjournment of our convention last year, I appointed a special committee to go to Washington for the purpose of appearing before the appropriate committees in the Senate and House of Representatives in support of this land bill which had been formulated and recommended by our association.

Closely allied with this subject is the forest reserve policy of our government. I believe we are all agreed on the importance of conserving our natural resources, particularly our forests, for on them depends our water supply, as well as the future timber supply of the country. The forest service department has been freely criticized by various interests, and in the majority of cases unjustly; but the criticisms have been directed largely, if not entirely, against some of the details of their administration, and not against the general policy of forest preservation. Incapable and unreliable men have probably occasionally got into subordinate positions in the service and have abused their authority, with the result that some users of the forest reserves have seemingly been favored, while others claim not to have received their just dues. For the purpose of furnishing a convenient and accessible avenue for the settlement of such complaints or disagreements, this association, several years ago, urged the formation of local advisory boards of interested stockmen to co-operate with and advise the local representative of the forestry service in the administration of the reserves in the different districts, and I am pleased to inform you that in many districts such advisory boards have been established and have proven of great benefit in the settlement of controversies between the stockmen and the Forestry Department. The administration of the reserves has also been improved and simplified, at our suggestion, by the creation of local branch offices in charge of competent men at various large central points throughout the West. Those having business with the forest service do not now have to travel to Washington to file their complaints or to receive a proper hearing. From my observation, I believe I am safe in saying that the antagonism of the stockmen against the forest service, so evident in certain sections at the inauguration of that policy, is fast disappearing. Mr. Pinchot, the very competent head of the Forest Service, will, I am sure, welcome any suggestions you have to make as to the improvement of the service, modifications of their regulations, or changes in the fees charged.

At the time of our last meeting there was pending in Congress a bill known as the Culberson-Smith Car and Transportation Service Bill, which had been prepared by our attorney, and which was designed to prevent unreasonable delays in furnishing cars for live stock and other perishable freight, and to compel reasonable and adequate service and at a minimum speed. That bill was unanimously approved by you, and in carrying out your action, your transportation committee and officers have zealously endeavored to secure favorable action by Congress on this measure. Not longer than a couple of years ago, it was a frequent occurrence for a ranchman to drive his stock to the loading points, and then wait from two weeks to two months for cars which had been ordered in ample time, and which, in many instances had been promised for a certain date. In extreme cases the stock had to be turned back on the range because it had shrunk too badly to be shipped. It was because of this disregard of their plain duties as common carriers that our association urged the passage of the Culberson-Smith Bill. During the past year the railroad service has materially improved, and undoubtedly our efforts to secure such legislation have been a great incentive toward this improvement.

Our association has also been active in its support of the bill we had introduced in Congress, and which you approved at your last convention, prohibiting the railroads from advancing freight rates except subject to the power of the Interstate Commerce Commission to inquire into the reasonableness of the advances before they take effect, and to suspend same if deemed unreasonable. The wholesale increases in rates already made all over the country, as well as those contemplated advances so widely discussed in the newspapers, emphasize the necessity for such a law. Just now all California is protesting against a general advance in transcontinental rates.

In view of the multiple economies in the oper-

(Continued on Page 92.)

Planet Jr.

The Planet Jr. Orchard and Universal Cultivator does more work and does it better than any other implement for the same purpose Carries attachments which thoroughly cultivate, furrow and hoe at any required depth in orchard, vineyard, or hopyard. Equipped with side-hitch and fruit-tree shield. Can be made into a disc cultivator. Made by a practical farmer and manufacturer, and especially adapted for your work.

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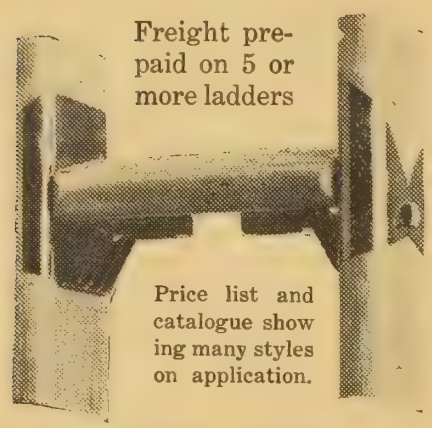

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A profit to you on every hour's use. Long lived. Acknowledged to be the

Lightest Strongest and Best

Our bid for your patronage is this. For cash with order,

Straight Ladders 25c per Ft.

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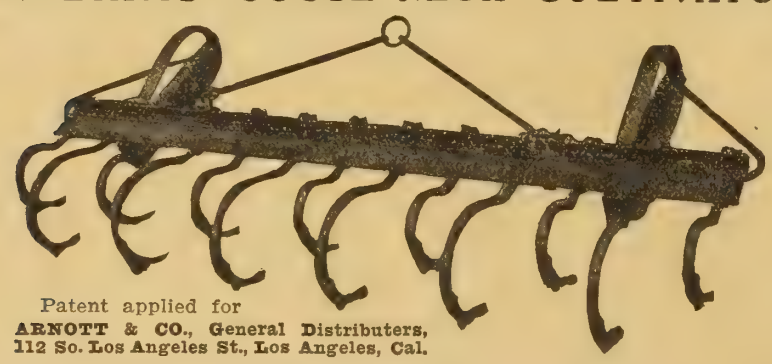
WILLIAMS' GOOSE-NECK CULTIVATOR



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Especially adapted for citrus orchards. Sizes 7 to 14 ft. Lightest draft. Write today

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Save Time—With the Brewster Picking Sack—Save Fruit

A new method sack—invented and perfected by lifelong growers. Eminent orchardists pronounce it perfect. Those who have tried it say they would not be without it. Actual tests show that a man can pick twenty-five per cent more fruit with it and with greater ease.

Sack forms semi-circle about picker's body—is supported by straps over both shoulders and held tight by belt around body. The picker can thus work with ease either on ground or ladder. When full, it does not extend below the hips.

A great feature of the Brewster Sack is the patent gate (see illustration) WHICH PRACTICALLY ELIMINATES BRUISING. Simply unfasten a hook—the gate drops—and the fruit can be quickly but very gently poured out.

The sack holds as much fruit as the old style sack.

Made in two grades.

Regular picking sack grade, sent express prepaid for $1.50.

Special extra quality—that will outlast two ordinary picking sacks—express prepaid $1.75.

Sierra Madre Sack Co., Sierra Madre, Cal.

We want reliable men in every locality to demonstrate this sack and act as our agents.

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The only positive eradicator of the SAN JOSE SCALE, RED and BLACK SCALE and other insect pests

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HAAS BARUCH & CO., " "

Citrus, Deciduous and Ornamental
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Our Potted Plants and Shrubbery are free from frost and insect pests. Reliable Agents wanted to work on commission. Send for Catalogue.

San Fernando Nursery Co.

San Fernando, California

The Preservation of Humus

The following article is from a letter written by Gerald Geraldson of Newcastle, to James Mills of Riverside. Mr. Geraldson has written several articles for the Cultivator along this line and at the recent State Fruit Growers' Convention at Sacramento, presented his ideas most forcefully and was opposed strongly by James Mills. Mr. Geraldson now presents these views in this open letter which the Cultivator does not endorse but gives publicity to hoping it will call attention so forcibly to the need of California soil for humus, that good may be accomplished.

With all your getting you must get humus.

THERE is little need of my entering into an argument as to the necessity for humus in the soil. You have said many things that show that you appreciate this need already. Prof. Shaw, in his paper read before the recent convention at Sacramento, showed more plainly than I can the necessity for having humus in any soil that is expected to produce crops of any kind. You will remember, also, that Prof. Shaw stated that almost any soil contains plenty of plant food, in fact that the supply is almost unlimited, but that it is not available for the use of plant life except as it is made so in some way by the presence of humus. I trust that this point will not be lost sight of as I could ask for nothing better in support of my contentions.

How.

The only issue between us is as to the best means of putting humus into the soil.

Many leading authorities advise, in addition to the use of chemical fertilizers and manure, the growing of crops of legumes, said crops to be plowed under in the spring, while green and immature, as the most promising means of accomplishing this end.

I claim that this plan is not in line with Nature's methods; that it does not to any considerable extent utilize the true humus value of the plants plowed under, and that it produces a condition of fermentation and acidity in the soil that is entirely at variance with Nature's methods in such matters, which methods are the only ones that can be followed permanently. I also submit that this plan calls for expenditures for seed; for the labor of plowing the ground to be treated, and for the labor of sowing the crop thereon. Also that it subjects the ground to a large additional amount of cultivation, which, I contend, is seriously detrimental.

As a better means of putting humus into soils, and of retaining that already there, I propose the plan of cultivating alternate "middles" of an orchard on alternate years, and of cultivating farming land every second year only, instead of annually as is commonly done now, and of not pasturing such unplowed land at all until the supply of grass has become large, and then but lightly. I offer this plan for reasons which I shall now endeavor to make plain.

Nature's Way.

In the beginning this earth was simply a big rock about two thirds covered with water. The winds and the frost came and the rains descended and beat the water against the rocks, in the form of waves, and streams large and small, and broke off pieces of the rock. These pieces were further buffeted by the waters, and other action of the elements, until they were partly ground up into the small particles we call sand.

As this sand accumulated in the low places the lower forms of plant life appeared, grew to maturity, ripened, died and were beaten down by the elements, forming humus which combined with the sand and formed soil. These plants also matured seed, which, being deposited in the soil, paved the way for more vegetation in the future.

As the sand increased the vegetation increased, and, in turn, the humus and the soil increased.

As the vegetation became stronger in the low places it gradually spread to the higher slopes, held the sand there instead of allowing it to wash into the low places, and made the soil of the hill and mountain sides.

That is all. This plain, simple, logical process has made a very large percentage, if not all, of the soil in the world today. From the peat bed which is nearly all humus to the "poorest" hill side the process has been the same, varying only in degree. Humus is the vital element everywhere.

As a soil contains humus it is "rich." As it lacks humus it is "poor." And this humus was and is, always and invariably, in Nature's laboratory, made of ripened, matured vegetation; never, anywhere, of green leaves or grass.

By this process Nature is, I firmly believe, amply capable of maintaining the supply of plant food at a level so high as to support, permanently, a population many times greater than that possible under methods used today by the large majority of our agricultural population.

Alternate Middles.

An experience of six years has shown me conclusively that the system of plowing alternate "middles" in an orchard, or of plowing alternate tracts for farming, on alternate years, leads to the growth of a constantly increasing supply of vegetation, as well as to a vastly improved mechanical condition of the soil entirely independent of the matter of humus. There is no question but that earth worms, and the other forms of animal life in the soil, perform some important function; and I have demonstrated clearly that annual cultivation in some way interferes with this function, though I am not prepared to say just how.

The increased vegetation leads to increased seed, increased deposit of nitrogen, increased humus, and, through humus, to an increased availability of plant food which, in turn, leads to a still further increased supply of vegetation which makes more humus, and so on indefinitely.

There is, I believe, no limit to the possible increase of vegetation, and in turn humus, where man assists Nature by plowing the accumulated supply into the soil every second year and, at the same time, leaves alternate strips of unplowed ground, across the flow of the water, to prevent wash; and, when he gets a fine stand of grass, refrains from pasturing, except to a very limited extent.

As a soil is in a condition to promote the vigorous growth of grass, just so is it in a condition to promote the vigorous growth of trees adapted to it.

Why Not All The Orchard.

The plan of alternate middles in an orchard is necessary for several reasons.

First: It serves as a protection from fire in summer.

Second: It provides plowed ground on one side of every tree which, in the early stages of the process, retains more moisture than the worn-out, unplowed ground on the other.

Third: It prevents wash either by rain water or irrigating water.

Fourth: It provides for a better distribution than is possible otherwise, of seed.

Fifth: It insures much more animal life in the soil than is possible under annual clean cultivation.

The system does no harm of any kind that I can discover. A vigorous tree resists disease better than a weak one. If this system harbors pests it also provides shelter for their natural enemies. We have had no trouble on this account.

I have demonstrated to my entire satisfaction, and firmly believe, that if man so arranges his tillage of the soil as to allow Nature's processes to go on uninterrupted while he takes off his crops, he may take off crops indefinitely and his soil will for ever improve. The most radical thing he will have to do will be to change the kind of crop occasionally.

Bankruptcy.

On the other hand, if, in his virtuous enthusiasm, he stops Nature's processes; if he stops the grass from seeding; if he, by diligent cultivation, wears out part of his humus supply and makes conditions perfect for the washing away of the remainder; if, in other words, he destroys what humus he has and prevents Nature making any more; all the stable manure he can buy and haul and all the chemical fertilizers he can apply to his land will not prevent his ultimately reaching bankruptcy.

The reasons for this fact are; first, chemical fertilizers do not supply humus and we are told by innumerable authorities that the latent plant food in the soil can only be made available by the presence of humus, and we know that soil will not retain water except there be humus in it and that soil without water is worthless.

Second: If we all started to use chemical fertilizers as a few are now using them, there would not be nearly enough to go around and the price would become prohibitive, leading to bankruptcy.

Third: My experience, and many things that I have been told by careful observers, leads me to believe that chemical fertilizers are simply stimulants, having but a temporary effect which must be followed by a reaction sooner or later.

The supply of stable manure depends on the density of population; this, in turn, aside from temporary economic phenomena such as the present growth of cities, depends largely upon the supply of humus in the soil; therefore, the more the soil of a given community is worn out and in need of humus the less stable manure there is available to supply that need and the higher the price of it is sure to become as the demand for it becomes keener, so we do not have to follow this road far, either, before we come to bankruptcy.

Use Manure.

I do not decry the use of manure. Instead, I urge its use as far as it will go because it has great humus value combined with some chemical value, but I do say that any system of cultivation which depends solely on artificial manuring is unsound and impossible of permanence. It may be continued for a long time, but must break down eventually.

Under a civilized condition of society and correct cultivation, we should still use all of the animal manure available—and there will be plenty for actual needs under these conditions—but there will be no considerable fraction of enough if we all continue clean cultivation indefinitely.

The over-cutting of our forests; the over grazing of our pasture lands, and the over cultivation (clean annual cultivation) of our farming areas, or agricultural areas, are all precisely the same thing, and all wantonly and ruinously sacrifice the future for the sake of the present.

The injury in each case comes from removing too much of Nature's covering for the soil.

It has been demonstrated beyond argument that intelligent conservation of Nature's covering of forest areas leads to a relatively high, and constantly increasing, average annual output of merchantable timber.

Experience will show conclusively that intelligent conservation of Nature's covering of cultivated areas, namely, the allowing of the grass to grow to maturity and to seed without interference, every second year, will lead to a relatively high and constantly increasing average annual output of merchantable stock.—Ger-Ald Geraldson, Newcastle.

CITRUS GUMMING IN GENERAL.

The production of gum is the almost constant accompaniment of any injury to or interference with the functions of the citrus tree. Beside the cases of ordinary gum disease mentioned in Prof. Smith's Report the following are given in bulletin No. 200.

Orange Splitting.

In the splitting of oranges, particularly the Navel, which is so abundant and destructive some seasons, a drop of hardened gum is invariably found just at the spot where the split in the tissue occurs. Whether this accumulation of gum is a cause or effect of the splitting is difficult to determine. Indeed, in many oranges which do not split, but mature normally, drops of hardened gums can be found at the blossom end. The same is seen regularly in the saucer peach, grown commonly in Southern California.

Leaf Gumming.

The leaves of oranges and other citrus trees often show a form of gumming, but not as an indication of any particular disease. In many cases, indeed, trees with such leaves are to all appearances entirely healthy. This gumming takes the form of a brown solid deposit in spots or pustules just beneath the surface. Trees which are affected with any injurious condition are likely to show this effect in the leaves, but, as just said, it is not always an indication of any trouble.

TWIG BLIGHT.

A condition occasionally occurs on orange trees in California which may be designated by this name. This is seen as a sudden dying and withering of small terminal twigs here and there in the tree which had hitherto appeared entirely healthy and normal. The green leaves suddenly wither and remain attached to the twig, which dies back for a short distance, and with its dead leaves shows very prominently in the green foliage of the tree. Usually only small twigs are affected and the appearance is as though they had been broken and remained hanging. At the point to which the twig dies back a few drops of gum appear and harden. This trouble is by no means a serious or important one and need not be apprehended in the least where it occurs. It is quite a common occurrence, but never results seriously. No apparent cause can be seen for the death of the twigs in this manner, but the production of gum would indicate an interference with the flow of sap for some reason.—Prof. R. E. Smith in Report Diseases of Citrus Trees.

C. Ridderhof, Agent for Burrowes Portable Billiard and Pool Tables, has moved from the Laughlin Bldg., to the main floor of the Merchants Trust Bldg., 209 So. Broadway, Los Angeles.

Imperial Valley Lands have a greater earning capacity per acre than any land on earth. For price list and information address, James S. White Jr., and R. A. Holt, Holtville, Cal.

Wood soled Boots and Shoes. Boots $3.25; Shoes, $2.00 O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles, Cal.

Orange Seed Bed Stock

FOR SALE. ADDRESS

J. S. Killian, El Monte, Cal.
Phones: Sunset, 8x4. Home, Red 31, or,
L. C. Rice, Tropico, Cal.
Phone Sunset, Glendale, 263.

Trifoliata Orange Seed
$5.00 per Gallon
Fresh and California Grown
Morris & Snow Seed Co.
425 So. Main St., Los Angeles

DEAD CITRUS WOOD

Is more or less prevalent in every orange and lemon grove, i. e., trees that are unprofitable. How many such have you in your orchard? Would it not pay you to put paying trees in their stead?

Your Home Grounds

Should contain at least a few trees of the better varieties of oranges and lemons. For this purpose we have some exceptionally fine trees to offer, being grown as specimens. Possibly you would like to plant a few citrus trees about your home this season. If so, will you do us the favor to correspond with us about it?

Citrus Fruits

Historically, Horticulturally, Commercially.

Our new booklet gives more valuable information about varieties, methods of planting, cultivating, pruning, picking, packing and shipping than anything of its kind ever issued. Sent anywhere for the small sum of 25 cents. Correspondence a pleasure.

The San Dimas Citrus Nurseries
R. M. Teague, Proprietor
San Dimas, California

TREE TANGLEFOOT

A Sticky Preparation Applied Directly to the Bark of the Trees

Will not injure trees. A band 5 inches wide and 1-16-inch thick cannot be crossed by any climbing insect pest. Remains sticky five to ten times as long as any other known substance. You can test it at slight expense, as no apparatus is required. Used by the carload in New England against the Gypsy and Brown-Tail Moths. In California it preserves prune orchards from the Canker Worm. Wherever the Gypsy or Brown-tail Moths, Tussock Moths, Fall or Spring Canker Worm or Web Worm appear TREE TANGLEFOOT is of great value, and should be used when the caterpillars begin to crawl while they are very young.

Price 25c per lb. Liberal discount on quantities. The only safe and effective banding preparation. Send for testimonials.

THE O. & W. THUM COMPANY
Manufacturers of Tanglefoot Fly Paper — Grand Rapids, Michigan

George B. Warner's Orange County Nurseries
Established 1889
Grower and Dealer in Citrus and Deciduous Trees of all Standard Varieties

Soft Shell Walnut Trees, 1, 2, and 3 years old. Grafted Placentia on Native Black Walnut Root and Soft Shell Root. Street and Ornamental Trees, Palms, Dracænas, Blue, Red and Sugar Gums (large stock.) Write for prices.

Sales Yard—Corner Sixth and Main
Residence—Tenth and Bush Sts
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Phone—S. S. Red 92

ORANGE SEED BED TREES

Large seedlings for orchard planting. Eureka Lemons, Pomelos. A fine lot of Phoenix Canariensis and Washingtonia Robusta palms, Camphor Trees, Acacias, Roses, etc.

Southland Nurseries, F. H. Disbrow, Prop.
Phones: Main 949; Home 2520 — **PASADENA, CAL.**

Deciduous Fruit Culture

By J. W. Mills

DEEP CULTIVATION OF VINES.

IT IS generally supposed that very deep cultivation of vines is the best method to pursue. A French author writes that young vines should be more deeply cultivated than older ones as a general proposition. The many roots that are formed when the vines are young, grow deeply, but when the vine comes into bearing, the feeding roots come nearer the surface and too deep cultivation will prove injurious. This applies to heavy soils and those above medium in this respect. On sandy soil, he concludes that deep cultivation should be always practiced.

We have learned that in the arid climate of California, it is necessary to cultivate deeper in heavy soils then in lighter ones in order to promise an efficient dust mulch. The effectiveness of a mulch is determined by the degree of fineness or depth of it. A strictly dust mulch need not be over five inches deep to give good service, but in heavy soil such a mulch cannot be made because the soil cannot be made fine, consequently it must be cultivated deeper. It is necessary to have it deep enough to prevent the rapid transmission of heat from the surface on hot days. More air will pass through a coarse mulch and it must be enough deeper than the finer mulch to offset this difference.

The practice of deep cultivation of all kinds of fruit trees has been advocated by both scientific investigators and practical growers for many years past. There will no doubt be a revision of this advocacy of deep cultivation. It is known that where practicable, orange trees do best with shallow cultivation. We know of a plum orchard that bore a record breaking crop after a season of shallow cultivation. The old writers on the subject of olive culture in its native home tell us "the olive despairs of the plow." French viticulturists now tell us that bearing vines must not be cultivated too deeply as the feeding roots come near to the surface. Why shouldn't they, for the richest soil is near the surface.—J. W. Mills.

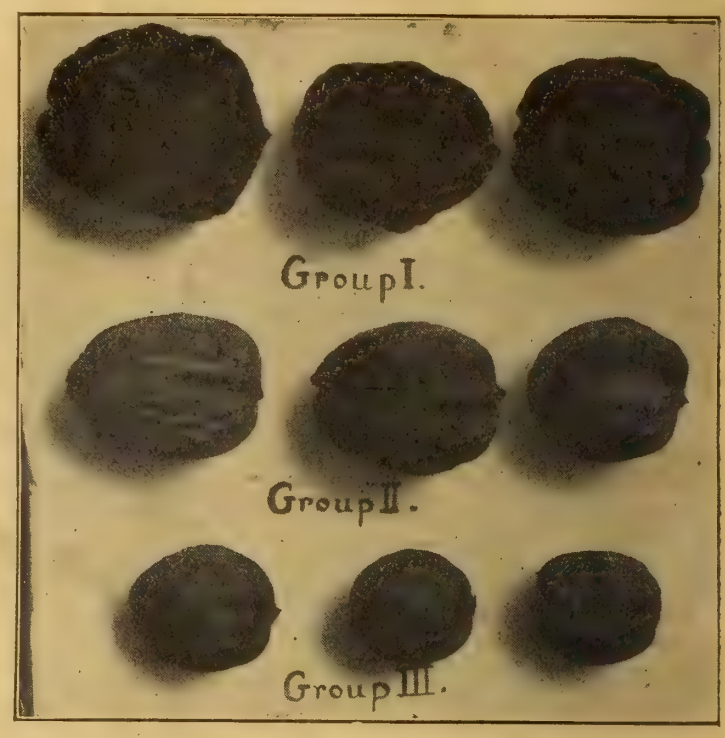
SEEDLINGS VS. THE GRAFTED WALNUT.

BY A. A. MILLS, Anaheim.

I HAVE followed with much interest the discussions in relation to walnut culture both in the press and at the farmer's institutes. Some of these discussions have been very amusing and a great deal of it very conflicting. At this season of the year the planter is very much interested as to whether to plant seedlings or grafts, and what variety of either, and if grafts,—then what root. For fifteen years now these have been the interesting questions in our immediate vicinity and more or less all over Southern California. Of late years it has spread up the coast clear to the Canadian line.

Not All Immune.

As to grafted nuts: A writer says, "Speaking of walnuts, I have several trees 10 years old, growing in deep, rich black soil, that scarcely give me a quart of nuts a year. I keep them only for scions for grafting. Franquette does the best, with the Santa Rosa second." Are we to infer from



Group I.—Typical Klondike nut, grafted. Group II.—Nuts from the same trees as group I, but modified by pollen from tree of group III. Group III.—Typical soft shell nut. All greatly reduced.

California's Largest Nursery 1500 Acres

ROEDING TRUE TREES FRESNO, CAL.

Sole Propagators Luther Burbank's New Creations

FOR twenty-five years we have been engaged in growing reliable Nursery stock. Last year we did the largest business in our history. It has always been our constant aim to produce the very best trees possible. We have made a careful study of soils and climate with the result that we have today the hardiest, best-rooted field-grown stocks on the market. We exercise the greatest possible care in handling the different varieties, and a fruit grower can buy from us with every reasonable assurance that his trees will be true to name. Being the largest growers and shippers of trees on the Pacific Coast, we naturally have very large stocks and are in a position to supply almost any demand.

We want to call particular attention to three books which are mentioned elsewhere in this advertisement and state that these books are well worth the price asked for them and will be found very interesting and valuable to those interested.

Deciduous, Citrus and Ornamental Trees, Grape Vines Palms and Roses

TREES

Experimental Farm, Plant No. 1—640 Acres
Nursery and Propagating Dept. - - No. 2—130 Acres
General Nursery, Plant No. 3—640 Acres
Citrus Nursery and Citrus Orchards 100 Acres

Every Fruit Grower

Should have a copy of the following books:

The Smyrna Fig at Home and Abroad. Price 50c.

Luther Burbank's Booklet, illustrated in colors. Price 25c.

Our general price list sent free on request.

Calimyrna Figs

Without question we stand supreme in the production of genuine Smyrna Fig trees in America. The market is wide and the supply of real Smyrna Figs very limited. The Calimyrna Fig which originated with us is the genuine Smyrna Fig of Commerce and the only Fig that is worth while planting.

(*Paid Up Capital, $200,000.00*)

California Horticulture

The Fruit Growers' Guide
By George C. Roeding

New—Just Off the Press

120 pages, profusely illustrated, beautiful lithograph cover, color plates inside. This book fully describes various kinds of citrus, deciduous and ornamental trees, roses, vines, plants, palms, etc. Gives valuable information about planting and shipping. By far the best book of its kind ever published on the Pacific Coast.

MAILED POSTPAID UPON RECEIPT OF 25 CENTS.

Fancher Creek Nurseries

GEO. C. ROEDING, Prest. and Mgr.

P. O. Box 12, Fresno, California

this that Burkank's famous Santa Rosa is doing but a little better than a pint of nuts to the tree? This experience would seem to indicate that either the grafted nut was an entire failure in that section or that the varieties were wrong. This year a man in our county reports nearly 100 pounds per tree from grafted Placentia Perfection on their own root at nine years old.

Some five or six years ago a nurseryman near Santa Paula was advertising the Placentia Perfection as free from walnut blight and only two years ago a gentleman near Whittier was advertising grafted Placentia Perfections as immune to the blight. Last spring at the farmer's institute in Whittier it was said that the Placentia Perfection would have to be discarded for varieties that were immune to the blight. For the past eight years there have been "discovered" trees and varieties immune (?) to the disease. At the present time there are many varieties advertised all over the state; each, as the only and sure immune one. The blight and observation have already removed many of these from the list of the immunes, and it is the opinion of the writer that these agencies will soon remove them all from this list. Year in and year out the grafts, so far, have proven very erratic bearers, being very tender, and therefore subject to frost, excessive dampness, heat, and blight.

The Stock.

As to the roots for grafts: A great many desire a root that will grow in soils in which the soft shell root cannot possibly thrive. In discussing this question with some planters at Santa Paula about six years ago the writer told them that such soils were not suited for walnut culture and that a man with such soil should go into some other line of ranching. I am strongly of the opinion that the soft shelled root is the best to graft or bud on, yet if people will insist on planting walnut trees on uncongenial soil, then the Northern California Black is the very best wild root.

Digging Up The Trees.

The seedling walnut, however, is the one so far that has produced the burden of wealth in the walnut sections. This, too, in the face of the facts that the selection of seed until recently, was poorly done, the soil, not always of the best and the culture, irrigation, and fertilization always at the minimum.

There have been some good seedlings planted in Central and Northern California, and when these get to be 10 years old they should give better than a "quart of nuts" to the tree. If the conditions are suitable for them they will give a good account of themselves as they have done here. Yet, we are digging up walnut orchards here, both seedlings and grafts. Last spring one man was digging out his grafted trees and selling them at $5.00 each to cut up for grafts. Another man is digging out his seedling orchard this winter, though he says that it pays him 20 per cent net on his investment. Both of these men look for better returns from Valencia orange trees, in fact, the planting of Valencias threatens to outdo the Belgian hare.

Mr. J. B. Neff here, is top grafting to one of the so-called immunes while a seedling grove next to Mr. Neff is reported to be netting 25 per cent on the investment. He, too, is hoping for something better.

A Lesson Without Words in Pruning Vines

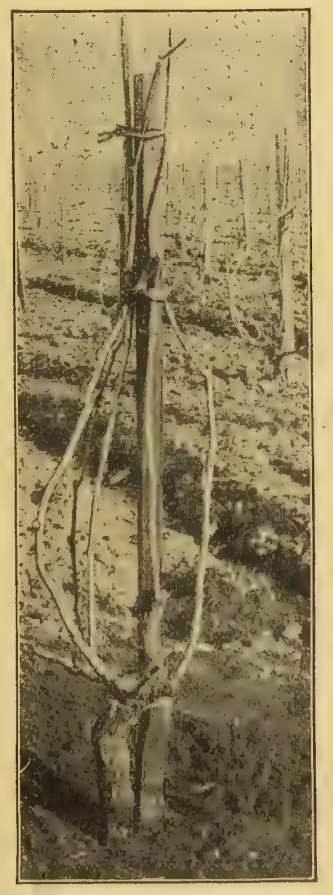
The following story of the pruning of the vine told in pictures is from the "California Horticulture: The Fruit Growers' Guide," by George C. Roeding, a book which is put on the market by Mr. Roeding at two-bits the copy and big value at that.

FIRST YEAR AFTER PLANTING.

SECOND YEAR AFTER PLANTING.

THIRD YEAR AFTER PLANTING.

TRELLISED VINEYARD SHOWING METHOD OF PRUNING.



STAKED VINE FOUR YEARS OLD.

Effect of Pollen.

The all important thing with the seedling is proper selection. Not only should the trees from which seed is taken be good regular bearers, but care must be taken to see that there are no bad trees in the immediate vicinity. The accompanying photograph gives a most striking illustration of the effects of pollen on the nuts. These nuts were grown in the back yard of Mr. Hartung of Anaheim. The Klondike is a very large nut with deep corrugations, making it exceedingly rough. The pollen from the tree of Group III smoothed down the roughness of the Klondike so that one of the nuts of Group II is nearly as smooth as the soft-shell. The size too, is considerably decreased, as can be seen. It should be noted that the nuts of Group II are not what is commonly called a "cross" or "hybrid" of the two varieties, but were growing on the same tree as Group I, and at the same time. This demonstrates that pollen from another tree will and does affect the growing nuts as well as the nuts of the future generation. When selection is properly done the seedling will give at least 95 per cent No. 1 nuts. Even where the selection has been only moderately well done the seedling has proved, and is proving to be a money getter even under primitive treatment. Where conditions have been suitable and care moderately good the yields often go more than a ton to an acre—for 17 trees, single trees going as high as 500 to 600 pounds.

Seedlings Yet to be Preferred.

To sum up I think it cannot be gainsaid that the grafts produce larger, nicer looking and finer flavored nuts; that they bear earlier; that they are erratic bearers, with a strong tendency to shy bearing, this is strongly illustrated in the case first mentioned in this article, that they are more tender than seedlings and therefore more subject to frost, excessive dampness and heat, and to the walnut disease. That the seedling has proven successful under adverse treatment; that with proper selections and care, it will prove more successful and produce at least 95 per cent No. 1 nuts; that it is harder than the graft and therefore less subject to frost, excessive dampness and heat, and to the walnut disease. Finally that the seedling is reacting to the business demands of 20 to 25 per cent net while after about 15 years the graft yet has its way to make commercially.—A. A. Mills, Anaheim, Cal.

DEMONSTRATION TRAIN.

Prof. Warren T. Clarke sends us the following information regarding Institute Work in Southern California:

The Demonstration Train which is being sent through the State by the Department of University Extension in Agriculture, of the College of Agriculture of the University of California, as a part of the Farmers' Institute effort, working in conjunction with the Southern Pacific Company, will begin its third trip on February first. The train will start from Tracy, and in the course of the present trip will visit fully forty towns in the Central San Joaquin Valley. This run will end at Bakersfield.

The next trip, which will begin in the latter part of February, will cover a part of the Southern portion of the State. The route taken will probably be as follows: Bakersfield, Lancaster, Newhall, Los Angeles, San Gabriel, Monte, Covina, San Dimas, Lordsburg, Pomona, Lemon, Chino, Ontario, Bloomington, Colton, San Bernardino, Redlands, Crafton, Highgrove, Riverside, Redlands Junction, Beaumont, Banning, Indio, Coachello, Thermal, Mecca, Brawley, Imperial, El Centro, Heber, Calexico.

As at present planned, another trip will be made later in the spring, which will cover about the following route:

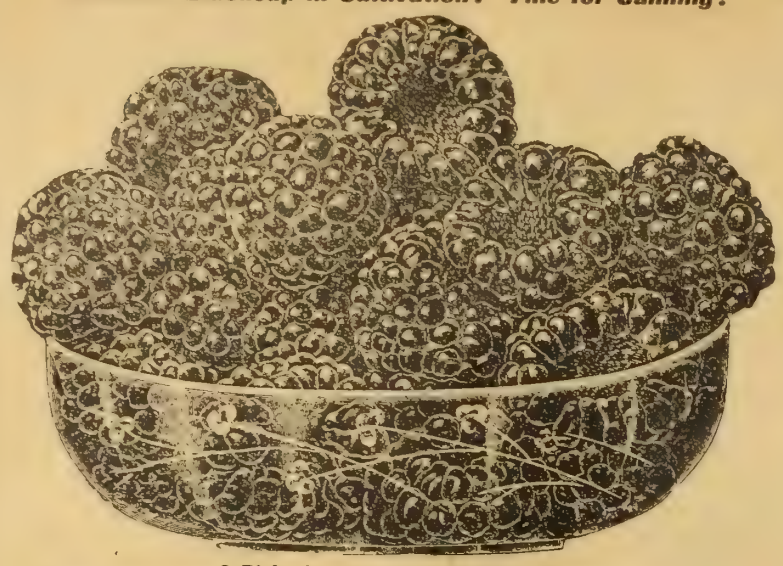
Los Angeles, Tropico, Burbank, Fernando, Lankershim, Compton, Downey, Norwalk, Buena Park, Anaheim, Santa Ana, Smeltzer, Westminster, Whittier, Pasadena, Duarte, Chatsworth, Moorpark, Somis, Camarillo, Oxnard, Montalvo, Santa Paula, Sespe, Fillmore, Piru, Ventura, Nordhoff, Carpinteria, Santa Barbara.

As a part of the make-up of the demonstration train, the College of Agriculture of the University of California has equipped two cars with exhibits which show the meaning of advanced methods in horticulture and agriculture. These exhibits are so arranged that visitors to the cars can very readily understand their meaning, and with the aid of the Experiment Station men accompanying the exhibits their practical utility is insured.

During either all or a part of the time that the train is in Southern California the following University representatives will accompany it:

President Benj. Ide Wheeler; Prof. W. T. Clarke, Supt. University Extension in Agriculture; Mr. J. B. Neff, of Anaheim, Conductor of Farmers' Institutes for Southern California; Prof. F. T. Bioletti, Viticulture; Mr. R. E. Mansell, Cover Crops and Truck Gardening; Prof. C. M. Haring, Veterinarian, Sanitary Milk Production; Prof. E. W. Major, Animal Industry, ant Prof. Ralph E. Smith, Plant Pathology. Other experts will be callet on as the occasion may demand.

The Best Blackcap in Cultivation! Fine for Canning!



A Dish of Plum Farmer Raspberries

Plum Farmer Raspberry

Discovered years ago in a lot of plants received by us from Ohio, it was named in my honor by a friend of mine. You can rest assured that I would never have allowed it to be sent out under that name had I thought it anything but valuable.

It is the largest, most productive, best colored and most attractive blackcap in cultivation. The plants are models of growth, healthy and very vigorous. When not in leaf, they present a silvery bluish appearance. Plum Farmer Raspberry will succeed where other blackcaps fail. It is very early and ripens the bulk of the crop in a short time. The fruit is not jet-black, but of a grayish appearance, enormously large, sometimes measuring one inch in diameter.

The berry-growers in this locality have gone wild over it, setting it to the exclusion of all other blackcaps. It sells for highest prices, bringing as high as 12½ cents per quart right at the grower's door. It has created a furore among growers and excites the admiration of all when shown on the market.

This description is by the Plum Farmer. I wish all my friends to try this berry.

Plants Ready. Send for Catalogue.

A. Mitting, Santa Cruz, California

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75 varieties of ***Sweet Peas*** Separate Colors, 5c per Pkt. 15 Leading Varieties, post paid, 50c. 4 Varieties, that bloom in 45 days, 25c. This is the besttime to plant.

Onion Seed First Quality Yellow Danvers and Australian Brown for Main Crop. Germination over 95% by test. Per lb $1.75.

Get Our New Catalogue

Eucalyptus All the Leading Varieties in seed @ 15c per package, (Six of the leading varieties, E. Rostrata, E. Leucoxylon, E. Rudis, E. Globulus, E. Corynocalyx, and E. Tereticornis for 50c, with cultural directions). 500,000 Plants, all varieties. State your wants and get prices. Send 10c for large packet each of our new ***Cabbage Head Lettuce, King of May*** and ***Brown Dutch***, earliest and finest flavor.

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We have a full line of Nursery Stock, including citrus and deciduous fruit and nut trees: Also eucalyptus trees, 15 varieties.

ROSE BUSHES, ORNAMENTAL, SHADE AND STREET TREES.

We publish a price list, a descriptive catalogue. and a special Eucalyptus pamphlet.

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1-2 Million Eucalyptus Trees In Variety

Transplanted in flats of 100 each. We prefer orders of 1000 rather than 10,000; outside limit 20,000. Our trees are of the highest standard in quality. Correspondence invited. Our Booklet telling when, how, and what to plant free to our patrons only. Address

W. A. T. STRATTON, Nurseryman, Petaluma, Cal.

Farmers, Take Notice

To increase your crop in quantity and quality you must fertilize. The Tom Lewis fertilizer insures big crops for everything that grows. The best and cheapest fertilizer made. It is the farmers' money maker. No trouble to use. Big crops are sure to follow. This fertilizer produces 6 to 10 pounds of grapes to the bunch. For catalogue and prices write

Thomas Lewis, 1916 10th Street, Sacramento, Cal.

Small Fruits and Vegetables

INTENSIVE VEGETABLE GARDENING.

WE READ in a paper some time ago of a clever city girl's way of raising vegetables in spite of great difficulties. Even those of us who are fortunate enough to live in the country have seen the back yard of a typical city flat—the narrow strip of damp ground, shaded almost all day by high fences and an ugly shed in the rear. This girl planted the two feet along one side fence on which the sun did shine afternoons with sweet peas and a border of red topped beets. Across the shed she coaxed a squash vine to grow, the big yellow squashes ripening on the sun baked roof.

The sun did beat down on the back steps, so here was the main garden. A window box, twice as wide as those usually made for flowers, and as long as possible was placed at the sunny porch window. In this, filled with rich soil, she planted four egg plants and sowed radishes broadcast. These were ready to eat in three weeks, and by planting seeds as the radishes were pulled out, the supply kept up all season. Around the edge went wax beans for a hanging border and up either side of the window were trained running cucumbers. Two large boxes were made for the steps in which were trellised tomato vines. In hanging baskets were small pear shaped tomatoes, bell peppers, curled parsley and cooking mint.

The "garden" was as pretty as flower boxes could have possibly been. And it was so small that after the beds were once prepared even one busy woman could care for it without making the pleasant work a burden.

I wonder if our busy farm women can not take a hint from this city garden. You know that many of our kitchen gardens are so large that with even indifferent care much must go to waste or be sold at great trouble. And, what is worse, most of them are so far from the kitchen that it does not seem worth while to walk that long distance and back again when there are only a few minutes anyway in which to pull weeds, hoe, or gather vegetables. Start a new garden this year. It is surprising how small a patch of ground will raise all the vegetables your family can eat if the ground is fertile and well cared for, and attention be given it daily instead of whenever it is not crowded out by other things.

Try intensive farming on a small scale, in a scrap of a vegetable garden near the kitchen door, planted only to the things that your experience has proved best liked by your particular family. See if you don't enjoy it and find the burden very light.

A BIG INDUSTRY.

People do not realize the size and importance of the beet sugar industry. Two-thirds of the world's sugar is beet sugar. America each year imports from Europe sugar to the value of all her receipts for exported grain

Sugar beets are, setting all extravagant statements aside, about the most profitable of all crops. Different soils require different times for planting to get best results, but generally speaking the damper the soil the earlier the beets should be planted.

A few pointers on planting and care are as follows:

First—Preparation of land: Beets require a deep soil that should be cultivated to a generous depth to allow the tap root plenty of room to grow downward. Cultivate and pulverize it thoroughly.

Second—Seed: There is often much complaint among farmers because the factory insists upon furnishing the seed, but there should be no hard feeling on this score. The factories' and the farmers' interests are identical. Each is interested in getting the seed that will produce the best results. One per cent. difference in the amount of sugar in the year's crop of beets means, in the aggregate, a big difference to the factory. Most of the seed used is imported from Germany and has a pedigree of about 75 years. Exhaustive tests have proven it absolutely the best.

Third—Planting: Use plenty of seed. You want above all things to get a good stand. Many have a tendency to use too little seed, but this is a mistake. Every plant that comes through helps to break the way for its fellows, if the ground is at all crusted. Get a good stand and thin to the proper amount. Plant seed just deep enough to reach moisture and no deeper, one or two inches being the best depth; never exceed three inches.

Fourth—Care: Cultivate often and thoroughly. Work shallow at first, later on deeper. Keep as near absolutely clear of weeds as possible. Every weed steals moisture and food from your beets and profit from you Do not spare work or pains. Germans, the best of beet raisers, say the sugar is hoed into beets.

Fifth—Harvest: Beets must be harvested before they start a second growth. After the second year's growth starts they will lose rapidly in sugar. In topping cut away the portion that grew above ground.

As soon as the crop is off plow the ground very deep. Later in the fall give it another and shallower plowing.—Dr. G. W. Shaw.

THE BOLL WEEVIL INVASION.

A few years ago there was introduced into the South a small insect from Mexico, which attacked the cotton and immediately began to cause serious damage to the crop. This insect, known as the cotton weevil, has spread rapidly through Texas and parts of adjacent states and has destroyed millions of dollars' worth of cotton. All efforts in the matter of eradicating the insect were unsuccessful. It was found by the government however, that by improved systems of farm practice, diversification of crops, the application of knowledge gained in laboratory studies and in field work, cotton could be grown despite the presence of the weevil. It was found, furthermore, that the distribution of publications was not sufficient to arouse and awaken an interest on the part of the farmer. To meet this urgent condition the department inaugurated a movement, which has spread rapidly through the South and which has had far-reaching and decidedly beneficial effects. This work has for its object the direct cooperation of the department with the individual farmers throughout the several states involved in the work. The department, in other words, has organized what it calls "farmers' cooperative demonstrations." The method, through its very simplicity, is most effective. Trained practical men in the different sections visit the farmers themselves, and induce them to adopt modifications in their method of cropping, handling the soil, planting the seed, etc.—December National Magazine.

FERRY'S SEEDS

Ferry's are best because every year the retailer gets a new supply, freshly tested and put up. You run no risk of poorly kept or remnant stocks. We take the pains; you get the results. Buy of the best equipped and most expert seed growers in America. It is to our advantage to satisfy you. We will. For sale everywhere. Our 1909 Seed Annual free. Write to

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Marshall's Nurseries..

Growers of

Fruit Trees, Grape Vines, Shade and Ornamental Trees and Plants.

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S. W. MARSHALL & SON
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CRIMSON WINTER RHUBARB

$1.50 a Dozen, $6.00 per 100, $40.00 per 1000

Now is a good time to plant. Pedigreed Stock.

Fruit Trees and Berry Plants of All Kinds.

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Pasadena, Cal.
Rhubarb and berry specialist

The Seed House
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Great Southwest

Headquarters for Ranchers, Gardeners, Nurserymen and Poultrymen. A special Eucalyptus Department. Write for catalogue.

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Plant Berries

Mammoth, Austin, Gardena and Lucretia

Dewberries

California Surprise (earliest of all raspberries), Miller and Cuthbert

Raspberries

Giant Himalaya Blackberry, Loganberry, Burbank's Phenomenal and Mammoth Blackberry and

Strawberries

Write for Catalog.

G. H. HOPKINS & SON
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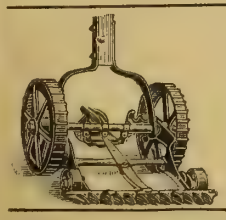

THE CLIPPER
Will cut tall grass and weeds and do all the trimming along the walks and drives. Your dealer should have them—if he has not drop us a line and we will send circulars and prices.
Clipper Lawn Mower Co.
Dixon, Illinois.

EUCALYPTUS TREES
Large Assortment. All Varieties.
MONTEREY CYPRESS
Transplanted in flats 100 each. Write for prices, giving amount wanted.
W. A. REINHOLDLT
Main Street Nursery, Petaluma, Cal.

Stewart Bros. Nursery

First-class Fruit and Ornamental Trees. A large assortment on hand. Order early while we have plenty of select stock.

712 So. Spring Street, Los Angeles

Montana had some 40 degrees below zero weather last week.

The Ornamental Garden

SPRING FLOWERING BULBS.

IN the most extensive Dutch catalogues of bulbs for fall planting, fully two hundred species, and toward four thousand varieties are offered. Specialists in different lines offer a still wider choice in their lines, so that of Daffodils, alone, the enthusiast may have over five hundred named variations.

When it is remembered that in the mild climate of California along the coast-wise regions from Mendocino county south, fully four-fifths of the bulbous plants can be grown successfully out of doors, some idea of the wealth of material at our command can be had. An enthusiastic grower, with a long purse, might have a dozen new varieties for each day that intervenes between the earliest arrival and midsummer's heat.

There is a charm in bulbous plants shared by no others. Our roses, our pansies and our geraniums are with us continuously for many months. Finally we tire of them and pass

splendid specimens unnoticed. The bulbous plant, on the contrary, stores its energies for one brief glorious period of bloom and then comes to us with a charm that commands our admiration. There is nothing old or tiresome in a garden rich in bulbs, for every day brings something new and it is gone for the year before we have had time to tire of it.

One might object that we have so short a period of enjoyment for long months of waiting, but to that it may be replied that the bulb asks little and, after flowering, modestly gives way to others and sleeps a long sleep until awakened by the autumn showers to another period of root activity. Properly planted, a bulb bed gives far more return in acceptable bloom than an equal space in any other form. I am sorry to say that it is only in a few California gardens that any large variety of bulbous plants can be found or even well-selected assortments of the well known favorites, such as Daffodils, Tulips and Hyacinths. I very much doubt if in any part of the world greater success will reward equal effort, but as with our raisins, our prunes and our oranges, we have to learn the "know how" first.

In the space at my command it is out of the question to even mention the hundreds of beautiful things under this head and I will confine myself strictly to the three species just mentioned, only remarking that the same principles apply, in a large measure, to all other bulbous plants growing in our mild climate.

The Culture of Narcissus, Tulips and Hyacinths.

Early Planting.—The bulbs should be planted just as soon as they can be secured. If they are planted before the first fall rains all the better, for they will begin root growth as soon as moistened and are not in the least danger of drying out. I begin planting in August and September. The roots will grow vigorously all winter and give a correspondingly vigorous bloom. The originals of Tulips, Hyacinths and Narcissus are from regions where the climatic conditions are almost exactly the same as in California—as in Greece, Asia Minor and Spain.

While early planting is advisable and far preferable, they can also be planted later here than elsewhere with a degree of success. In the east and northern Europe there can be little root growth in midwinter, while our midwinter is as favorable as their October or April. For this reason these bulbs can be planted as late as February here. Never delay if possible to avoid it, as the bulbs lose vitality and there is as well the loss in root growth.

As To Situation and Shade.

While we have such an advantage in the matter of bulb growth through the fact that all of our winter is good growing weather for the bulb roots, we have a corresponding disadvantage in the fact that bulbs have a tendency to flower too early and with short stems and small flowers. A few weeks of mild, open weather in February, which we are more than apt to get, may bring bulbous plants into a premature flowering, which would come into their best estate toward the second week of April. This disadvantage is easily met, but it is owing to a lack of knowledge how to do that the greater part of the lack of success is to be attributed.

I well remember how some years ago I imported a very fine lot of Hyacinths and Tulips from Holland and planted them in a well-prepared bed fully exposed to the sun to the southward of my house. In February they were in full flower with stems which barely cleared the flowers from the ground and correspondingly poor flowers, for the flowers of such things grow materially in size after color shows. I was taught by this failure that they should be planted in the

(Continued on Page 111.)

DOUBLES YOUR CROP

"No tree too high, no field too big for this king of sprayers." For orchards, vineyards, potatoes, weeds, etc. No hand pumping required—works automatically. One man can do more work with this machine than two men with the old style sprayers. Saves labor, time and money.

HURST SPRAYERS ON FREE TRIAL

No-money-in-advance, no-bank deposit, shipped direct to you at dealer's Wholesale-prices. Pay us out of the "extra profit." This Man-Power Sprayer (shown below) is an all-purpose machine for the medium sized growers, cheap in price, light, strong and durable. All our sprayers are GUARANTEED FOR 5 YEARS. We pay the freight. Write a letter or card to-day—and we'll send you Spraying-Guide, Catalog of all-kinds-of-sprayers, and Special-Free-Sprayer Offer for first in each locality this season. Don't delay—Write now

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GOOD Seeds

Trees-Plants-Bulbs

NEW 1909 CATALOGUE

Just off the Press

116 pages, fully illustrated contains information of value to planters. General facts about seeds, plants, bulbs, flowers and trees; when and how to plant; the best garden tools, etc. Sent free on request. Write for copy.

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New Crop Seed

Plant Good Seed
Reap Good Crops

We carry everything in good new

Grass
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Vegetable SEEDS

Don't fail to plant our celebrated

Big Leaf Jersey Kale

for your poultry.
10c per oz.

Send for Booklet

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P.O.Box C, Petaluma, Cal.

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C. Bagnall, Prop.
GROWERS AND IMPORTERS OF
Grass, Vegetable and Flower Seeds
All Kinds of Bulbs and Onion Sets
609 J St., Sacramento, Cal.
Send for Catalogue. Please mention Cultivator.

When writing advertisers, mention Cultivator.

Peach Trees

To insure prompt delivery, order at once. A choice lot of

Muirs
Lovells
Phillips
Tuscans and
Elbertas

in different sizes
SPECIAL rates on 500 or more trees.

FIRST Here—FIRST Served.

Oregon Nursery Co.
Salem, Oregon

Grafted Walnuts a Specialty

15,000 Trees, Grafted and Seedlings

Grafted trees grafted on Northern black and California soft-shell roots. Seedlings grown from selected nuts from grafted trees selected by myself. Place your orders early to avoid the rush and get the best trees. Price 15c and up. Took first premium on nuts and trees this year. Some lemon trees still unsold. Fine lot of Kadota Fig trees.

Whittier Nursery
Established 1887 by Present Owner
CHAS H. HAMBURG **Whittier, Cal.**
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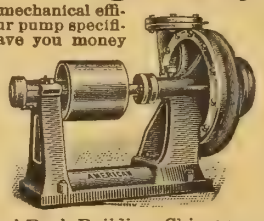
25% More Water than is produced by any other pump using the same power or a given amount of water can be raised with 25% less power by the

American Centrifugal Pump

Guaranteed highest mechanical efficiency. Give us your pump specifications. We can save you money and labor. Catalog for the asking.



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Colorado Grown Trees

Because your order gets our personal attention, whether evergreen, or forest, ornamental or fruit tree; whether small fruit, shrub or rose bush, we guarantee it to be grown in Colorado; healthful, well-rooted, true to name. We give premiums to club-makers. We pay freight on $10 orders. Agents wanted. Send for free catalog today to

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Placentia Perfection
Scions
Seedlings
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Walnut Trees
O. W. LITTLE ***Fullerton, Cal.***

Semi-Tropic Nursery

The undersigned takes pleasure in announcing to all who desire to raise choice fruits that his **Kadota Fig** and **California Concord Grape** are still in the lead as the choicest of table fruits. I am prepared to furnish these trees and vines in retail or wholesale lots. Circulars sent to all who send for them.

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WOODMANSE STEEL WINDMILLS

The strongest and best ever produced in America, it precedes all others in pumping. A full line of repairs for all style mills kept on hand. Look up your agent in your location for Woodmanse mills. If you have no agent write direct and I will gladly answer all correspondence and send circulars.

F. H. OSLER **Southern Cal. Agent** **Pomona, Cal.**

Fresh Field and Garden Seeds

Seed Potatoes, Onion Sets, Garlic, Etc.

S. S. WALLACE & CO.
Seed Merchants.
507 N. Main St., Los Angeles, Cal.
18 Years in business.

Irrigation and Forestry

WATER-RESOURCES INVESTIGATIONS.

The United States Geological Survey has recently been instructed by the Secretary of the Interior to make an examination of the Moki and Navajo Indian reservations to determine whether or not ground waters exist there in sufficient quantities to justify development.

The region occupied by these tribes is a high desert east of the Grand Canyon of the Colorado. The Navajo are best known as the makers of Indian blankets of unique design and of particularly fine quality. Both the Navajo and Moki are pastoral tribes, herding within their reservations flocks of sheep and bands of cattle. In places where sufficient water is available small areas have been put under cultivation, Indian corn, melons, and a few vegetables being raised.

The reservations are rather rarely visited by white men, although they comprise some of the most picturesque areas in the great plateaus of the Southwest. San Juan River, one of the tributaries of the Colorado, flows along the northern boundary of the reservations in a canyon that resembles that of the Colorado, but is somewnat smaller. Just south of the Moki Reservation is the Little Colorado, which, before it joins the Colorado likewise sinks into a deep canyon whose walls are made up of vari-colored sandstone and limestone.

Mountain groups like the Carriso and the Tunitcha mountains rise above the variegated desert that forms the greater part of the reservations. These mountain masses are huge, flat-topped mesas, rimmed by cliffs that make them difficult of access. On some of them there are a few small lakes, and many of the springs that rise at the foot of the slopes leading to them are the sites of the temporary homes occupied by the more or less nomadic Indian races.

During dry years the natural sources of water supply are inadequate for the needs of the Indians and their herds, and the Indian Bureau, which has conducted reclamation investigations in the past and is now planning to increase the area under irrigation by constructing dams and canal systems, wishes also to increase the number of places within the reservations where water can be obtained for range purposes. With this end in view it has asked that this investigation be made.

EUCALYPTUS PLANTING.

To give an idea of the spread of Eucalyptus gospel we quote below from report of companies already formed in this state which will engage in Eucalyptus planting.

Foreign—California Eucalyptus Timber Company of Missouri, incorporated July 20, 1908.

Domestic—From Los Angeles—Eucalyptus Development Company, October 29, 1907; Eucalyptus Estates Company, May 7, 1908; Eucalyptus Growers' Association, May 13, 1908; Eucalyptus Land and Timber Company, July 16, 1908; Alfalfa Eucalyptus Ranch Company, August 26, 1909; California Eucalyptus Company, February 29, 1908; Eucalyptus Timber Company, July 17, 1907; Hosp Eucalyptus Forest Company, November 11, 1907; Los Angeles Eucalyptus Company, December 23, 1907; Pratt's Eucalyptus Association No. 1, May 24, 1908; Southern California Eucalyptus Growers' Association, January 2,, 1908; Western Eucalyptus Company, March 2, 1908.

From Fresno—Eucalyptus Plantation Company, July 1, 1908; Eucalyptus Forestry Company, January 21, 1907.

From San Francisco—Pacific Eucalyptus Company, July 21, 1908; Eucalyptus Culture Company, September 11, 1908.

From Sacramento—International Eucalyptus Association of California, August 7, 1907.

From Riverside—Eucalyptus Lumber Company, May 12, 1907.

From El Cajon—Southern California Eucalyptus Forest Association, May 27, 1908.

GIANTS OF MERCED COUNTY.

Six of the Most Valuable New Fruits

Ever Introduced in California

"Improved French" Prune
Originated by Luther Burbank
"Concord" Walnut French Variety
Grafted trees only. Better than Franquette or Mayette
"Paul" Cherry Finest Black Cherry
"Philippi" Grape Handsomer than Tokay; a month earlier. Disinfected cuttings only, to comply with quarantine laws.
All these, like Muir, Lovell, and Phillips Cling Peach, are of California origin.
"Comet" Red Currant Much larger, earlier and sweeter than any other.
"May Duke" Gooseberry
Earliest of all; large; smooth skin.
Write for Further Particulars.
EUCALYPTUS TREES by the 1000 or 100,000. No stronger stock; grown in the open, without lath shade or screen, therefore hardened to all weather.
GENERAL NURSERY STOCK

Leonard Coates Nursery Co., Inc.
EST. 1878. INC. 1905.
Morganhill, Santa Clara County, Cal.

Vigorite Brand Hydrated Lime

Our **Hydrated Lime Department** is constantly gathering practical and scientific data on use of **Hydrated Lime** as soil **Fertilizer, Dust spray, Etc.** which is at your disposal. References furnished showing great **Efficiency** and **Economy** in its uses. Correspondence solicited. Write for sample and prices to

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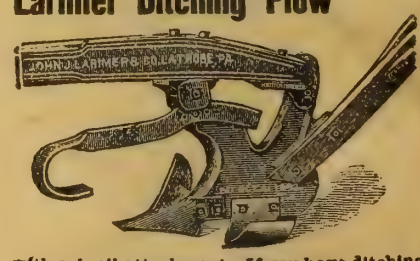
Incorporated
Mutual Savings Bank Building, San Francisco

Larimer Ditching Plow



with subsoil attachment. If you have ditching to do, this plow will save you more money than any implement you have on your farm. Reduces cost of digging ditch from one-half to two-thirds. Send for descriptive circular.

LARIMER MFG. CO.,
EOLA, (near Chicago,) ILL.

5000 Grafted Walnuts

1 and 2 year old grafts

On California black and English walnut roots. The stock of the California black are all from northern grown seed from large trees.

Prices very reasonable.
Eucalyptus in variety.

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Trees French Prunes on Peach, and Apricots. Muirs and Tuscan Clings, and many other varieties of Peach Trees; all fine budded stock. Large stock of all the leading varieties of Apples, grafted on whole roots and free from all pests. Also a fine stock of Cherries, Pears, Plums, etc. Send for price list.

A. E. SCHEIDECKER **SEBASTOPOL, CAL**
Prop. Pleasant View Nursery.

Crimson Winter RHUBARB

$1.50 a dozen, $6.00 per 100, $40.00 per 1000. Now is a good time to plant. Pedigreed Stock. Fruit Trees and Berry Plants of all kinds.

J. B. Wagner, Pasadena, Cal., 'Barb Specialist.

Walnut Trees

Grafted or grown from carefully selected seed. Postal gets prices.

A. A. Mills, Anaheim, Cal.

Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

By Mrs. Minna E. Sherman

RANCH DOINGS.

NOW this comes in reply to a letter asking, What are you doing in general farming at this season of the year? The barley is nearly all sown and most of it is coming up well. The sudden rains of ten days ago caught us with one day's more plowing on the heavy land. On the sandy mesa land the barley is several inches high. Now the heavier lands always present somewhat of a problem, as they must be plowed at the right time if they are to do well. The rain coming when it did caught the land, that was newly turned bermuda sod in spots and now the seeding has started to come up before it was disked. While we may try to harrow it later still I rather think it will not be practical to do so as the sods will drag the seed out of the soil. There is one thing, however, that is constantly neglected in California that pays well on the grain fields if they are free from sods and trash. This is to harrow the grain if the land crusts. The harrow can be run over grain that is several inches out of the ground, and while it will uproot a little it will increase the growth of the hay greatly. In seeding land to grain I often think if less was planted and it was put in better it would pay. The vineyardist regards grain as of secondary importance, yet the saving of growing hay rather than buying it is better than having a crop of grapes on hand that are unsalable, for where oh where will the coin come from to buy the hay for the faithful horses?

Drills.

Some should invent a cheaper drill or else invent one that would work on the nickle in the slot basis; then, if it was hired out it would collect its own rent. Wheat or barley put into well plowed land with a drill will yield in ordinary years a third more than when sown with the Stockton gang plow. The trouble with the gang plow is in the man not watching the seeder part and allowing it to choke up with trash. Then with the drill one is sure of putting in enough seed. I do not always get as much seed on the land as I would like even with the constant watching to see that enough is used. One hundred pounds to the acre is none too much on any land and some time heavy land should have twenty-five pounds more. This year a hundred pounds has been the amount we have tried to sow from the gang plows, but I doubt if we have gotten on more than eighty pounds to the acre. As the land was in oats last year and it was not long enough to harvest, owing to the long drought in the spring, this oat seed will make out the crop to the full amount we think and the two feeds together should make superior horse hay. If the season proves favorable the mesa lands will make a hay crop this year. The lower lands that are heavier soil may suffer by the seed rotting if the weather should turn cold after the heavy soaking rains of the past ten days. Farming is a matter of averages, for no matter how well we do the work the weather and soil must do the rest. How rarely is the season absolutely propitious! This year the intense heat of a few summer days burned the abundant crops of grapes while at the end of the season the drying weather was perfect. The golden days of the fall had those deep blue shadows that the French Impressionists delight in painting. Other years the grapes have ripened in their perfection of beauty, only to meet with the down pouring rain when on the trays. Yes! from the mere low standpoint of money it is better to be a banker or a pawnbroker, then when our crops go down, their crop grows quickly into a harvest of hard gained money of the people. Night and day interest piles up. While the banker sleeps his money never rests its earnings. Yet the narrowness of spirit that comes with the accumulation of wealth makes few of us wish for more than a "cot beside the rill" to end our days in peace, when the time comes to fold our hands. The educating in the Christ spirit of love, the spirit of giving, to those we love, gifts at Christmas makes it sad when the stores are not full of Christmas buyers at that season. Many a heart ached this year over unsold raisins that made rigid economy necessary in the home at Christmas time.

Hungarian Millet.

The millet sown last spring as a catch crop proved to be only waiting for at the first rain up it came, somewhat bunchy to be sure, but by growing all night as well as all day it is now in spots two feet high. There was too nearly a stand to destroy it completely, so the rest of the land was harrowed and seeded to millet with the small alfalfa hand sower. This seed is now coming up nicely and it promises to be a paying crop after all. How well the horses will eat it remains to be seen. What a useful little implement the hand sower for alfalfa is on the ranch! Where ever broad cast seeding is desired they can be depended on to do the work thoroughly for eight paces wide. Speaking of implements, I believe we have never had a better investment than the squirrel smokers; the third one is now in use and it is a money saver on the grain fields. The ranch was gone over in October and every hole smoked and stopped up. No squirrels were seen until the grain began to come up, then they moved in from the neighborhood. Now if they are allowed to stay, a few weeks will bring on a new addition and with a circle of eaten off grain around each hole the loss is considerable, while the undermining of the soil near the canal or on the creek banks becomes troublesome from caving in and washing out on the banks. Granny, the oldest saddle mare, is hitched up to an old buggy and the smoker put in with six sacks of dampened manure or old straw, a bundle of shavings to light the fire, a shovel to stop the holes and bag with some seed barley and a rake. On top of all climbs Robina and the man is the important factor in this work, for if he is not thorough the work is use-

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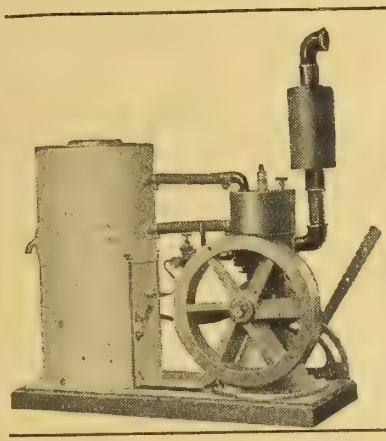

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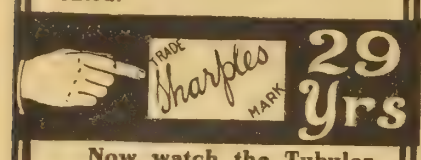

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less. Granny is indignant at the restraint of the shafts and balks at pulling, but after a few minutes repents and goes off on a hop skip lope before settling down to a trot. Every man on the ranch keeps his eyes open for squirrels and reports at the table his discoveries. After the holes are filled with smoke and stopped with earth, the spots where the little fellows have eaten the grain are raked over and resown with the barley. The barley field is kept in good shape and next year the mowers will not be running into holes. Every year the papers report cases of men thrown under the mower by horses falling from squirrel holes; one can hardly be too careful to prevent these accidents. This is one of the reasons why I prefer to smoke the squirrels out rather than to use poisoned wheat, for that leaves the hole open. Another reason is that two horses have died on the ranch from poison that must have been in wheat raked up in the hay; as this happened after the years in which a large amount of poisoned wheat was spread out it has made us very shy of putting out poison where animals can possibly secure it accidentally in their food.—M. E. Sherman.

NATIONAL LIVE STOCK ASSOCIATION.

(Continued from page 83.)

ation of railroads, greater size of trains, larger cars, and increased density of traffic, all of which would seem to warrant a reduction instead of an advance in rates, I contend that it is reasonable that before any advances are permitted they should be passed upon and receive the approval of a tribunal like the Interstate Commerce Commission. As it is now, the burden of contesting advances rests upon the shippers, many of whom are unable to defray the expenses of protracted litigation which may last five years as in the Texas live stock case.

The terminal charge case, which this association has been prosecuting for many years is still in the courts, but I am glad to inform you it has finally reached the Supreme Court of the United States once more, and a decision by that court is expected early this year.

This country produces better live stock and meat products than any other nation, and we have a surplus for shipment to these countries where meat is scarce. Although we are a nation of meat consumers, with a population of close to 90,000,000, the surplus of meat produced in the United States has been estimated to be large enough to feed either the United Kingdom or the German Empire for nearly half a year, or both for nearly three months, and the population of those countries is greater than the population of the United States. The price of our surplus largely fixes the price of our live stock at home, and the importance of increased foreign outlets cannot be overestimated.

According to the elaborate reports of the Department of Commerce and Labor, the exports of cattle from the United States during 1908 are the smallest since 1893; they average 50 per cent less than for 1906 and 1907. Our exports of nearly all classes of meat products also show a marked decrease over preceding years, only the exports of ham and lard showing no appreciable change. During the past 12 years, the total value of all our exports has almost doubled, while during the same time our exports of live animals or meat products have either remained about stationary or have shown a decrease. Our foreign trade in live animals and meat products is in a very unsatisfactory condition, and unless steps are taken to open the markets of continental Europe it will show a further decline.

Every once in a while we hear a general clamor from consumers about the high price and scarcity of meat. As a matter of fact, meat is not high in this country, and there is no scarcity. The great trouble is that too many Americans want only the choicest cuts, and as a meat animal has only a small percentage of the choice portions, necessarily they sell at a considerable premium. The less desirable cuts constitute the bulk of a carcass, and if they do not meet with a ready sale, and at a reasonable profit, then the retailer must secure proportionately more for the choice cuts. Before American consumers can expect cheaper meats, they must either learn how to economically utilize all parts of the carcass, or there must be some foreign outlet found for those portions which the American does not seem to want, and which the foreign nations are anxious to purchase. From every aspect, the importance of carefully fostering our foreign meat trade is manifest, and should receive your attention. . .

If you have followed the tariff hearings through the newspapers, you have noticed that the leather manufacturers were well represented before the Ways and Means Committee, and that they demanded free hides, claiming that the consumer would profit thereby, and insisting also that the producer received no benefit from the present duty. If the manufacturers are entitled to protection ranging from 50 per cent to 100 per cent on the products of their labor, surely the farmer and stockman is more than entitled to the very modest protection of 15 per cent on hides. From the standpoint of exact justice, the tariff on hides should not be less than the tariff on leather goods, and that would mean an advance of the tariff on hides. I have not heard that the leather people have expressed any willingness to scale down any of their protective duties, notwithstanding the fact that our exports of leather goods have increased amazingly in the past two years. There have also been numerous demands made before the Ways and Means Committee for reduction in the tariff on wool. What I have said regarding the tariff on hides applies as well to wool and live stock. In my judgment, the tariff on these articles should remain as at present.

From present indications there will be called an extra session of Congress to take up this tariff question, and there will be the most intense controversy by every interest to protect its business and to secure the most favorable terms possible. In former years the live stock industry has been a laggard in matters of this kind, and it has reaped the reward of indifference. But in future considerations of these questions, the interests of our members will be carefully looked after by your officers. Do not, however, rest secure in the belief that because your officers are at work on these matters there is nothing for you to do. I cannot too strongly impress upon you the importance of strengthening and supporting your different live stock associations. If the live stock men throughout the West

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During the past few months we have had an example of the splendid efficiency of the Department of Agriculture and the Bureau of Animal Industry in its prompt and effective action in stamping out the foot and mouth disease in Eastern states.

Before closing, it may prove of interest to many of you to refer briefly to live stock conditions in California. Proportioned to its area, California cannot be classed as a great live stock State. Out of the 72,000,000 head of cattle in the United States, California possesses only about a million and a half; of the 53,000,000 sheep in this country, California has about 2,500,000; and of the 54,000,000 hogs, California has only about 500,000; from which you will observe that this state has relatively fewer hogs than any other class of live stock. In fact, our packers are compelled to ship hogs in here from Kansas and Nebraska

to supply the demand for fresh pork, and a large part of the cured pork products consumed in California are shipped in here from the East. With proper attention to that branch of live stock production, the California farmer ought to be able to supply all the hogs needed for consumption in this state, and it is a matter worthy of the earnest consideration of all interested. Undoubtedly, on some of our high-priced fruit lands, the production of live stock would not pay, but there are large tracts throughout the state where mixed farming, in connection with stock raising, would be exceedingly profitable. Those states which follow a diversified agriculture, and feed on the farm a good share of their grains and grasses, are noted for the fertility of their soil. Continual cropping of the land impoverishes the soil, but the feeding of live stock on farms enriches, and, in some cases, increases its fertility. This subject is well worthy of consideration by our small farmers.

TESTS OF HOG CHOLERA VACCINE.

The act of Congress making appropriations for the Department of Agriculture for the fiscal year ending June 30, 1909, provides as follows:

"That the Secretary of Agriculture is authorized to purchase in the open market samples of all tuberculin, serums, antitoxins, or analogous products, of foreign or domestic manufacture, which are sold in the United States for the detection, prevention, treatment, or cure of diseases of domestic animals, to test the same and to publish the results of said tests in such a manner as he may deem best* * *."

In conformity with these provisions, samples of the following products have been tested by the Department.

1. Bruschettini's Hog Cholera Vaccine.
2. Bruschettini's Hog Cholera and Swine Plague Serum.

Both of these products are distributed by The Sorby Vaccine Company (Inc.) 163 Randolph street, Chicago, Ill.

Bruschettini's Hog Cholera Vaccine.

Two forms of labels for this product are known to be used. One reads in part, "Hog Cholera and Swine Plague Vaccine, Bruschettini." The other label is in Italian and French and reads, "Vaccino contro il colera dei suini (vaccin anticolérique des pores) Bruschettini."

In testing this product the directions for use furnished by the distributors were carefully followed. The test was made by injecting healthy pigs with Bruschettini's hog cholera vaccine and, after the lapse of ten days, placing these pigs in pens with hogs affected with hog cholera. All of the treated hogs remained well until exposed to disease in this way. After this exposure they all contracted the disease within the usual time, exhibiting typical symptoms, and all finally died, showing at autopsy typical lesions of hog cholera.

Bruschettini's Hog Cholera and Swine Plague Serum.

The labels on this product are in English and German and read "Serum Bruschettini against Hog Cholera and Swine Fever," and "Bruschettini'sche Serum gegen Schweineseuche und Schweinepest."

This product was also used in the manner directed by the distributors. Healthy pigs were injected with the serum and after twenty-four hours these were exposed to hog cholera by being placed in pens with hogs affected with that disease. All of the hogs treated with Bruschettini's serum contracted hog cholera within the usual period of time after exposure and finally died, exhibiting typical lesions of hog cholera at autopsy.

These tests indicate that neither Bruschettini's Hog Cholera Vaccine nor Bruschettini's Hog Cholera and Swine Plague Serum are reliable agents for protecting hogs from hog cholera.—James Wilson, Secretary of Agriculture.

The best thing for the young pigs is to get them out on the ground and in the sunshine. It is almost impossible to secure thrifty young pigs unless they have sunshine, exercise and a yard to run in.

The business of breeding pure bred swine is a business by itself and it should not be undertaken by anyone who cannot keep records straight and who is not willing to invest good money for improved blood.

The most conservative course is to select the breed most popular in your vicinity and improve upon the common individuals by the use of improved breeding-boars.

A large proportion of the growth obtained while the pig is less than five months of age costs but little actual money and to make the business profitable it is essential that we secure the most gain possible during the first few months of the pig's life.

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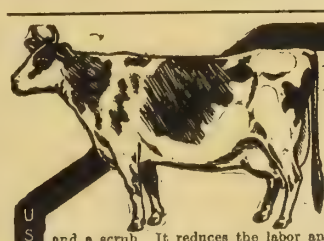

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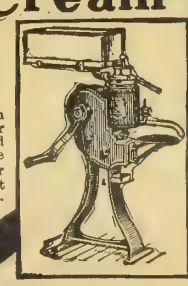

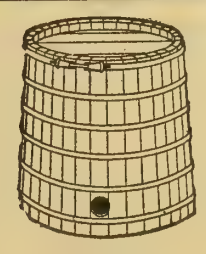

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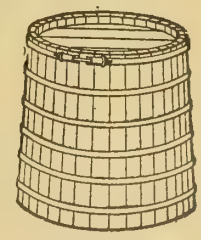

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Contents

IMPERIAL COUNTY ALFALFA FIELDS, Cover.
THE NATIONAL LIVE STOCK ASSOCIATION, 83.
CITRUS.—Preservation of Humus; Citrus Gumming in General, 84, 85.
DECIDUOUS.—Deep Cultivation of Vines; Seedling vs. Grafted Walnuts; A Lesson in Pruning Vines; Demonstration Train, 86, 87.
SMALL FRUITS AND VEGETABLES.—Intensive Vegetable Gardening; A Big Industry; Boll Weevil, 88.
ORNAMENTAL GARDEN.—Spring Flowering Bulbs, 89.
IRRIGATION AND FORESTRY.—Water Resources Investigation; Eucalyptus Planting, 90.
LIVE STOCK AND DAIRY.—Ranch Doings; Tests of Hog Cholera Vaccine, 91, 92, 93.
EDITORIAL.—Imperial Valley; Live Stock Industry; John Wasson; Race Track Legislation; State Fruit Growers Convention; Distribution of Figs; Make a Garden, 94.
AGRICULTURAL NOTES OF THE PACIFIC COAST.—Northern, Central, Southern, The Coast, 95.
POULTRY.—Roup; Los Angeles County Show; San Diego Show; Bantam Show; Chicken Chat, 96, 97, 98, 99, 103.
GENERAL AGRICULTURAL.—Gypsum, Its Adaptations; Culture of Field Corn, 100, 101.
BEES AND THEIR CARE.—Grading Rules for Comb Honey; Management of Bees, 103.
QUERIES AND REPLIES.—Sick Pigs; Oregon Questions; Tomatoes; Residue from Acetylene; Spraying Codling Moth; Water Required; Pears Immune to Blight; Grafted Vineyard; Advertise; Wind Pudding; Abortion; Various Questions; Egg Preservative; Paint for Flume; Farcy Remedy, 104, 105, 106, 107.
VETERINARY.—Looseness; Abscess; Mallein, 107.
HOUSEHOLD.—Be Strong; The Parrot and the Phonograph; About the House, 108, 109.
PRODUCE MARKETS.—Los Angeles Market; San Francisco Market; Citrus Markets, 110, 111.

IMPERIAL VALLEY.

The Cultivator has often referred to the wonderful possibilities and the developments which have occurred in a short time in the Imperial valley. Some of the sections of the state may possibly have felt that undue importance has been given to this section, which but a few years ago was one of the most complete deserts on the American continent, but the attention which this section has attracted is not only due to the marvelous improvements which a short time has brought about, but to the example which it has been of a weary waste of wind-swept desert being brought to wonderful productivity by the application of water and energy and endurance of the pioneer. Five years ago the writer was driven over many parts of the valley. Water was then being carried through its canals to the more accessible parts and the pioneer was erecting little temporary habitations to shelter him from the summer's heat. We recall seeing but two or three really permanent and well-built houses at that time. After that the break in the levee in the banks of the river admitted the flood waters to Salton Sink and caused questions as to the real destiny of this valley, for which so much had been hoped. A year or two of desperate effort was required to bring this giant of the waters under control and prove to the world the worth of this section and give the assurance that permanent advance had really begun. As soon as the waters were controlled, it was seen that the wealth of the country was at command of the Imperial people if necessary to secure the permanency of her investments, and improvements and developments began in reality.

In fact this development started with such leaps and bounds along certain lines that in the case of the cantaloupe industry, it was entirely overdone, but such mistakes are characteristic of every enterprise and will in time be corrected. and we believe the Imperial will become one of the greatest sections as to stock and dairy productions and many fruits. This is particularly true of the early grapes which will, we believe, bring wealth to that section.

One thing which may be said of the Imperial section is the manner in which the newspapers represent the agricultural industry. We know of no section in the state where the papers give such attention to the farming class as they do in the Imperial valley. We believe it is wise, not only from the newspaper standpoint, but from the welfare of the entire community. They may do some politics on the side, but one great desire of the paper seems to be "Increase our own productiveness and let politics take care of itself."

THE LIVE STOCK INDUSTRY.

The president of the American National Live Stock Association in his annual address to the members who convened in Los Angeles this week said: "Out of the 72,000,000 head of cattle in the United States, California possesses only about a million and a half; of the 53,000,000 sheep in this country, California has about 2,500,000; and of the 54,000,000 hogs, California has only about 500,000; from which you will observe that this state has relatively fewer hogs than any other class of live stock. In fact, our packers are compelled to ship hogs in here from Kansas and Nebraska to supply the demand for fresh pork, and a large part of the cured pork products consumed in California are shipped in here from the East."

It may be true that California has not ideal conditions for pork production, but certainly very favorable conditions. The shortage and high price of grain is possibly a drawback but the conditions favoring alfalfa and other pasturage for hogs 12 months of the year should induce our swine raisers to extend their industry until California at least produces her own fresh meat. We appreciate fully that no industry will advance rapidly unless it is remunerative. And that if it can be shown that hog raising is profitable it will be more and more entered into until the millions of dollars we now send beyond the Rockies for pork supplies may be retained on the Pacific Coast.

But the point here raised is this: May not the proper understanding of our resources and of the requirements of the industry lead to the extension of the industry in a way which will be increasingly profitable? If corn is not to be produced here satisfactorily and its shipment from the Middle West proves too expensive there are surely other grains which can be produced here for fattening. We trust the coming of this great association to our state will awaken a new interest in live stock.

JOHN WASSON.

The death of John Wasson of the Pomona Times takes one of the characters who has had to do with the building of California for many years. He has not been actively connected with agriculture in a productive way, but his interest in it is such that he has given much energy and ability to its advancement. He was the first president of the Pomona Farmers' Club and remained at its head for many years. He came to California many years ago, living first at Oakland, at which time he was intimately acquainted with the Crockers and other builders of the first transcontinental railway. Later he served under an appointment under Gen. Grant as Surveyor-General of Arizona, and for the last twenty years has been located in the Pomona Valley, either as editor of the Chino Champion or of the Pomona Times.

To a certain extent he entered into politics and was one of the independent and sturdy ones whose integrity was never questioned for one moment.

RACE TRACK LEGISLATION.

It now appears that the anti-gambling bill which is patterned after the Hughes bill of New York, will pass at the present session of the state legislature. This is not positively assured, for the gamblers are taking every step possible to throttle this campaign for decency. It is astounding that men living in reputable communities, could go home and face their constituency after voting against such a measure which stands for preserving integrity of the state. In speaking of the curse of the race track gambling as is conducted in California, Rev. Bob Burdette recently said: "It has made liars, and defaulters, and thieves out of trustworthy young men; it has debauched young women; it has sent men to the penitentiary; it has committed murder in peaceful Monrovia and in busy Los Angeles; not one murder, but several. Often as it comes, year by year, the police department prepares for action; it is warned to special vigilance by its chiefs, the district attorney's office strengthens itself, good citizens prepare for trouble, an army of hobos, confidence men, burglars, sneak thieves, pickpockets and all the riff raff of the under world come with the 'ponies.'

"A people too cowardly to fight such an enemy as this at our own doors would need a fleet to protect us in case of war. Fleet? We'd scream for a fleet of air ships to get away with."

STATE FRUIT GROWERS CONVENTION.

We have heard of no move toward a spring session of the State Fruit Growers. The fall session is always held in the northern part of the state and if the southern part of the state has one at all it is the spring session. If no request is made of the state office for this convention it is possible that it will not be held, but we are sure that if any community is interested enough to pull strongly for this convention a spring session will be held in Southern California. It was held in Riverside last spring and it was an excellent session.

DISTRIBUTION OF FIGS BY THE DEPARTMENT.

By accident a line was left out of Mr. Swingle's announcement in our issue of January 14, concerning the distribution of new varieties of figs and caprifigs as a bonus for planting seedling figs. One cutting is given for every three seedlings planted.

In view of the lateness of the date Mr. Swingle asks that any applications for the circular be sent to Walter T. Swingle, care Plant Introduction Garden, Chico, Calif., instead of writing to Washington as suggested last week.

MAKE A GARDEN.

This is the season of the year when seed should be on hand and ready for putting in the ground for the early garden truck. Spring is so quickly on us in California that we do not always take full advantage of its earliness. Some are even now planting potatoes, although this of course only in the most protected sections. But the hardier vegetables may be planted anywhere in this state this month. This is not meant for cultural directions at this time so much as to call attention to the fact that it is time to get busy and further that the garden should be made. Don't wait for the garden patch to be plowed, but spade up at the back door a small plat.

Shop Talk

WICKSON'S CALIFORNIA FRUITS.—As has been previously advertised, the fourth edition of "California Fruits and How to Grow Them," by Prof. Wickson is now on the market and is having a ready sale. It is a fine large book and no doubt the most valuable publication ever gotten out on the subject of California fruits. Neither is it "all theory" but is based on experience and knowledge after years of study.

The Cultivator has the agency for it and is able to forward them promptly upon receipt of order. These rainy winter days should be put to good use and we know of nothing better than to have a copy of this latest authority, in the house. An hour's study of this work at every opportunity will well repay any one the small expense. The price is $3.00 postpaid to any address in the postal union.

Agricultural Notes of the Pacific Coast

Northern California

Yolo county has 65,000 acres of barley planted.

Oroville will soon have a $50,000 pre-cooling plant.

Gridley dairy men report a very prosperous season.

Middletown, Lake county, has had several cases of anthrax.

Santa Rosa has had nearly 21 inches of rainfall to date.

Grass Valley has been given the blessing of 30 inches of rain to date.

Recent large sale of hops at Santa Rosa was made on the basis of 4 7-8 cents.

Ukiah rainfall for the month of January to this date amounts to 10¾ inches.

Napa county will soon vote upon a large issue of bonds for a good roads scheme.

An immense pre-cooling plant and refrigeration plant is to be established at Oroville.

About fifty feet of snow sheds were carried away by the big snow slides in Nevada county.

Glenn county rice fields are claimed to produce double the output which rice lands of the south do.

John Lynch of Petaluma has shipped several of his dairy shorthorns to a San Diego breeder.

Healdsburg grape growers approve of the sweet wine bill introduced by Senator Perkins into Congress.

Revenue men have been confiscating butter in the San Francisco market which contained too much water.

Stockholders of the California Fruit Exchange have received a dividend of 6 per cent which was declared at the annual meeting.

Farmers at Stony Creek, Glenn county, are aroused over the appearance of Johnson grass, which is the first. An organized fight will be made on it.

The Chamber of Commerce at Red Bluff is preparing an extensive exhibit of processed fruits which will be exhibited in the Ferry Building in San Francisco.

Sonoma county co-operative poultry association reports that the output of eggs of Sonoma county is growing steadily, the last year being the largest output in its history.

Farmers near Biggs dynamited the embankment of the Southern Pacific railroad during the recent flood, so as to allow the escape of water and prevent the flooding of farms.

The Sonoma County Farmers Mutual Insurance Company have elected officers for the coming year as follows: G. W. Smith, president; Harvey Gregory, secretary; John Strong, treasurer.

Tehama county sheep owners are objecting to the inconveniences to which they are subjected by the assessors of various counties through which their sheep are driven, and are asking better regulation of the taxation scheme.

The Lake County Mutual Fire Insurance Company recently elected directors for the coming year as follows: L. Sailor, Sam Jones, J. E. Shirley, C. White, L. P. Clendinin, R. P. Burris, N. Hurlbutt, M. S. Sayre, D. A. Robinson.

Central California

The State Creamery at Davis is pasteurizing all its milk.

The State Fish and Game Commission has just released three dozen Hungarian partridges at Red Bluff.

The creamery at the State School Farm at Davis is now turning out about 1,000 pounds of butter a week.

The owners of the seeder trust have reduced the royalty half a cent on raisins in order to move the large amount of raisins still on hand.

A forest ranger station is being built on the San Benito forest reserve for which the lumber has to be hauled and packed 37 miles.

Notwithstanding the low prices of raisins and table grapes during the last season quite extensive plantings will be made in the San Joaquin valley this year.

The grape growers of Central California are now turning to the National Farmers Union as a possible way or organization and way of disposing of the raisin output.

Anderson pear orchards which were kept pruned so as to remove the pear blight a couple of years ago are now in excellent condition and showing a strong lot of fine buds promising a good crop next year.

Sacramento River Farms Company is the name of a syndicate which has recently purchased the big Fair ranch in Yolo county and is perfecting plans for an irrigation system and later subdivision of the ranch.

After an effort to hold the raisin combine together until some way of organization which will not conflict with the Cartwright Law was evolved the promoters have given the effort up and the pool has gone to pieces.

Notwithstanding the pressure brought to bear for the repeal of the Cartwright anti-trust law many producers feel that its provisions provide for them a certain protection which still make it worth preservation in spite of some of its features to which the raisin men object.

W. A. Beard of Sacramento who is connected with President Roosevelt's Country Life Commission reports that on the trip across, the Committee found that the paramount question amongst the farmers was the one of education of the young toward the farm rather than away from it.

Assemblyman J. W. Stuckenbruck of San Joaquin county announces that he will introduce a bill providing for the repeal of the game law which protects meadow larks. He maintains that the protection offered by the present law has encouraged the increase of the larks to such an extent that they are destroying grapes for Lodi vineyardists.

A new Grange, Patrons of Husbandry, has been organized at Visalia and officers elected for the first year as follows: Master, J. E. Goad; Overseer, U. S. G. Mills; Lecturer, B. C. Anderson; Steward, Herbert Swank; Assistant Steward, O. A. Givens; Treasurer, J. A. Tuttle; Chaplain, Mrs. H. A. Scott; Secretary, Mrs. B. C. Anderson; G. K., H. A. Scott; Ceres, Mrs. S. A. Teague; Pomona, Mrs. Lottie Goad; Flora, Mrs. A. M. Givens; Trustees, J. A. Leeborn, J. M. Wells, D. R. Deming.

Southern California

Saticoy is sending out liberal shipments of walnuts.

A Rochdale Company has been formed amongst the farmers of Santa Maria.

The Ojai Orange Association is building a new packing house 80 by 100 feet.

The acreage of hay about Escondido this year will be much greater than ever before.

Imperial valley farmers are looking toward the early installation of a sugar beet factory.

At the recent institute at Mound, the ladies of the Farmers' Club served luncheon at noon time.

Coachella valley is harvesting its first cabbage crop, for which the farmers are receiving $60 per ton.

The Valley Creamery Company at San Jacinto seems to be in trouble over a lawsuit over collection of debt of $2,300.

Considerable injured fruit has been shipped from some of the orange sections but this is now said to be all cleaned up.

Orange county shipped a total of 536 cars of celery up to the first of January. Since that time there has been shipped at least half as much more.

Stockmen in the Antelope valley have been much incensed at the work of the Humane Society, which has demanded the feeding of stock which has been on short pastures.

A coyote shipped by some means with a car of cattle from the Imperial section to Los Angeles escaped as soon as the car door was opened at the packing house and killed a number of sheep in the corrals before it was shot.

An item recently quoted from an Orange county paper to the effect that one rancher was grubbing up ninety acres of orange trees proves to have been unreliable information, for it is now stated that the ninety acres should have read ninety trees.

The United States Land Office at Los Angeles expects this to be the busiest year it has ever had and will probably record the biggest amount of business of any land office in the United States. This will be largely due to the Imperial Valley transactions.

The Southern Pacific has levied an attachment on the holdings of the California Development Company, which has holdings in Imperial valley, which it insists is due because of the stopping in the break in the levees of the Colorado a couple of years since. The claim is for about a million and a half.

At a recent meeting of the Tri-counties Reforestation Committee at Riverside the matter of planting eucalyptus trees on the waste lands of the upper Santa Ana River as a means of holding back the flood waters during the rainy season was discussed and it was decided to increase the planting as far as possible. President Cuttle reported that it would be possible to spread upon these lands between 7,000 and 8,000 inches of water, which would in part at least be held until the summer drouth called for its release.

The Coast

Potatoes at Tacoma, Washington, are now quoted at $24 and $28 per ton.

The four largest of the Hawaiian Islands produced last year 521,123 tons of sugar.

The United States ships to the Republic of Panama $66,000,000 of products every year.

The coldest weather brought this year to Portland, Oregon, was ten degrees above zero.

National Wool Growers Association held a valuable session at Pocatello, Idaho, last week.

Starving magpies at Hoover, Washington, have attacked swine in the field and eaten their ears off.

The best show ever, is the verdict regarding the Eastern Oregon poultry show, which closed last week.

The Oregon hop market is stronger than for many months and is now commanding 7½ cents at Portland.

Depredations of wild animals have cost the state of Oregon, it is estimated, $800,000 during the last year.

Peach trees near Walla Walla, Washington, it is feared are greatly injured by the intensely cold weather.

Cold weather at Seattle has given a great stimulus to the hay market and boosted prices, especially in alfalfa.

Twelve acres of six year old Yellow Newtons and Spitzenbergs sold last week at Medford, Oregon, for $1500 per acre.

The state of Montana will send 25 delegates to the dry farming congress which will be held in Cheyenne, February 23-25.

In some sections of Oregon, the bounties on coyotes offered by state and local organizations aggregate $25 for each scalp delivered.

Gov. Mead of Washington is appealing to the state legislature to pass a better horticultural law which will provide for county inspectors.

The snow and intensely cold weather of western Washington and Oregon has caused rapid advance in all products delivered on the markets.

Complaint is made that the orchardists of western Oregon are as a rule careless in keeping their orchards clean from pests and diseases.

Business men of Joseph, Oregon, are endeavoring to bring more wool sellers to that market, and to that end are building an immense warehouse.

The state of Washington is having trouble in the construction of its building at the Alaska-Yukon Exposition over the payment of its bills under a bond election.

The grangers of Lynn county, Oregon, are protesting against a state road which is being built more, it is claimed, in the interests of automobiles than of farmers.

It is feared that the cold weather which prevailed over the Pacific Northwest has caused the death of many salmon eggs at the Bellingham, Washington, fish hatchery.

The annual meeting of the Hawaiian Sugar Planters' Association elected the following officers for the coming year: S. M. Damon, president; W. O. Smith, secretary and treasurer.

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Profit in the Poultry Yard

By Mrs. Frank Metcalf

We solicit short articles of a practical nature from the fancier and utility breeder, giving their experience with poultry. All inquiries pertaining to feed, management, disease and its prevention will be answered through these columns.

ROUP—ITS CAUSE AND CURE.

THIS wet weather is sure to result in a crop of roup inquiries, in fact my canny Scotch neighbor has already been mixing his "dopes" ready for the first symptom, which is a wise precaution.

In the first place roup is caused by dampness, cold, and filthy houses. There are predisposing causes also, such as hereditary taints, and the unfortunate birds whose parents were once "cured" of roup are the greatest sufferers from this complaint.

The folly of breeding from such birds will now become apparent, and the hatchet should be valiantly wielded by those who hope to eradicate the disease from future flocks.

Let not a common cold be confounded with the more serious forms of disease, for a fowl, like a person, may throw off a common cold, after a slight attack, and be all right to use as a breeder.

A common cold will be known by just a catarrhal condition, causing running at the nostrils and a slight mucous affection of the eyes, and a good dose of pepper in the feed is usually sufficient, although a little aconite in the drinking water may afford quicker relief.

Some Remedies.

One drop of aconite in a teaspoon of milk is the right dose for an individual case, and a teaspoonful to each pint of the drinking water for the whole flock is sufficient.

A good old remedy for cold and preventive of roup, is common kerosene: Hold the fowl so that it cannot swallow, and fill the throat with kerosene, holding long enough so that the oil can thoroughly saturate the throat; then allow it to run out. Next wash out the nostrils, and inject a few drops of oil into each nasal passage, and the effect is often almost magical.

Many use no other remedy whatever, and dip the whole head of a badly affected bird into the kerosene, a severe cure, as it takes off the whole skin sometimes. A cold, neglected, developes into roup, bronchitis or pneumonia in a fowl, just as it does in a human being, and there are always some victims among both birds and humans that seem to be especially liable to fall a prey to these diseases. Sometimes the seemingly healthiest succumb the most quickly, and there is no telling where it will strike hardest.

To recommend any especial remedy as a sure cure, is as futile as it would be for a doctor to declare that he could cure every person who called him. All we can do is to use every means in our power to relieve, where there is hope of effecting a cure, and where a cure is considered advisable.

Last year I tried a remedy recommended by Theo Hewes in Inland Poultry Journal upon some very badly affected birds, and cured nearly every one of them, but although they afterwards became perfectly healthy, although several had lost an eye, they were only fit for the table, (the eggs, I mean), and I should not use their eggs for hatching.

This remedy is so cheap and simple it should be in every poultry keeper's cupboard ready for instant use.

A Well Kept Yard.

Procure 10 cents worth of permanganate of potash, which is a crystal of a deep purple color, requiring 16 parts of water to dissolve. Place it in a quart bottle, and fill three-fourths full of warm, not hot, water.

Shake vigorously and let stand over night to dissolve. A tablespoonful of this may be used for each gallon of drinking water for the whole flock, or better still, for each half gallon of milk or water used to wet the mash with, and for a badly affected fowl use it at the rate of one part of the above solution to three parts water, and dip the whole head under holding it there until the bird strangles, which draws it through the nasal passage. I used a crotched stick to hold the heads under with, and as every drop stains everything it touches with a dark brown, found it no pleasant task, but it cured my sick birds after their eyes were so swelled as to seem about to burst. Indeed some did burst, and it seemed much more humane to cut their heads off and put them out of their misery, but I wanted to test this cure.

Permanganate of potash is a salt of maganese, obtained from a combi-

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nation of binoxide of maganese, chlorate of potash and hydrate of potash, with a little water, evaporated and ignited, and decanted, until the crystals are deposited, and was at one time supposed to be a sure cure for diabetes, but will cure roup. When a cold affects the lungs of a fowl, it droops and will not eat and the breathing can be heard at some distance. This is very difficult to cure, and is often caused from showroom colds, the changes from the hot rooms to the cold out-door air being more than a bird can stand.

Many a prize-winner have I lost from this trouble, and have tried every imaginable cure. Have kept them alive for weeks upon sweet cream and whisky poured down their unwilling throats with an oil can, only to have them die after I was sure they were cured.

The permanganate of potash should be applied twice a day, and the afflicted birds kept separate from the flock until entirely cured.

In fact, it is best never to put them back in the flock at all, lest their eggs be used for setting, and the disease continued in the offspring. Not, perhaps the active disease, but an hereditary tendency to it.

The drinking vessels must have attention while colds are prevalent, as contagion exists in the discharges from the nostrils of even slightly affected birds. Scald them out once a day, and the addition of a handful of fresh wood ashes to the water you scald with, is a good disinfectant, and very cheap. Of course none of the ashes must be left in the dish, lest crop irritation follow.

When a cold settles on a chicken's lungs, they will raise their heads and gasp for breath, and are not inclined to move, or eat, and the case is very doubtful of cure, yet the bird may recover partly, but always thereafter have a rattling in the throat, and occasional cough. To sum up the situation, it is just like this: No matter if a bird be worth $50 at the beginning, if it lives through a severe attack of roup or lung trouble, it never will be worth more than a common market fowl when cured, unless kept especially for show purposes, and the less of those saved, the better for the health of the rest shown.

Symptoms.

If you detect the wheezing at the very first, a liberal dose of kerosene poured between the wings on the back of the fowl reaches the seat of trouble as quickly as anything can, and will sometimes act promptly, while it also frees the bird from lice. But it must be used with caution, or it will blister and one application is all that should be used.

Preventives.

Prevention is better than cure always, and a generous supply of pepper in the mash just now may be the means of keeping the fowls from an epidemic of colds and roup, and have the effect of starting the laying, as well.

A tablespoon of black pepper to a gallon of mash is none too strong, or a teaspoon, scant, of cayenne, may be used instead.

We all know how hot pepper tea sometimes breaks up a cold for ourselves, and whatever is good for us is good for fowls in like conditions.

A pill of bromide of quinine may work wonders in a sick bird, as well as in a human being, and the thing to do is to use whatever remedy is at hand and use it as soon as pos-

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Made of wire that is all life and strength — wire that stretches true and tight and yields just enough under impact to give back every jolt and jam it receives.

Made of materials selected and tested in all the stages from our own mines, through our own blast furnaces and rolling and wire mills, to the finished product. Our employment of specially adapted metals is of great importance in fence wire; a wire that must be hard yet not brittle; stiff and springy yet flexible enough for splicing—best and most durable fence material on earth.

To obtain these and in addition apply a quality of galvanizing that will effectually protect against weather conditions, is a triumph of the wiremaker's art.

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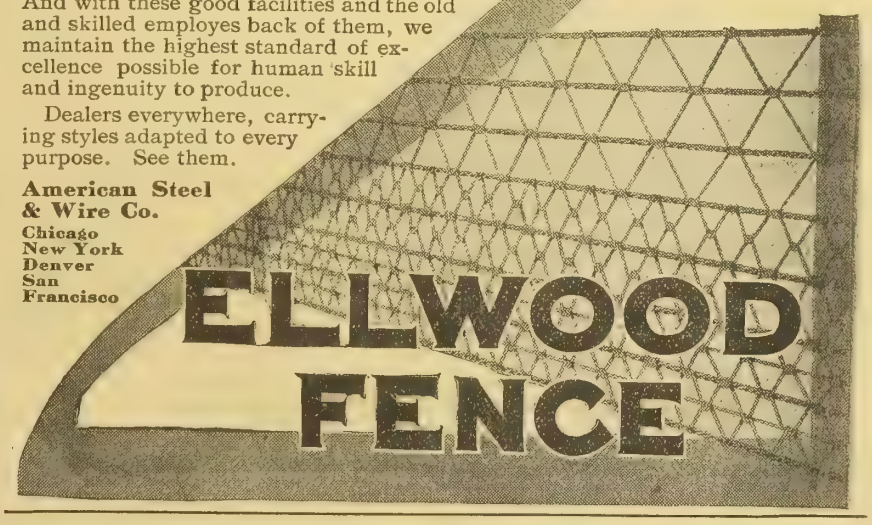

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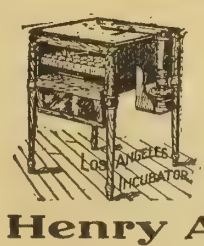

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My San Jose Winnings: 1st, 2nd and 3rd Cock; 1st Cockerel; 1st, 2nd and 3rd Hen; 1st and 2nd Pullet. The above winnings were made out of ten entries.

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Sullivan's COMMONWEALTH STRAIN is bred for egg production, has won the cream of the prizes at leading shows, from Seattle to the World's Fair. We did not show at the State Fair this year but have better stock than ever, and want you to send for our Prize Record and watch the later shows that we win.

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I can supply Eggs from strong vigorous birds barred to the skin and correctly mated for $1.50 and $2.50 per 15. Incubator lots a matter of correspondence.

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sible. But do not put $1.00 worth of expensive medicine and days of anxious work upon a 50 cent chicken, and then worry if it dies. Life is too short and time too precious for us to waste our efforts upon the impossible, so consider well whether the bird is really worth the effort, before you choose between the medicine bottle, or the hatchet.—Mrs. Frank Metcalf.

LOS ANGELES COUNTY SHOW.

The Los Angeles Poultry Association closed a very successful show last Saturday night at the Made in California Exposition in Los Angeles. The show was run on somewhat different lines than heretofore and its result is very satisfactory to the management. There have been larger exhibits in the past as to numbers, but never of finer quality. Judges Thomas and Tyler succeeded in placing the ribbons very early in the show and as a rule the awards were eminently satisfactory. The bantam show having been held so recently the little birds were not very much in evidence although there were some very fine exhibits of them. The judges say that an exhibit of finer quality birds has never been made on the coast. This was in part due to the high entrance fee, keeping down the number of entries especially of lower grade stock. Notwithstanding the storm of the entire week the attendance was very good.

The awards were as follows:

Andalusians. All awards, Mrs. Griffith.

Light Brahmas. Struthers, C, 1; H, 1; Cl, 2; Show, Cl 1; pen 1; Chandler, Cl, 3.

Partridge Cochins. Landis, C, 1, 2; H, 1, 2.

Cornish Fowl. Aikman, C, 1, 2; H, 1, 2, 3; pen, 1, 2; Cl, 1, 2, 3; P, 1, 2, 3; Williams, C, 3; Chandler, pen, 3. Cornish Fowl White. Fuiks, C, 1; H, 1; Cl, 1; P, 1, 3; pen, 1; Wagner, C, 2; P, 2.

Black Hamburgs. Rowan, all awards. Silver Hamburgs. Rowan, all awards. Houdans. Miss Grover, C, 1.

Black Langshans. Yohn, C, 1; H, 1, 2, 3; pen, 1; P, 2, 3; Hauser, Cl, 1; Rich, P, 1. Buff Langshans. Miller, all awards.

White Leghorns. Swanson & Johnson, C, 1, 3; H, 1, 2; Cl, 1, 3; P, 1, 2; pen, 1; Show, C, 2; P, 3; Gray, Cl, 2. Brown Leghorns. Nickerson, H, 1, 2; Vary, P, 1; pen, 1. Buff Leghorns. Salisbury, Cl, 1; P, 1; Flanagan, Cl, 2; P, 2. Black Minorcas. Flanagan, Cl, 1; Bonnell, Cl, 2, 3; H, 1, 2; P, 1, 3; pen, 1; Cobb, H, 3; Lovell, P, 2.

Black Orpingtons. Weller, C, 1; H, 3; Lathan, C, 2; Cl, 1, 2; P, 1, 2; pen, 1. Lloyd, C, 3; H, 2; Cl, 3; Humphreys, H, 1; pen, 2; Pearson, pen, 3. Buff Orpingtons, Sills & Son, C, 1; H, 3; Goodacre Bros., C, 2; Hayden, C, 3; Dean, H, 1, 2; pen, 1, 2, 3; Wieland, P, 1, 2, 3; Jubilee Orpingtons and White Orpingtons. Feldgate, all awards.

Barred Plymouth Rocks. F. Espe, C, 1, 2; H, 1, 2, 3; Cl, 2, 3; pen, 2; Wieland, Cl, 1; P, 1, 2, 3; pen, 1; Mitchell, pen 3. White Plymouth Rocks. Gutting, C, 1, 2; H, 1, 2, 3; Cl, 1, 2, 3; P, 1, 2, 3; pen, 1, 3; Wagner, C, 3; Humphreys, pen, 2.

Silver Polish and Golden Polish. Rowan, all awards.

Rhode Island Reds. Gunston, C, 1; Pike, C, 2; pen, 2; Thompson Co., C, 3; Cl, 2; Harrison, H, 1; P, 3; Jefferson, H, 2; P, 2; Cleveland, H, 3; P, 1; Goodacre Bros., Cl, 1; Winslow, pen, 1; Silkies. Williams, all awards. Spanish. Rowan, all awards.

Silver Wyandottes. Demmitt, Cl, 1; H, 1, 2, 3; Cornett, P, 1; Buff Wyandottes. Dillingham, C, 1, 2; H, 1, 2; Cl, 1, 2; P, 1; Tiffenbach, P, 2. Silver Penciled Wyandottes. Cornett, all awards. Partridge Wyandottes. Weisel, C, 1; H, 2; Andrews, C, 2; H, 1; Cl, 1; P, 1. White Wyandottes. Dillingham, C, 1, 2; H, 3; P, 3; Hubbard, C, 3; H, 1, 2; Cl, 2, 3; P, 1; pen, 1, 2, 3; Bremner, Cl, 1; Huskins & Pursell, P, 2. Columbian Wyandottes. Nicoll, C, 1; H, 1; P, 1; Feldgate, H, 2, 3; Cl, 2; P, 2, 3; Whitney, Cl, 1, 3.

Lakenvelders. Hubbard, all awards.

Bantams. Buff Cochins. Cox, C, 1; Cl, 2; Tresider, C, 2; Cl, 1; P, 1; H, 1. Partridge Cochins. Condee, all awards. White Polish. Rowan, all awards. Red Pyle Games. Rowan, all awards. Silver Sebrights. Rowan, all awards. Cornish Fowls. Mercer, C, 1; H, 1. R. B. Games. England, all awards. Black Tailed Japs. Nolac, all awards.

Bronze Turkeys. Hubbard, T, 1; H, 1, 2, 3; P, 1, 2, 3; Putnam, T, 2. White Turkeys. Putnam, T, 1; H, 1, 2; Dexter, Y T, 1.

Indian Runner Ducks. Gray, all awards. Pekins. Hubbard, all awards.

Amongst the winners in the specials are the following:

The $50 Los Angeles "Examiner" cup won by Mrs. Griffin. For making twenty entries, one Springfield rifle to each of the following: Rowan, Aikman, Dean, Griffith, Hubbard, Wagner. Ten dollars cash best general display, Rowan; $5 for second best, Hubbard; one Springfield rifle for third best, Gutting. Eight dollars for best display outside of Los Angeles county, Show; T. Newman, silver cup, Mrs. Hubbard; Germain's 100 pounds Chamberlain Chick Food, Gutting. The Los Angeles Chamber of Commerce challenge cup, Gutting. The Los Angeles Produce Exchange $50 cup, Aikman. The Coulson Poultry and Stock Food Company cup, Gutting. The Poultry Breeders' Association ribbon, Wieland. The West Coast Seed Company's incubator, Wieland. Five dollars, best in American class, Gutting; $4, second best, Dillingham; $3, third best, Espe. Whitney's setting Columbian eggs, Gutting. Mrs. Hubbard's candlestick, Dillingham. The Aggeler & Musser Seed Company cup, Gutting. Springfield rifle for best Plymouth Rocks, Espe. Five dollars for best in Asiatic class, Yohn; $3 for second best, Struthers; $1 for third best, Miller. The National Black Langshan Club prize ribbon, Yohn. J. W. England's cup, Show. The West Coast Seed Company, 100 pounds chick food, Yohn. Five dollars for best in Mediterranean class, Mrs. Griffith; $3, second best, Swanson & Johnson. American Buff Leghorn Club ribbons, Salisbury. J. C. Williams $5, Swanson & Johnson. Brown Leghorns cockerel, Nickerson. Springfield rifle for best in Mediterranean class, Swanson & Johnson. Five dollars for best in English class, Aikman; $3 for second best. Dean; $2 for third best, Latham. The Suntan leather pillow cover, Aikman. John D. Mercer's cup, Wagner. One Springfield rifle, Latham. The Rural Californian's cup, Aikman. H. J. Whitley's trophy, Aikman. Sherwood & Sherwoods' Trophy,

For Mehring Foot-Power Milking Machines see O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles, Cal.

Aikman. Parmelee-Dohrmann Company's baking dish, Aikman. The National S. C. Buff Orpington Club ribbons to all members winning first prizes. Five dollars for best Game Bantams, England; $2 for second best, Rowan. Henry Guyot's two pocket knives, Fuiks. Mrs. Burbridge's silver cup, England. Guyot's carving set, England. The West Coast Seed Company, 100 pounds chick food, England. Five dollars for best display Ornamental Bantams, Rowan. West Coast Seed Company, 100 pounds chick food, Rowan. The West Coast Seed Company, 100 pounds chick food, Mrs. Williams. One dollar for best display turkeys, Mrs. Hubbard. One dollars for best ducks, Mrs. Grey. Live Stock Tribune, Cup, Wieland.

SAN DIEGO POULTRY SHOW.

Over 400 birds and pets were on exhibition besides others entered for sale or display only, as follows: Fowls, 158; Bantams, 39; Ducks, 18; Pheasants, 14; Cats, 29; Pigeons, 121; Rabbits, 9; Guineas, 4; Cavies, 8; Turkeys, 3; Geese, 1.

The awards were as follows: Barred Rocks. G. P. Myer, "San Diego County Barred Rocks Breeders Cup" for five highest scoring birds; special for the highest scoring Barred Rocks; cock, 1; cockerel, 2; hen, 1 and 2. Lakeside Inn, Pen 3. Alfred D. Robinson, cockerel, 1; cock, 2. H. G. Bratto, pullet, 1, 2, and 3; hen, 3; cockerel, 1.

White Plymouth Rocks. Mrs. C. S. Creary, cock, 1; cockerel, 1; pullet, 3. H. M. Stiles, cock, 2; cockerel, 2; hen, 1 and 2; pullet, 1 and 2. Special for the highest scoring White Rock and the cup for the highest scoring pair in the American Class, Lakeside Farm, cockerel, 3; pen, 1.

White Wyandottes, Mrs. A. E. Elridge, pullet, 3. Mrs. E. N. Strong, pen, 1; cockerel, 1; hen, 1 and 2. Special for highest scoring, S. W. Morgan, pen, 2; cock, 1; cockerel, 2; pullet, 1 and 2; hen, 1.

Golden Wyandottes, Y. P. English, Pen, 1; cockerel, 1; hen, 1, 2, 3; pullet 2. Special for the highest scoring Golden Wyandotte, J. W. Sampsell, cock, 1; pullet, 1, 3.

Rhode Island Reds, S. H. Games; Pen 2, cockerel, 1, 3; cock, 2; pullet, 2; hen, 2. A. J. Roberts; Pen, 1; cock, 1, 3; hen, 1; pullet, 1. 3; cockerel, 2. Special for the highest scoring Rhode Island Reds. Special for the highest scoring pen in the American Class (subject to color handicap,) Lakeside Inn; Pen, 3.

Buckeyes, Mrs. Clara Schindler, cockerel, 1; pullet, 1.

Brown Leghorns, Mrs. N. E. Bragg, cock, 1; hen, 1, 2; pullet, 1, 2. Special for the highest scoring Brown Leghorn.

White Leghorns, Clay Avenue Poultry Yards, cock, 1; hen, 1,2.

Blue Andalusians, San Diego County Poultry Association, cock, 1; pullet, 1.

Black Minorcas, A. MacAllioler, hen, 3; Earl Pfeifer, hen, 1, 2; Special for best Black Minorca.

White Minorcas, S. W. Morgan, pen, 1; cockerel 1, 2, 3; pullet, 1, 2, 3.

Buff Orpington, Percy Whitehead, cock, 1; hen, 1, 2; pullet, 1, 2; pen, 1; Special for the best.

Black Orpingtons, Mrs. A. E. Elridge, cock, 1; pullet, 1; hen, 1.

White Game, J. W. Sampsell, pullet, 1, 2.

Silver Duckwing Games, J. W. Sampsell, cockerel, 1; pullet, 1, 2.

Black Breasted Red Game Bantams, A. M. Brainard, cockerel, 1; pullet, 1; hen, 1; Special, Earl Pfeifer, cockerel, 2; hen, 2, 3.

Rose Comb Black Bantams, A. E. Blethen, cock, 1; hen, 1, 2; pullet, 1, 2; Special the highest scoring bird of any variety.

Buff Cochin Bantams, A. E. Blethen, cock, 2; hen, 1; Special for the best Buff Cochin Bantam. John Wisler, cock, 1; hen, 2. William Fields, cock, 2; hen, 3.

Black Cochin Bantams, A. E. Bethen, cock, 2; hen, 1, 2; pullet, 1, 2; cockerel, 1, 3; Special for the best Black Cochin Bantam. H. M. Stiles, cock, 1; hen, 3; pullet, 3; cockerel, 2.

White Cochin Bantams, H. M. Stiles, cock, 1; cockerel, 1; hen, 1; pullet, 1.

Black Tailed Japanese, F. D. Waite, cockerel, 1; Pullet, 1.

Bronze Turkeys, H. M. Stiles, 1; Gobbler, 1.

White Holland Turkeys, Charles Gould, hen, 1; Tom, 1.

Pekin Ducks, E. J. Kobbler, duck, 1; drake, 1.

Indian Runner, Gould, old drake, 1; old duck, 1; young duck, 1. Special for the best Indian Runner ducks, Clay Ave. Poultry Yards, old drake, 2; young duck, 1.

White Indian Runner Ducks, Chas. Gould, young drake, 1; young ducks, 1, 2.

White Brazilian Ducks, E. J. Kobbler, drake, 1; duck, 1. Special for the best Brazilian Duck, Mrs. A. E. Elridge, duck, 1, 2; drake, 2.

Rouen Ducks, Clay Avenue Poultry Yards, duck, 1; drake, 1.

Buff Orpington Duck, Mrs. E. M. Plaw, duck, 1; drake, 1.

Toulouse Geese, Mrs. French, old goose, 1.

White Guineas, Charles Gould, male, 1, 2; female, 1, 2; Special for the best White Guineas.

Golden, Lady Amherst, Reeves and Swinhoe Pheasants, J. G. Green, all awards.

Rhode Island Reds were the largest class in the show. White Barred Rocks were also a good class. Cats very good. The pigeon department had a nice display of fancy birds. The show was a financial success and had a good attendance which speaks for itself. Already plans are being made to hold a first-class show next year, the dates of which will soon be announced.

(Continued on Page 103.)

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COULSON'S SPECIAL DRY CHICK FOOD, during the five years it has been on the market has justly earned for itself its great reputation as a life-saver for little chicks by its special adaptation to their needs.

THE UTMOST CARE is observed in the selection of each of the dozen or more articles composing this unequalled feed; tender seeds, cracked grains blown free from dust, steel-cut oats, tiny pieces of dried meat and bone, willow and pure bone charcoal, are combined with other very necessary ingredients; every article being selected with special reference to its quality, strength, and desirability for the needs of the young chick.

FOR YOU TO BUY the many different articles composing Coulson's Special Dry Chick Food is quite impracticable; you could not be certain as to their quality for one thing, and the high cost of certain of them when purchased in small lots might lead to their being left out to the detriment of the chick.

TO MAINTAIN the high reputation of COULSON'S SPECIAL DRY CHICK FOOD, nothing is left undone to make it absolutely the best feed that can be made for the little chicks.

COULSON'S SPECIAL DRY CHICK FOOD can be fed exclusively to your little chicks for the first six weeks, at a cost of about four cents (4c) each; and what is of still greater importance, it will do all that can be done in the way of feed to bring them through that critical period of their lives in full health and vigor.

TO RAISE EVERY CHICK you hatch; to have fine, large, healthy chicks; to have chicks that will stand up and crow when eight weeks old; to raise chicks that you will be proud of, FEED COULSON'S SPECIAL DRY CHICK FOOD, THE LIFE SAVER.

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GERMAIN SEED CO., Distributing Agents, Los Angeles, Cal.

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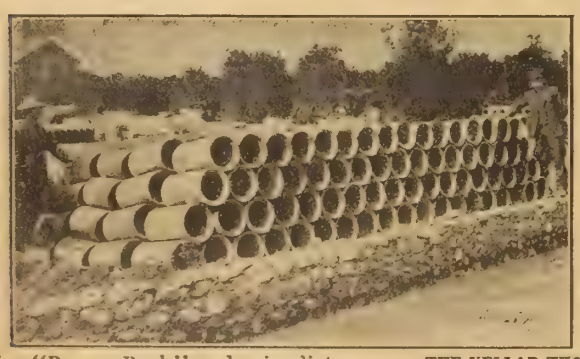

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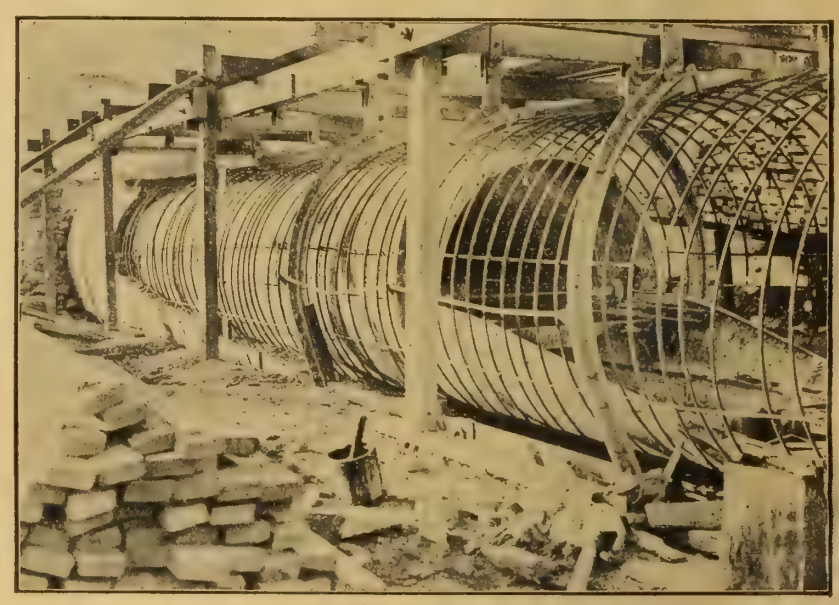
Renders Natural Plant Food More Available.

There are three primary plant foods, potash, phosphoric acid and nitrogen.



A California Pipe Line.

To these should be added lime as materially influencing the availability of the two former. These are so-called "Critical soil elements," which constitute the valuable portion of direct fertilizers. Gypsum is mainly an indirect fertilizer. It acts by setting free plant food already in the soil, and rendering it available for plant use. Much of the natural supply of plant food in the soil is in an unavailable condition. Gypsum so acts upon this chemically as to render it immediately available.

It also has a secondary and direct action in supplying plants with both lime and sulphur, both important elements in plant economy, in case the soil is deficient in these ingredients. Gypsum encourages plant growth.

Furnishes Potash to Plants.

The direct action of gypsum previously referred to is mainly exerted upon the available potash compounds of the soil. Potash is an extremely important element in plant growth. Plants vary much in the amount of potash they consume, but it enters more or less into the composition of all, and it is found in some in large amounts. Numerous investigations show that when potash is deficient in the soil, or unavailable, plants suffer greatly, the woody portion of the plants and the fleshy parts of the fruit being dependent upon the influence of available potash. Gypsum renders potash available.

Antidote for Black Alkali.

From this standpoint alone gypsum is of the greatest agriculcultural importance. Thousands of acres of exceedingly rich soils otherwise are just sufficiently tainted with this corrosive salt, carbonate of soda, as to render crop production upon them very uncertain. Such soils should be changed to a condition of extreme productiveness by the use of gypsum in reasonable quantity. Those who are familar with alkali lands know how much more deadly to plant growth is "black alkali" than "white alkali." The active element of "black alkali" is the corrosive salt carbonate of soda, while that of "white alkali" is sulphate of soda, which is comparatively innocuous within reasonable limits to plants. Gypsum neutralizes the effect of the black alkali.

Dr. E. W. Hilgard, the great authority on soils, says:

"This salt (carbonate of soda) acts injuriously, not only in corroding the crown of growing crops, and even of trees, but also by rendering clay soils almost untillable, and by dissolving out both the vegetable matter and part of the phosphates of the soil. The use of a proper dose of gypsum on such soil obviates all these troubles. It neutralizes the corrosiveness of the soda, renders tillage easy, and restores to the proper condition the humus and the phosphates of the soil. It serves to correct similarly irrigation waters containing carbonate of soda, the continued use of which, without the corrective use of gypsum, would soon cause a fatal accumulation of 'black alkali" in the soil. The use of gypsum in irrigation ditches, or on the land itself, will effectually prevent this trouble."

The California Experiment Station was able thus to bring land which ordinarily would produce no crop, not even salt grass, to a condition in which it yielded forty bushels of wheat to the acre.

May protect Trees and Vines.

The effect of gypsum on "black alkali" land is often very striking. The brackish puddles and spots disappear, the soil soon loses its hard, puddled condition and crumbles into a loose mass, into which water soaks freely, bringing up the previously depressed spots to the general level of the land, and permitting free drainage. Gypsum may protect trees and vines already planted from the worst effects of alkali by surrounding the trunks with it or with earth mixed with it. Seeds may also be thus protected in sowing and plants in planting. On

the surface, seeds will now germinate and grow without hindrance.

Amount Required per Acre.

For the correction of alkali this will, of course, vary with the amount of carbonate of soda in the soil all the way from a few hundred pounds to several tons in the case of strong alkali spots. It is not, however, necessary to add the entire amount at once, provided sufficient be used to neutralize the portion near the surface, and enough time be allowed for the action to take place. In very wet soils this may occur within a few days, in merely damp soils in the course of several months, but usually the effect increases for several years as the salts rise from below. It should be remembered that all of the foregoing statements refer to the effect of gypsum upon "black alkali" (sal soda), and that the material does not have any beneficial action upon "white alkali" (glauber salts).

Favors Development of Bacteria in the Soil.

It thus becomes of special value in increasing the yield of legumes, as clover, alfalfa, vetches, beans, peas, etc. For ages gypsum has been used to increase the growth of red clover. But it is only a comparatively recent discovery that the growth of red clover and related plants is very dependent upon certain bacterial development about their roots. Unless conditions for this bacterial development are favorable the legumes, or pod-bearing plants, do not make satisfactory growth. The presence of these bacteria is indicated by small nodules on the roots of the plants. The activity of these bacteria is favored by a neutral or alkaline soil. Now the sulphate of potash set free in the soil by gypsum changes to carbonate of potash, and renders the soil very slightly alkaline, which favors this bacterial activity. Gypsum becomes then a specific for increasing the yield of legumes.

Increases Yield of Grapes.

L. Grandeau, the eniment French authority, reports some experiments extending over a number of years as to the value of gypsum in grape culture. These showed that applications of gypsum, both alone and in connection with barnyard manure, largely increased the yield of grapes.

Dr. James Withycombe, Director of the Oregon Experiment Station, reports yields from an acre of fall-sown vetch, which received an application of 100 pounds of gypsum April 17, and yielded 9031 pounds of hay July 11, as compared with a yield of 7394 pounds of hay from an adjoining acre, used as a check. This was an increase of 22 per cent in favor of gypsum.

Other Important Uses.

It favors the growth of many other plants, particularly cabbage, rape, turnips, hemp, flax and maize.

It is an active absorbent of ammonia gas, and thus becomes valuable in preventing loss of costly plant food in stable manure, especially that of a liquid nature, and in making composts. When mixed with decaying organic matter it acts as a preservative and prevents the escape of the valuable and costly nitrogen. For this purpose it may be scattered with a liberal hand in stables and over manure heaps.

How and When to Apply.

Gypsum is sold in a pulverized condition and is easily applied. It may be either plowed in, drilled in, placed about roots at the time of planting, or sown broadcast, depending upon the time of year and condition of the crop. While it is the more immediately effective if applied in the early fall or winter, it may be used at any season of the year without danger of loss. Its effect will not be noticeable, however, until it has been acted upon by either rains or irrigation water to distribute it well into the soil and bring it into close touch with the soil ingredients.

The quantity to use will be entirely dependent upon circumstances. There is no danger from an excess, as in the case of some materials, as it exerts no harmful effects. The usual quantity employed for use as a fertilizer is from 100 to 300 pounds per acre, while as an alkali corrective from 500 to 1000 pounds per acre may be required.

CULTURE OF FIELD CORN AND SORGHUM IN SEMI-ARID COUNTRY.

We have three varieties of field corn that do well in this semi-arid country—the King Phillip, Mexican June corn and the "Squaw" variety. The Mexican June corn, if anything, is the best, as it is a 90-day corn, and on good land it makes two ears to the stock. On fairly good land either variety will make from 30 to 50 bushels an acre, writes A. W. McGill in the Coachella Valley Submarine.

In planting, the rows should be three and one-half feet apart and about two feet in row. Have ground well irrigated before planting, and plant with planter on level surface and moist ground, or plant in a laid-off furrow, and run another furrow so as to fill up the row the corn is planted in. Then turn water down and irrigate well. As soon as it will do, run a harrow over the ground, and in a few days the corn will be up. As soon as it is three or four inches high, run through with cultivator. Keep ground fairly well irrigated and follow each irrigation with a cultivator. If planted the last week in July or the first two weeks in August, one will have well matured corn by the first of December. Cut and shock it in the field and it will make good feed for all kinds of stock. There should be a good acreage of field corn planted, as it can be grown at a time of year that other crops are not grown, and by sowing barley between rows in October one can have a cover crop to plow under in the spring for his cantaloupe crop.

Sorghum is a rank grower and produces an enormous amount of feed for all kinds of stock. It can be grown on heavy soil and really does better on such soil with some alkali in it. It is one of the best of feeds for cows in milk, as they readily eat up stalk and all, as the stalk is very sweet and contains quite an amount of sugar. It should be planted about like field corn, only drilled much closer in row. It needs lots of irrigation to produce a heavy crop, but it will grow with less irrigation, and it is known as a drought-resistant crop to some extent.

With these crops that are so well adapted to this locality, there should be a larger number of milk cows kept in the Valley, and young stock as well, as the sooner we get started with good dairy cows then will be the time that the farmers will be producing a steady income, and prosperity will follow. With a thousand milk cows in the Valley producing a regular income, and the cream being moved to the different stations, then will come good roads and a prosperous community.

IRRIGATE FROM YOUR OWN RESERVOIR

A reservoir on your own land makes you independent on the water question. You will have no trouble in filling the reservoir during the spring rains, when all the streams, little and big are flooded.

Then you will not be at the mercy of ditch owners and other water users when the dry season comes.

The few acres you will require for the reservoir will not be wasted. They will serve to make all your other lands vastly more valuable.

Raise the Water With An I. H. C. Gasoline Engine

Of course you cannot have your reservoir on your high ground. Locate it on the bottom land where it is easiest made and certain to be filled with drainage waters.

Then pump the water wherever you need it with an I. H. C. gasoline engine.

These engines, always powerful and reliable, have been found to be excellently adapted to irrigation pumping.

They are operated with little expense. They require but little attention.

They enable you to utilize the waste waters such as deep streams, sloughs and ponds upon your own land.

The farmer who has a water supply of his own, so that he may irrigate a few hours now and again, without regard to whether the water is flowing in the company ditch, is the independent farmer.

A reservoir on your own land and an I. H. C. gasoline engine to give you the water when you want it, where you want it, is the solution of the problem.

The I. H. C. gasoline engine can be used for other purposes beside pumping. It is a general purpose engine, which will be found an all around handy farm helper—to run grinder, sheller, separator, fanning mill, washing machine, churn, grindstone, etc. The I.H.C. line includes besides Famous pumping engines and jacks, the following:

Stationary engines, from 1 to 25 horse-power; Portable engines, from 2 to 20 horse-power; Skidded engines, from 2 to 8-horse-power; Tractors, 12, 15 and 20-horse-power, and Sawing and Spraying outfits.

Call on the International local agent for catalogs and all particulars in regard to these engines, or write nearest branch house.

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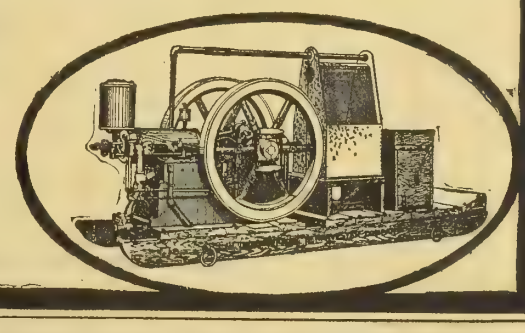

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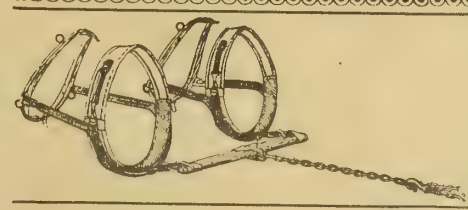

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We want you to read our booklet. Send for it today.

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The Kings County Agricultural Fair Association is already making plans for its next fall exhibit.

Piru almond trees are in full bloom.

A FINE EXHIBIT.

Southern Californians have been maintaining for some weeks what is called a "Made in California Exposition." It is given over entirely to the display and demonstration of the worth of the products, principally manufactures, which are made in California. One of the most striking of these displays is that of gas engines which are propelling electric light plants, pumping plants, mining hoists and other features.

The object in mentioning this display at this time is to call the attention of any reader of the Cultivator who may be interested in investigating the merits of power to be used on the ranch. Of course there are many manufacturers of gas engines in California and the factories are generally open to inspection of the plants by intending purchasers, but the engines displayed in the Exposition have the double advantage of being located and working. This gives ample opportunity to see just how the engines act under service because they are given loads and work at this Exposition similar to those they will be obliged to carry in practical work.

EXHIBIT OF WESTERN GAS ENGINES AT THE MADE IN SOUTHERN CALIFORNIA EXPOSITION.

The engines exhibited are those manufactured by the Western Gas Engine Company of Los Angeles of which Warren H. H. Frost is the president and general manager. The exhibit is in charge of their genial representative J. B. Pridham. This concern manufactures engines, of from seven to 90 horsepower, and they are calculated to do their best work on number two California distillate, though they may be adapted to alcohol, natural gas, gasoline or naphtha.

One of the engines at the Exposition is running a complete electric lighting plant, the lights being used in working out the lighting scheme which may be observed in the photograph on this page. It was formerly found impossible to produce electric lights with gas engines without causing the continual flickering. But the exhibit at the Exposition proves conclusively that these lights produced by the Western Gas Engine are as steady as one could wish.

Part of the lights are used in lighting up the electric fountain which is a part of the display belonging to a pumping plant. This plant is run by a 7-horsepower Western and is throwing through a number 3½ horizontal centrifugal pump for so light a power a wonderful amount of water which striking against the under side of the dome is turned downward about the electric lights in such a way as to make a very pretty electrical effect.

This caused us to inquire of Mr. Pridham regarding the work of the Western Company in regard to pumping plants and he replied that while the company did not manufacture directly centrifugal or other pumps, their corps of engineers was fitted to cope with any problem and not only install electric lighting plants, pumping plants and hoists, but would be glad to give advice on any problem requiring expert engineer's opinions.

In fact this work of advice to intending users of power is one of the strong departments of the Western Gas Engine Company's big plant. No problem is too small, surely none too large, for this big concern to lend the most expert advice.

Mr. Pridham wished us to distinctly understand that every feature of the Western Gas Engine is made in California, in fact it is practically all within the boundaries of the western factory on north Main street. The big concern has its own foundry as well as machine shop so that the smallest detail of manufacture is under the supervision of the experts who have a vital interest in a perfect machine. We do not doubt the central office at the factory will be glad to show anyone the details of the manufacture of the gas engine.

GERMAIN SEED CATALOGUE.

The Germain Seed and Plant Company of Los Angeles has just issued a new illustrated catalogue of 116 pages, which contains much valuable information to planters.

The book has a lithograph cover, the front of which shows a street lined with large Eucalyptus trees on either side with the wording, "Eucalyptus the road to wealth." The back cover shows a picture of Germain's Oregon Evergreen Sweet Corn. Vegetable and flower seeds and plants are fully priced, illustrated and described. A complete catalogue of poultry and stock foods, as well as supplies of all kinds, including garden tools. Also general information about the care of the garden, when and how to plant. There is also a complete list of the best Agricultural Horticultural and Poultry books.

This catalogue is sent free to any one mentioning this paper.

The California Development Association is making efforts to bring the irrigation men and the miners together so that there may be no conflict of interests.

Bees and Their Care

GRADING RULES FOR COMB HONEY.

The following rules adopted by Eastern and Colorado apiarists are given in Gleanings in Bee Culture and are perhaps of interest to California bee men.

Eastern Grading Rules.

Fancy.—All sections well filled, combs straight, firmly attached to all four sides, the combs unsoiled by travel-stain or otherwise; all the cells sealed except an occasional one, the outside surface of the wood well scraped of propolis.

A No. 1.—All sections well filled except the row of cells next to the wood; combs straight; one-eighth part of comb surface soiled, or the entire surface slightly soiled; the outside surface of the wood well scraped of propolis.

No. 1.—All sections well filled except the row of cells next to the wood; combs comparatively even; one-eighth part of comb surface soiled, or the entire surface slightly soiled.

No. 2.—Three-fourths of the total surface must be filled and sealed.

No. 3.—Must weigh at least half as much as a full weight section.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark; that is, there will be "Fancy White," "No. 1 Dark," etc.

Grading Rules of the Colorado State Bee Keepers.

No. 1.White.—Sections to be well filled and evenly capped except the outside row, next to the wood; honey white or slightly amber, comb and cappings white, and not projecting beyond the wood; wood to be well cleaned; cases of separatored honey to average 21 pounds net per case of 24 sections, no section in this grade to weigh less than 13½ ounces.

Cases of half-separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 23 pounds net per case of 24 sections.

No. 1 Light Amber.—Sections to be well filled and evenly capped, except the outside row, next to the wood; honey white or light amber; comb and cappings from white to off color, but not dark; comb not projecting beyond the wood; wood to be well cleaned.

Cases of separatored honey to average 21 pounds net per case of 24 sections; no section in this grade to weight less than 13½ ounces.

Cases of half-separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 23 pounds net per crate of 24 sections.

No 2.—This includes all white honey, and amber honey not included in the above grades; sections to be fairly well filled and capped, no more than 25 uncapped cells, exclusive of outside row, permitted in this grade; wood to be well cleaned, no section in this grade to weigh less than 12 ounces.

Cases of separatored honey to average not less than 19 pounds net.

Cases of half-separatored honey to average not less than 20 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 21 pounds net per case of 24 sections.

MANAGEMENT OF BEES.

Bees may be managed for either the production of comb honey or for extracted honey. While they will produce more of the latter to the hive than comb honey, yet the higher price that comb honey will bring makes the income from each amount the same.

The difference in the management is that for comb honey little section boxes are placed in shallow "supers," or upper stories, in which the bees build about one pound of honey per box, while for extracted honey the upper story is deeper and contains, instead of section boxes, large frames, in which the bees build their combs and store their product, the honey being extracted by the keeper and the combs used over again.

In comb honey the bees have to build new combs each time, but for extracted honey the same combs are used over and over again, and thus the bees have time to give more extracted honey per hive than comb honey.

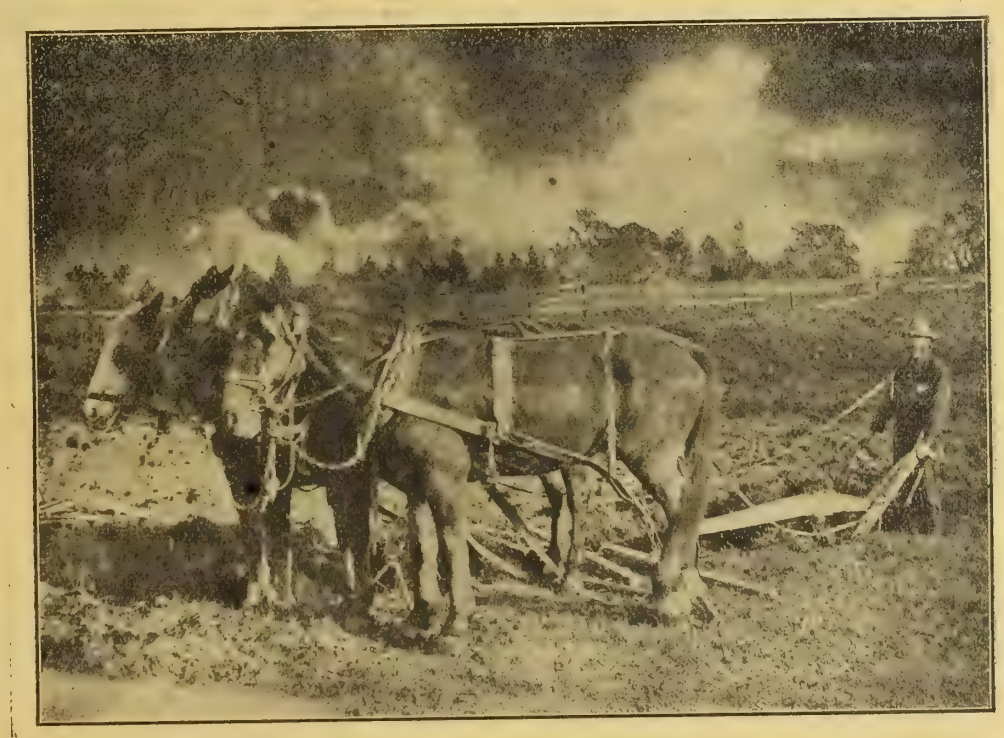
The method of extracting the honey is very simple, the first thing being to throw a puff of smoke from the smoker into the entrance of the hive, and in about two minutes the bees will be subdued. The next thing to do is to raise the top of the hive and lift out the frames one by one, and after gently brushing the bees off, to carry the frames to some room in which the extractor is kept. All is now ready for extracting. Taking a knife especially made for the purpose, the beekeeper shaves off the cappings, or tops of the cells, and, replacing two combs in the extractor, he gently whirls them around for about five minutes, and at the end of that time every drop of honey has been extracted and the combs are returned to the bees, who fill them again in a few days.

One advantage of running bees for extracted honey over that of comb honey is that it does not lead to swarming; but as this perfectly natural process comes from lack of space in which to store the honey that is at times coming very freely from the fields, it can be controlled by giving more boxes to be filled, and by clipping the wings of the queen, in which case every swarm can be hived.—Globe-Democrat.

THE BANTAM SHOW.

The second one of the three poultry shows held in Los Angeles this year was the Fifth Annual Exhibition of the Southwestern Pigeon and Bantam Club, recently held in Chutes Park. There were 236 bantams displayed and 484 of 23 varieties of pigeons. Judge F. H. Thomas of Los Angeles placed the ribbons on the bants and R. D. Moore of Oakland, on the pigeons. The number of bantams exhibited was large for a bantam show and the quality was as a rule exceedingly high. Amongst the winners are the following: Golden Sebrights, M. E. Dillingham, Bud Stevens; Silver Sebrights, F. H. Thomas, W. J. Bodger; Buff Cochins, M. E. Dillingham, W. H. Cornet; Black Cochins, W. J. Blackman, W. J. Bodger; White Cochins, W. J. Blackman, W. J. Bodger; Partridge Cochins, M. E. Dillingham; Light Brahmas, M. E. Dillingham; Black Tailed Japanese, M. W. Smith, M. E. Dillingham, H. W. Richardson, and Ida A. Richardson; Black Breasted Red Games, W. J. Bodger, M. E. Dillingham; Birchen Games, W. J. Bodger; Old English Games, W. J. Bodger; Red Pyle Games; W. J. Bodger; Brown Red Games, W. J. Bodger; White Games, John Brenton, W. Morehouse; Golden Duckwing, W. Morehouse; White Booted, W. J. Bodger; White Crested Polish, R. D. Peck; Rose Comb Brown Leghorns, Barlow & Vogel; S. C. Brown Leghorns, Barlow & Vogel.

Best display of Cochin bantams, W. J. Blackman. Best display of Black Tailed Japanese M. M. Smith. Best display of all kinds bantams, W. J. Bodger. Best display of Game bantams, W. J. Bodger.



SAN JOAQUIN COUNTY PLOWING.

CHICKEN CHAT.

Possibly Roup or Pip.

In your answer in the January 7th issue to the lady who lost three fowls that acted as if they had swallowed something, I wish to say that I think it must be a disease, because I lost a rooster last week in exactly the same way. There is no barley, no lime, or no alkali land here.—Mrs. H. K., Watsonville.

Chickens with diphtheritic roup sometimes act as if they had swallowed something that wouldn't go down, as the membrane forming in the air passages slowly chokes them to death, and is a very serious disease indeed.

But in this disease the birds refuse to eat, while the birds referred to in the article above tried to eat up to the very last, but were unable to do so. There is a disease called "pip" which is a horny growth upon the end of the tongue, preventing the bird from eating, but that would surely have been noticed in examining the fowl, I should think. This must be treated by dropping powdered chlorate of potash upon the tongue, and removing the growth with the pen-knife.

* * *

Picking Feet.

Will you kindly tell me what to do when young chickens pick each other's feet?—Subscriber, Douglas, Arizona.

The young cannibals haven't enough to do to keep them out of mischief. Put chaff in their runs so their feet will sink down out of sight and make them scratch for their living.

Also put a head of lettuce, an apple or an onion where they may pick at it and be sure to place a small piece of fresh meat where they can work on that. A piece of trapped gopher, where one is sure no poison has been placed or some of the pieces of game too much shot up for the table will be a grand feast for the chicks.

A pinch of salt in their feed will also help them to better behavior, as it is some element in their food which is lacking, in part, which causes this provoking habit.

"SAVE THE WATER."

J. B. Neff writes that the article last week on Save the Water which was a series of disconnected notes quoted from a paper reporting account of an institute is in no sense a correct account of his statements at that institute. A careful reading shows many inaccuracies which Mr. Neff never uttered.

One of the principal subjects which was discussed at the National Wool Growers Association was that of the erection of immense warehouses to store the output of wool until a satisfactory price could be secured for it, meantime issuing storage certificates upon which wool producers could secure money advances.

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No other remedy has such a record for curing spavin lameness, splints, curbs, shoe boils, thrush, swellings, cuts, etc., as well as colic, founder and distemper.

All over the country, in over 100,000 stables, Tuttle's Elixir has proved itself the dependable and safe remedy for all the ailments mentioned, and has won and proved its title of "The Old Reliable Standby."

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Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Sick Pigs.

I have been losing my three months old pigs at the rate of about one of two every three or four days. They grow weak, although they have an abundance of feed.

We have three brood sows that seem to be similarly attacked. They are thin from suckling pigs, and I think have been bred lately. One of them has been growing thinner for over two weeks and lies around and sleeps all of the time unless driven out to feed.

When I drive her out, she will cough at first and there will be a sort of slobber come from her mouth. She will then go right to eating and if she were not so thin and humped up, one would not know there was anything the matter with her.—L. G. C.

Probably catarrhal pneumonia which sometimes runs into consumption. I should certainly kill one or two of the worst cases and examine them carefully to find the affected portions of their bodies. Catarrhal pneumonia is not rapidly fatal nor is it necessarily fatal, for if the weather turns warm and sunny, many cases recover without treatment. Start in by cleaning out and spraying the walls, sides and floors of a pen, using anyone of the coal tar preparations or using carbolic acid in weak solutions. As soon as the pen is dry, put in plenty of bedding, then pick out the pigs that are near to one size and put them into the house. Go through the yard separating the pigs into lots, taking, of course, the sickest ones in one lot. Feed them on soft food as scalded alfalfa meal, bran—two parts to one part of oil meal, adding milk if you have it sweet. Any sort of roots may be added if stewed well until tender enough to be eaten without effort. The following mixture helps them out. Ten pounds of charcoal, ten pounds of ashes, five pounds of powdered sulphur, five pounds of bluestone, five pounds of ground bone, one pound of salt, one pound of red pepper and one of anise seeds; the last two articles are not necessary, but sometimes make the pigs eat it better. Put this mixture into shallow boxes where they can eat of it freely. If the bran, alfalfa meal, oil cake or vegetables cause looseness of the bowels, a small quantity of rolled barley fed dry will often correct the trouble. As soon as they recover condition, they can be gradually put on to their regular feed again. They must be kept dry and warm to recover. The smaller weaker pigs must not be allowed to sleep with the larger ones as they are too weak to escape being smothered. Spray the houses and floors frequently enough to keep them pure. Plenty of clean bedding and no drafts in the houses may be secured by having drop curtains over the doors made from barley sacks, nailing them at the top of the openings and putting across the bottom a pole. The pole will hold the corners out and prevent them from being blown around. The pigs learn to push under the poles, to enter the houses.—M. E. S.

Oregon Questions.

I live in the mountains of Southern Oregon, close to Rogue River. Much of the soil here is heavy. Some is gravel and covered with chaparral—called chaparral land; while much is adobe. Over much of the land is a growth of fir, pine, oak, etc., here open, here thick.

The winters are mild—we have had to date 12 degrees of frost. Our winters are rainy and occasionally snow falls, in the valleys, but plenty of snow on mountains near by. We have here about 30 to 35 inches of rain, being very dry from June till September.

There is little grass growing on the ranges, having been eaten off by a surplus of cattle, hogs and sheep. There is no sod, as in the prairie states, except where sheep or goats have congregated largely, tramping down and heavily fertilizing the top soil. I wish to introduce some good pasture grass on my own fenced land. No attempt seems to have been tried so far, to my knowledge. Will burr clover thrive here as in California? I am told alfalfa will dry out except where irrigated. Will the Persian alfalfa thrive here without irrigation. Can you recommend any other grass or forage plant? Cattle live here through the winter, largely by browsing—hogs fatten on acorns when there is a crop, but is not a sure crop.

Do you think chestnuts will thrive here; also pecans? Where can seed suitable for planting be obtained? I do not know if they are sulphured where grown and if that would injure growth, or I could buy them in the open market. Will figs thrive in this climate? Will eucalyptus grow where it is as cold as it is here?

Our roads are impassable and your paper is most welcome. We enjoy sitting by the fire and reading, these long evenings.—M. H. Cusick, Trail, Oregon.

It would seem that the only thing this querist can do, is to try some experiments, just as every pioneer must do. He does not say how much lower the mercury has been known to drop, but judging from the reports in today's paper it must be considerably lower than 12 degrees below freezing now. I see no reason why alfalfa would not produce one crop annually; for while it will not grow and make a crop through three or four months drought, it will live and come up smiling when the rainy season returns. Your correspondent probably means Turkestan or Arabian alfalfa when he speaks of Persian. Imported seed is claimed to be hardier than American product and is quoted at 28 cents per pound by mail. Would it not be possible to get water for irrigation at a small cost? Rye, if sown in the fall, would produce an immense quantity of forage in the spring months, I should think. If the situation were mine, I would secure a pound each of several varieties of grass seed and sow them as an experiment. And I would arrange to turn some of that mountain water on the land and see what effect it would have. Burr clover would doubtless thrive through the early part of the season and ripen its seed when the dry season came. But it would also sprout and start to grow on the advent of rain in the fall, but would not survive the winter. Give it a trial.—Q. A. L

I question if the pecan would thrive there. The chestnut might. It is entirely hardy. You can get one year seedlings very cheaply. It is a question with figs, but it wouldn't cost much to try. The eucalyptus is not hardy enough to endure the climate. —Q. A. L.

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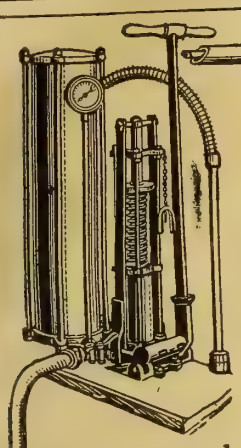

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Tomatoes.

Please give names of best tomatoes put up by canneries. How is tomato seed bed prepared?—Subscriber, San Jose.

No variety seems so popular with the canners as the Stone. Be sure you secure a good strain of seed.

As the canner rarely begins on tomatoes before Sept. 1st, there is no necessity for starting early, and hotbeds will not be needed to start the seeds. No way that I ever tried is so cheap and successful as to grow them in flats—such as are now used so largely in growing encalyptus trees. Sow the seeds in rows in the flats and when they send out the third leaf, prick off into similar flats, putting them about two inches apart each way. When they are three to four inches high they can be taken to the field and set into permanent quarters without loss, by cutting out the ordinary curved trowel carried by the seedsman.

This method if properly handled will give strong, stocky, well-rooted plants that will transplant without check or loss, and at a very low cost. In our own work we frequently use pots instead of flats, but then we have them always on hand by the thousand, and structures for the care of the plants.—Q. A. L.

Residue from Acetylene Gas.

Is the residue from acetylene gas plant of any value as a spray for apple and pear trees, the object being to combat woolly aphis and fungus? Should it be added to salt and sulphur, and how much should be added to such residue?—E. C., Orange.

We have never heard of this being tried and inquiry amongst farmers shows that the opinion prevails that while it might be worth an experiment the results would be very questionable. Excepting where a farmer is of experimental turn and has means to carry it to a conclusion, and also can afford to put up with failure on the part of such a spray it is best to stick to the well tested formulae. Most of these have been tested under all kinds of conditions by the State Experiment Stations.

From California Horticulture by Roeding.

a square of soil with each plant. When you sow the seeds place the flats on perfectly level land in a warm situation and if likely to be molested with dogs or chickens, make a frame of boards eight inches high and cover the frame with chicken fence wire.

When you transplant them place the flats in a similar way and shade the plants for the first 24 hours or until they get established. The soil for these flats should be very rich and mellow and it would pay to run it through a screen of ½-inch mesh. I have found it a good plan to cut a piece of burlap the exact size of the flat and after sowing and covering the seed lay the burlap over the top, but do not water until all are in place in the frame. Examine the boxes after the first 48 hours and when the seed has germinated and is beginning to push through, remove the burlap. This method requires less water and does not displace the seed. The transplanted plants will have to be looked after daily to see they do not suffer for water. They should be well watered before taking them to the field and taken from the flat as planted. Use for a tool what is known as bricklayer's pointing trowel—the largest size. This tool enables you to cut out a square of soil with each plant. No greater abomination in the way of a tool was ever offered than

Spraying for Coddling Moth.

We have a small orchard of apples, peaches, plums and apricots. The apples are wormy, the peaches have split pits, apricots big crop, but fruit very small. Can you tell me what to do for these things? Have sprayed my strawberries with Bordeaux mixture when the vines were full of bloom. Some are now full of green fruit. Will the spraying injure this fruit or make it poisonous?—R. B., Compton.

There are several questions here which to answer fully would require much space. No one treatment fits any two of the cases. The apples, to prevent from being infested with the coddling moth or the worm, should be sprayed with Paris green, 1 lb. to 200 gal. of Water. Directions later. The split peach pits is a question which Prof. Ralph E. Smith of Whittier is investigating and which has never yet been satisfactorily answered as to cause of remedy. It is barely possible that spraying with the Bordeaux would be of value for that, but sure it is that if

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Montana farmers are urging the National Congress to give relief from smelters whose fumes cause destruction of all vegetable growth within long distance of the smelters.

peaches are infested with curl leaf, that spray is of exceptional value. Do not add Paris green or acetate in such a case. The spraying with Bordeaux on strawberries will not poison the fruit as we assume there was no necessity for adding the arsenate to that spray. Always bear in mind that the arsenate is only for insects which eat of the leaves or fruit while the Bordeaux is only for a fungicide. The apricots can only be handled by thinning at fruiting time or rather before the fruit attains any material size in the springtime. It is very probable that this year you will not have sufficient to require it, but if the trees are heavily loaded thinning will aid you to secure better sized fruit.

Water Required.

How many miners' inches must be developed to irrigate 5000 acres of land to be planted to vines and trees in this section? Loss of water when run over a mile is over 30 per cent. Temperature often 110 with scant rainfall in winter.—R. S., Wasco.

It would be impossible to give definite information in answer to such a question, as local conditions, kinds of fruits, especially texture of soil and subsoil would be the determining factors. Roughly, or as a mere guess, we might say 1,000 miners' inches of water. That would be an inch to five acres which many orchardists think is required for best results especially on sandy soil. Others have done with an inch to eight and some with an inch to ten acres, while some sections of your valley have had good success with vineyards with no water at all. Of course this could not be done with you.

Pears Immune to the Blight.

Does the blight affect all varieties of pears alike? If not, please give names and descriptions of varieties least affected.—W. E. L., Lemoore.

There is a material difference in the effect of blight on varieties of pears. Some which happen to be the less desirable are the more resistant. Among the most desirable varieties which are to a certain extent resistant are the Winter Nellis, but unfortunately these do not bear well in many sections of the state. The Le Conte is also resistant to a certain extent. It has been advised to use this stock on which to graft the more desirable varieties. There are at present many tests being made which may add to our knowledge on this subject in the near future. The Bartlett, one of our very best pears, is one of the most susceptible. Those less susceptible are Le Conte, Winter Nellis, Seckel, Angouleme and Lawson.

Grafting Vineyard.

I have ten acres of vineyard, planted to Mataro and Carignane wine grapes. Vines are eight years old and bore last year about six tons to the acre. Soil is decomposed red granite. I have a few Red Emperor vines adjoining, one year old or rather two this spring and there were one or two bunches on vines this year; they were good color. I am thinking of grafting the 10 acres of wine grapes to Red Emperor, as wine grapes did not pay well this year and I have heard that the Red Emperors were fine shippers.—J. J., Escondido.

On red soils like those of Escondido the red grape are almost certain to color well. Now as to planting to Emperors, personally I am going slow at present. I have sixty acres of them on the home ranch, and about thirty on the Palomitis ranch. Yet I have been eighteen years in building up the brand under which we are selling those grapes. They have proven profitable to me every year; even last year. Now do you think I am jealous when I tell you that the packers here complain greatly over the increased acreage and tell me that the large plantings of Tokay in the northern districts are making, each year, the marketing more and more of a problem. If we have early rains, then the Emperors are all right, for the Tokays will not stand much rain, still one does not like to be like the old Scotchman that prayed in the church, "Nay good Lord, will Thee not in thy mercy make the wee beasties of County Glen Garry ail have th' scab sore badly, and good Lord will Thou be pleased to shield the wee lambie and ewes of air flocks from the same, for we are a muckle righteous folks and give Thee the praises."

The grafting over of old vineyards seems to have been a failure and is practically abandoned in the vine districts of the state. Ten years ago there was a lot of it around here and yet, today, it is not attempted. A complete stand of shapely vines has never been secured by any one. The vines that fail to grow are either killed outright or else must be left a couple of years before they are sufficiently large again to graft. At the end of four years with the grafting and regrafting, more money will be spent and less vineyard to show for the money, than though the old vines had been removed and a new vineyard started.

As to table grapes for Eastern shipment. Are your freight rates such that you can compete with the Sacramento valley? We have this hauling always to consider in California. With the Imperial Valley to supply the Arizona and Southwestern trade, it looks doubtful, and the local market is not your best market to cater to in planting of desirable varieties. The Royal Isabella and grapes of that type sell well in the local markets.

Advertise.

I am always interested in reading the poultry page of the Cultivator, and would like to ask if you could give me name and address of some one who has some nice Barred Rocks for sale.

I have been watching for ads in the Cultivator for some time, but don't find any, only of Chas. E. Smith of Gardena, of whom I bought last year ,and want fresh blood this year. I have a fine bunch of hens and have no trouble selling them at a good price.—Mrs. S. F.

Now it is against the rules to mention names of breeders in answer to an inquiry like this, but I send the letter and hope some of our Barred Rock brethren will take the hint and advertise stock in the columns of the Cultivator, and I assure them that they will find it an excellent medium for disposing of surplus stock—Mrs. Metcalf.

"Wind Pudding" for the Calf.

Please tell me through the Cultivator if the foam from fresh separated milk will be injurious to calves? I have been told that it will kill them. —O. W. R., Selma.

The foam on the skim milk from the separator, "wind pudding," is not poisonous. It is simply whipped milk. I can understand that if one calf in a herd should receive it for his portion he might, after a few days, look as though he had been starved. By placing the milk where it will have time to settle it will be seen how small a portion of milk it really contained. Whipping is a housekeeper's device to make a small amount of cream do a large amount of work. The little granddaughter in this house begs from the cook a little vanilla and some sugar and the boys fill her little cup with wind pudding and she calls it ice cream. The cats too, love it, and little goes to the barns from the separator here, so you see I am quite sure it is not poisonous or the precious baby could not have it frequently.—M. E. S.

Abortion.

Many of my cows will come in within three months after breeding. Why?—Tulare Subscriber.

The reasons may be several for these conditions. Have these cows had an epidemic of aborting? Sometimes cows lose their calves so early that it is not noticed, while a few may carry their calves nearly full time and then the calf fails to live after birth. Some times the aborting does not occur, but the germ takes the form of the cows not cleaning after dropping their calves. A simple thing to do for these cows is to try the yeast treatment: Take a pint of lively yeast and add it to a quart of warm water and give the cow a douche six hours before breeding her. After she is bred, put her in a quiet place for a day away from the herd. The yeast, it must be remembered is a living organism and must not be killed with hot water; 80 degrees is the right temperature. I note people telling of the failure of the yeast treatment after saying they put boiling water on the yeast. The old treatment used to be hot water, a tablespoonful of baking soda in the douche, this will also bring around many cows. Now as to the sire, use him only every other day and feed

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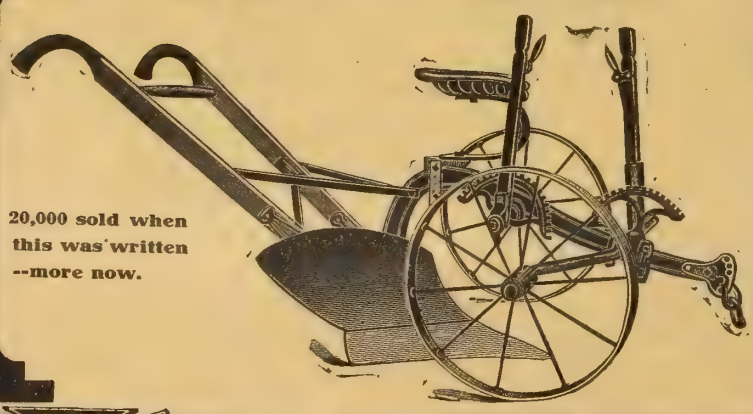
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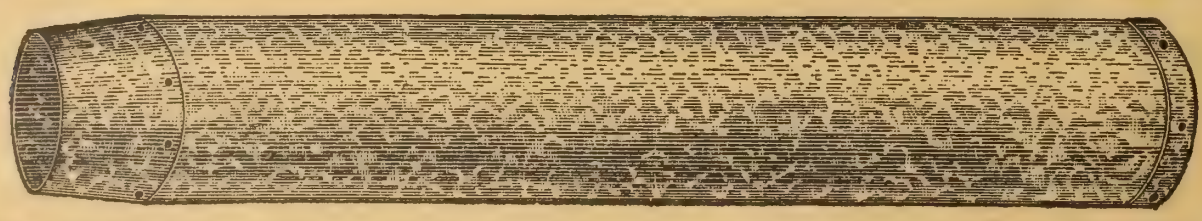
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im some grain. I know that goes ard at the present prices of grain. should try to breed a couple of cows to outside sires and find out f the fault was in him.— M. E. S.

Articles which have appeared in he C. C. on contagious abortion should also be read by this subscriber and thorough disinfection of stables be made.

Various Questions.

How are palm trees started from the seed? What is the best way to raise olives from cuttings? What is best to use on nursery of young seed bed oranges to secure growth? What is right way to cure up buds for spring budding for young orange trees? Or are fresh buds better?—L. C., Lindsay.

Palm tree seed is planted very much as corn would be planted and raised in the open. Of course we refer now only to the hardier varieties which grow readily out of doors. There are some varieties like the Kentias which are very difficult to propagate and require the glass house and experienced handling. Olive trees are reproduced from the small herbaceous cuttings which require hot house bench or from the large cuttings or truncheons. For the latter method of growing take cuttings at this time of the year say the size of a lead pencil or up to one inch in diameter and ten to sixteen inches in length and set deep in row leaving only two or three inches above ground. We assume by question three you mean fertilizer. The quickest acting would be a very small amount of nitrate of soda applied to the soil dissolved in water. But probably the best and safest way is a thorough mulching with cow manure over the seed bed immediately after the seeds are planted. We do not understand what you mean by curing up buds unless it is in selecting the wood for the budding to choose only ripe, well rounded buds. You will not be troubled with getting any fresh growth at the spring budding time. The buds are not cut from the trees until ready to use or if kept any length of time it is necessary to see that they are kept moist and not allowed to dry out until ready for use. Packing in moss or damp sand is the best way for preserving them.

Egg Preservative.

Please give the best egg preservative.—J. G. H., Enterprise, Oregon.

The best of all egg preservatives is water glass and the method of handling it will be given in the Cultivator within the next two or three weeks. Of course cold storage is probably the better way, but we assume the inquirer is asking for the farm method of preserving them.

Paint for a Flume.

What is the best kind of paint for an old flume that leaks?—A. L. P., Carpenteria.

Your queries regarding pruning of berries has been forwarded to Mr. Lobingier, excepting that about logan berry pruning which was fully described in our issue of October 15. The question of paint for an old flume is a hard one to answer so as to give you satisfactory information. At best you will probably have trouble with it after painting. A good application of coal tar is probably the best of anything that is within the line of reason as to cost. Probably the trouble is that your flume is up out of the ground where the sun has opportunity of warping and pulling apart the joints. Where they have been too bad we have seen the cracks calked with old rags, and then soaked with the tar.

Farcy Remedy.

In the veterinary department of the Cultivator a couple of weeks since a subscriber asking for help for his horse which showed certain symptoms of farcy, was advised that if farcy or glanders existed they were incurable and the horse should be slaughtered at once. A subscriber takes exception to this and gives the following formula which was given to him by a practising veterinarian which he declares has cured horses for him.

Nitrate Potash 2 ounces.
Sulphate Iron 2 drams.
Antimony 2 drams.
Powdered Gentian 1 ounce.
Soda Bicarbonate 4 ounces.

Dose, tablespoon twice a day on wet feed.

Veterinary.

Answers in this column by Dr. R. T. Whittlesey, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Looseness.

I have a ten year old horse in good flesh and health, but when not at work becomes loose in bowels. As soon as he is put at work, trouble leaves and condition becomes normal. I feed oat hay of good quality with rolled barley and bran added to ration when at work. What is cause and what treatment would you recommend?—Rancher.

This is caused by excess of fluid in bowels which is carried off other ways when the horse is working. Get the following; powdered chalk one pound, gallic acid one-half ounce. Mix and give teaspoon heaping full twice daily in feed, gradually increase until results are apparent.—R. T. W.

Abscess.

Our cow had an abscess on her jaw which broke and healed first on one side and then the other. Now she has several small ones like boils on her ribs near the back bone. These break and water runs out. She is a young cow, always has been very healthy and fat, but is thin now. She eats plenty, but has gone quite off her milk. Should we use her milk?—J. J. J.

The abscess on the jaw should be kept open until healed from the bottom. Wash clean and afterward use tincture of iodine inside the sore. The sores on the back should be treated the same way. Examine them closely to see if there are not "grubs" in them. I think there is no objection to using the milk.—R. T. W.

Mallein.

What effect does the mallein test have on an animal affected with glanders; also effect on a healthy animal?—X. Y. Z.

Mallein has no apparent effect on a horse not having glanders.

The effect on a horse with glanders is different depending on the amount of glanders "germs" in the horse. In the average case it produces a rise in temperature, ranging from two to five degrees. Temperature commences to rise eight to twelve hours after injection, gradually goes to maximum, then slowly falls to normal.

On a glandered horse there will be some enlargement and soreness at point of injection and often stiffness, and a general disturbance of the whole system, which may last for several days.

The effect of mallein is always most marked in animals showing only slight symptoms of glanders. Horses with very marked symptoms are affected peculiarly, but the general symptoms are usually sufficient for diagnosis in these cases.—R. T. W.

DR. WHITTLESEY'S VETERINARY REMEDIES.

These are not ordinary mixtures but are from well tried formulas, used in an extensive practice in Southern California for nearly a quarter of a century. Dr. Whittlesey's Sulphur Arsenical Salve for deep fistulous or ordinary chronic, indolent sores such as, "Poll Evil," "Fistulas," "Quitters," "Thrush," "Scratches," "Warts," "Collar sores" or "Sit-fasts." $1.00 per package postpaid. Printed directions. Dr. Whittlesey's Antiseptic Healing Powder. Forms a coating over raw surfaces. excludes air, flies and floating germs. Makes a cheap and convenient dressing for the many sores that occur to stock on the ranch. $1 full pound can postpaid.

DR. R. T. WHITTLESEY.
Veterinary Hospital, 714 East Seventh St., Los Angeles, Cal.

A BIG PUMP.

During the past week the Byron Jackson Company of Berkeley and San Francisco shipped a 3000 gallon pump to the Pacific Reclamation Company's works at Magill, California. This pump is guaranteed to raise 8000 inches of water in 24 hours.

With a large factory at Berkeley the Byron Jackson Company is able to furnish pumps of any capacity for ordinary and special work. They also submit plans for any particular irrigation project and design special machinery to meet special requirements.

A large, illustrated catalogue giving complete details of different styles of pumps, engines and supplies will be issued shortly. This book should be in the hands of every one who is interested in irrigation and general machinery requirements. It will be sent free upon publication if you mention the California Cultivator.

IT'S PENNY WISE

Policy to set out a good tree, costing good money, and then let the sun burn the bark or the rabbits gnaw it, when for $1 an acre you can get Yucca Tree Protectors that are practically indestructible. Write for free sample of the wrap. Yucca Manufacturing Company, 1380 Willow street, Los Angeles.

The Glen Ellen Grange is petitioning the legislature to amend the Cartwright law so as to make the creation of monopolies a felony.

300,000 Feet Water Pipe Cheap

ALL SIZES

150,000 feet of this shipment is second-hand pipe, practically as good as new, and is now on sale at a big discount by the Adams Pipe Works, 2025 Bay street. Sizes and prices: ¼-inch 2 cents per foot; ⅜-inch, 2 cents per foot; ½-inch, 2¼ cents per foot; ¾-inch, 3 cents per foot, 1-inch, 4¾ cents per foot; 1¼-inch, 6 cents per foot; 1½-inch, 7 cents per foot; 2-inch, 9¾ cents per foot; 2½-inch, 15 cents per foot; 3-inch, 19 cents per foot; 3½-inch, 24½ cents per foot; 4-inch, 30 cents per foot.

Oil well casing prices and sizes: 2-inch, O. D. 7 cents per foot; 2-inch, I. D. 9 cents per foot; 3-inch, 13½ cents per foot; 3¼-inch, 16 cents per foot; 3½-inch, 17 cents per foot; 4-inch, 20 cents per foot. All pipe is carefully inspected, new couplings and new thread are put on every piece, every joint is guaranteed to be first class, serviceable pipe. Mail orders promptly filled. To reach the Adams Pipe Works in Los Angeles, take car marked Pacific Boulevard, starting east on Seventh street from Broadway. Ask conductor to let you off at Bay street and go east half a block. Phones, F1917, Broadway 1264.

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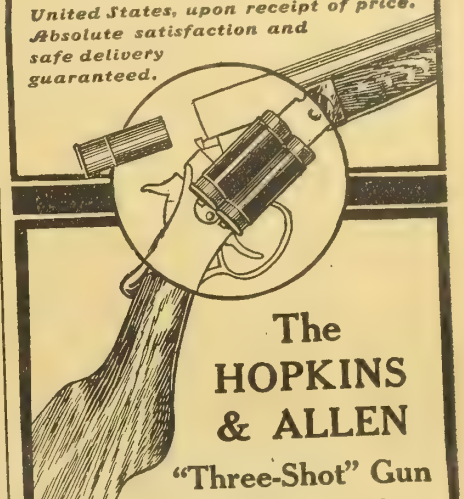

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is unequalled for quick shooting. The three shots, one in the gun and two in the clip, can be fired with the rapidity of a repeater. No more missing good shots because your ammunition isn't with your gun. There are always two shells in the clip. No need of keeping a loaded gun in the house—a shell is slipped into the breech at a second's notice. Your gun is always ready for a shot at hawk or game, and you don't have to hunt for shells while the game gets away.

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Fine decarbonized steel barrels bored full choke for close shooting and deep penetration. Frame case-hardened. Stock and fore-end fine walnut. Top snap action, locks automatically, and joint takes up its own wear. Rebounding hammer, rests in safety notch after firing, eliminating danger of accidental discharge. Hard rubber butt plate. This gun is guaranteed to shoot factory-loaded nitro powder shells. 30 or 32 inch barrels. Automatic ejectors.

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The only lamp on the market that is sold under an absolute guarantee.

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GREAT ECONOMY—COST LESS TO BURN than an ordinary lamp. As easy to operate as gas or electricity, and better than either. ABSOLUTELY SAFE under all conditions. Lighted and extinguished like gas. Burned HIGH or LOW like GAS without a trace of odor. And a BRILLIANT, soft, steady, shadowless light—but this you will have to see to appreciate.

The lamp as shown in cut burns 22 hours on 3 quarts of oil.

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Household Department

BE STRONG.

Be strong!
We are not here to play, to dream, to drift;
We have hard work to do and loads to lift.
Shun not the struggle; face it. 'Tis God's gift.

Be strong!
Say not the days are evil—who's to blame?
And fold the hands and acquiesce—O shame!
Stand up, speak out, and bravely, in God's name.

Be strong!
It matters not how deep entrenched the wrong,
How hard the battle goes, the day how long.
Faint not, fight on! Tomorrow comes the song.—Maltbie D. Babcock.

A Quiet Home.

THE PARROT AND THE PHONOGRAPH.

THE Crawfords had a parrot and the Beldens had a phonograph, and a narrow hall separated them.

"I'd rather be sentenced to occupy a cell in 'Bankers' Row' at the penitentiary than have to move," said Crawford, "but it looks to me as if we'd have to get out. That phonograph is going to make a nervous wreck of me if I have to listen to it much longer."

"I'm glad," his wife replied, "that you are coming to your senses at last. If you had listened to me last spring we would be nicely settled somewhere else now and all this trouble would be over with. If you find it nerve-racking, when you are here for a few hours at night and in the morning, what do you think of the effect it has on me, being here all day? I heard today of some new flats in a lovely neighborhood. If you like I'll go and look at them tomorrow."

While the Crawfords were discussing the matter Belden was informing his wife that his endurance had about reached its limit.

"That parrot," he said, "is going to make a raving maniac of me if I can't get away from it pretty soon. If I owned a flat building I wouldn't let a family with a parrot into it any more than I would think of admitting people who were stricken with the plague. By George, I wish there might be some way of getting rid of the nuisance without causing a general disturbance."

"There is a way, Henry," his wife answered, "and I've been seriously considering it, although I haven't wanted to say anything to you until I was sure about it, for I didn't want to be disappointed if it didn't happen to be possible. I have been inquiring about some new flats that are going to be very attractive, and if we wish to engage one of them now we can get it for just what we are paying here. Aside from the parrot, the new place will be much more desirable than this and—can't you go over with me in

the morning to take a look at it before starting down-town?"

Belden argued feebly against moving, but at length permitted himself to be won over, and after he had seen the new flat he became enthusiastic.

"It will be just as well," he said, "not to let the Crawfords know that we intend to get away—at least not until we are all ready to move. There's no use having a quarrel with them if we can avoid it. They would, of course, jump to the conclusion right off that we were trying to get away from them if they found out about our intention to go, for I've spoken to several people about the parrot. Crawford's all right, but his wife is a regular spitfire. I don't want you to get into any scolding contest with her. Start the machine. Let's have a little music."

A day or two later Mrs. Crawford met Mrs. Belden on the stairway.

"I suppose," said Mrs. Crawford, "you have no intention of moving this spring, have you?"

"Well," replied the other lady, feeling a little guilty, "we haven't thought much about it. My husband hates moving, so that I'm always afraid to mention the subject to him. I suppose we'll have to stay and make the best of it here."

"Go way! Go way! Get a move!" yelled the parrot in Mrs. Crawford's flat.

When Crawford got home at night his wife said:

"I had hoped the Beldens might be thinking of going, so that it wouldn't be necessary for us to do so, but they're not. I had a talk with her about it today. So we may as well decide right away whether to stay or not."

"They've decided for us," her husband declared. "We will have to go; so you may as well begin making arrangements. But don't let the Beldens know anything about it. We may as well leave on good terms with them if we can. Hello Polly!"

"Hello! Help!" screamed the parrot.

During the next two weeks things were strangely silent in the Crawford and Belden apartments, except for occasional hammerings; then one morning two large vans backed up in front of the building, and at last the secret was out. The Beldens knew the Crawfords were moving and the Crawfords knew the Beldens were off to a new habitation. Both women kept in their rooms, and the men, avoiding each other, started away, leaving the movers to handle things as they pleased.

Belden had been sitting for ten minutes on the front steps of the new flat building, when he perceived coming up the street a man who seemed to be in a hurry.

"Hello," he said to himself a moment later, "it's Crawford!"

When he reached the place where Belden sat Crawford paused, making no effort to conceal the fact that he was surprised.

"Are you moving in here?" he asked.

"Yes," said Belden; "are you?"

After Crawford had answered in the affirmative the two men looked at each other silently for a moment. Then a smile began to break over Belden's countenance and another appeared upon the visage appertaining to Crawford.

"What do you say to a little walk around the corner?" Belden suggested.

"I was just going to invite you," said Crawford.

They had not returned when the women and the vans arrived.—Chicago Record-Herald.

About the House

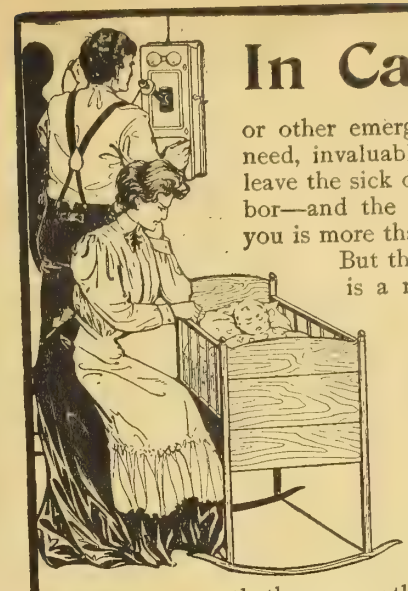
WHENEVER it rains in the winter time there is one thing that will make me perfectly happy—and that is to go in the kitchen and cook something. If I can bake, or boil, or fry, when the rain is beating against the window panes, "I ask nothing more of gods or men." So this morning after the breakfast dishes were disposed of I made doughnuts, and how I enjoyed it. When I had finished, a great heap of crisp, brown, sugary cakes rewarded me for my morning's work. They tasted as good as they looked and as this is the doughnut season I will tell you how I made them.

Beat one cup of sugar and two eggs very light. Add one teaspoon melted butter or lard, one cup sour milk, one half teaspoon salt and a little cinnamon. Mix one level teaspoon of baking powder and one half of a level teaspoon of soda in one cup of flour and stir it in, then add enough flour to make a soft dough. Roll out about one third inch thick, cut in rings or twists and cook in hot fat.

I wonder if any of the Cultivator readers have not learned of the many good qualities of the Hubbard squash. I confess that I cooked my first one only a few years ago. I sawed the squash in two equal parts and scraped out the seeds and stringy parts and then baked it in the oven. I served one half "in the shell," each person seasoning her helping with pepper, salt and butter. I say "her" helping for my husband refused even to taste it—said his mother never cooked squash in that way.

The next day I served the other half of the squash in a great golden heap seasoned and prepared like potatoes, but that misguided man refused the dish because he "didn't like squash anyway." But the next week I put before him a "pumpkin" pie, made of squash and then he admitted that "squash was good in its place," and he thought the place was pumpkin pie. The recipe for the pumpkin pie came from a noted chef in New York City, and it makes a delicious pie, using either pumpkin or squash. Cook and strain the pumpkin or squash and for three pints allow two tablespoons of flour, five eggs, one pint of sugar, one tablespoon of ground ginger and a little nutmeg, one teaspoon of salt and two quarts of milk. Mix all well together while the pumpkin is hot, or set the mixture on the back of the stove to warm. Line the pie pans with a good paste, fill as full as possible and bake in a moderate oven for about an hour.

A perennial remedy for colds is flaxseed lemonade. Pour a quart of boiling water over a teacupful of flax seed; add the juice of two lemons and enough loaf sugar to sweeten. Cover and steep for several hours. Strain and drink hot just before going to bed.



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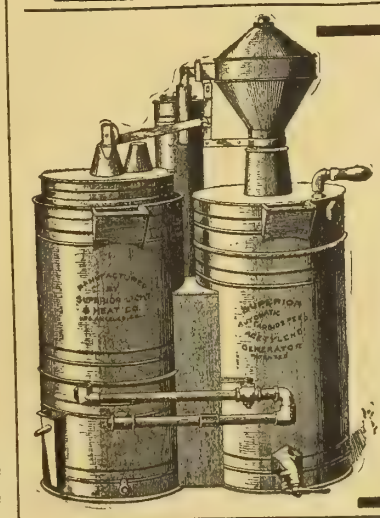

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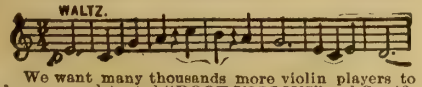

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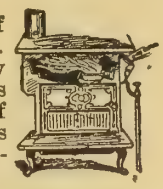

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One Merino Suit of Underwear	1.50	.98
Good Pair of Socks	.35	.09
Good Sunday Shirt	1.00	.39
Best Collar	.15	.04
Beautiful Tie	.35	.19
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Pair of Donga $5.00 Shoes	$5.00	.98
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Freight paid if full amount of cash is sent with the order to any city in the United States. We have 1,000,000 of the above bargain lots which we are absolutely positive will not last more than 30 days; **Order today.**

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The Produce Markets

Los Angeles Markets

LOS ANGELES, Jan. 27, 1909.

Butter.

Butter is a shade lower than last week, but very firm at present quotations. The storm has made uncertain train service from north which has worked a hardship on many dealers. The supply in storage is practically exhausted.

Produce Exchange wholesale quotations are as follows with actual selling price to the trade 2½c advance on Extras.

Creamery ex per roll	77½
Firsts	70
Eastern extra per roll	70
Cooking	23@25
"Butterine"	16@20

Cheese.

Southern California Anchor	16
Northern fresh	15
Longhorn	19
Eastern singles	16@16½
Cheddars	17
Swiss	16½
Imported Swiss	28
Daisy	16½
Oregon	16½
Limburger	17@19
Twin	16

Eggs and Poultry.

Eggs have declined materially and fresh stock is in good receipt notwithstanding stormy weather.

Eggs local candled	35@37
Eggs case count buying price	34

Dealers pay for live stock.

Hens per pound	14@16
Young roosters per pound	18
Fryers	20
Broilers per lb	22
Roasters	18
Old roosters	8
Turkeys	16@20
Geese	15@16
Ducks	15@16
Squabs	1.25@1.75

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs from 175 to 200 pounds	6¼@6½
Prime steers	4¾@5
Heifers	4@4¼
Calves per pound	5
Sheep ewes per head	3.75@4.00
Lambs per head	3.00@3.50
Wethers	4.50@5.00

Potatoes.

Wholesale prices are:

Sweets per ctl	1.50
Burbanks local	2.00
Burbanks northern	2.00
Sweets choice	1.25
Early Rose seed	1.75@2.00
White Rose	2.00
Highland fancy	2.00@2.25
Highland choice	1.50@1.75
Coast	2.25@2.50
Salinas	2.25@2.50
Oregons	1.75@2.00
Idaho's	2.00

Onions.

Wholesale quotations:

Australian Browns	2.00
Globes	1.50
Silverskins	1.75@2.00
Nevadas	2.35
Garlic	12½

Vegetables.

Artichokes per doz Northern	1.00@1.25
Asparagus per lb	60
Beets per doz	40
Bell peppers per lb	18
Beans string	12½@18
Beans Limas per lb	8@10
Brussels sprouts per lb	12
Cabbage Red per lb	3
Cabbage sack	1.50
Celery per crate	2.75@2.90
Chili per lb	15@20
Chili dried	10@12
Chicory per doz	40
Cucumbers per doz hot house	40@1.75
Cauliflowers per crate	1.25@1.50
Carrots per doz	40
Egg plant per lb	8
Green onions per doz bunches	15@20
Horseradish per lb	12
Lettuce per crate	60@1.00
Lettuce choice	75
Mushrooms per lb	35
Peas sugar per lb	7@8
Parsley	30@40
Parsnips	35@40
Rutabaga per doz	40
Rhubarb	85@1,25
Radishes per doz	15@20
Salsify	40
Summer squash per box	1.00@1.25
Spinach per doz	15@20
Turnips doz bunches	30
Tomatoes lug box	90@1.25

Citrus Fruits.

Navels fy	2.00
Navels ch	1.75
Tangerines	1.45@1.60
Grapefruit seedless	3.25@3.50
Grapefruit seedlings	1.50@2.00
Lemons fy	2.25
Lemons choice	1.50
Limes per basket	50

Fresh Fruits.

Wholesale prices on the market are:

Baldwins 4 tier	2.00
Bellflowers	1.15@1.20
Newton Pippins	1.25@1.50
Fall Pippins	1.50
Utah Jonathans	1.50
Red Pearmains	1.50
Spitzenberg	2.25
Grapes Red Emperors	1.75
Guavas per lb	4@5
Cornichons	1.50
Pears lug box	1.50
Persimmons per box	2.00
Pomegranates per box	1.75
Strawberries per box	12½@15
Raspberries	25

Dried Fruits.

Wholesale prices are:

Apricots	9
Evap. apples fy per lb	6½@7
Figs loose white	5
Figs blk	5
Peaches in boxes	7½
Peaches sacks	5½
Pears	9
Nectarines	9@10
Prunes 30's to 40's boxed	8½
Prunes 40's to 50's	7½
Prunes 50's to 60's	7

Beans Dried.

Wholesale prices are:

Limas per ctl	4.50
Pink No 1	3.00
Lady Washington	4.25
Small white	5.00
Black eyes	3.50
Garvanzas	3.50
Lentils	8.00
Bayou	3.50

Nuts.

Almonds IXL per lb	13½
Almonds choice	11½
Pecans polished	12@17
Peanuts Virginia	6½
Peanuts California	5
Walnuts No 1	12@12½
Chestnuts	8@8½

Honey.

Wholesale quotations:

Extracted water white	9
Extracted Light Amber	7
Comb W W	16
Comb white	15
Beeswax	30

Hay.

Prices paid to producers f. o. b. Los Angeles are as follows:

Barley No 1	18.00@20.00
Barley No 2	15.00@17.00
Alfalfa northern per ton	15.00@16.00
Alfalfa local	15.00@18.00
Tame oat No 1	18.00@20.00
Wheat No 1	18.00@20.00
Wheat No 2	15.00@17.00

Grains.

Wholesale selling price f. o. b., Los Angeles.

Wheat new per ctl	1.90
Kaffir corn	1.80
Corn Eastern sacked	1.80
White oats	1.85
Seed Rye	1.25

Feed Stuff.

Wholesale selling price f. o. b., Los Angeles:

Cracked corn	1.85
Shorts	1.80
Bran	1.65
Oil cake meal	2.50
Feed meal	1.90
Rolled barley	1.65

GRANDPA'S WAY.

Somehow, through all the day we children used to dread
When night would come, and mother'd say, "Now children, go to bed;"
Till grandpa came to visit us. He was a soldier, and you see
He's just as good and pleasant as ever he can be.
The very first night he asked mother with a smile
If the children ever marched to bed in good old soldier style.
Then he commenced to count: "One, two, one, two." I tell you it was fine,
And you don't know how quickly we all fell into line.
Since then, all day we kind of look ahead
For night to come when we, like soldiers, can march away to bed.
And grandpa says, if we've a task, we'll find it just the same—
It's so much easier to do if it has a pleasant name.

—Florence A. Hayes.

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

San Francisco Markets

SAN FRANCISCO, Jan. 26, 1909.

General market conditions have been very flat owing to storms and little possibility of moving products.

Butter.

Butter is exceptionally high and now finds ready sale at its highest quotation this year.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras per lb	46
California firsts	35
California seconds	28
Ladles extra	23½
Storage Cal ex	31

Cheese.

California young American fy	16½
Firsts	15½
California flats fy	13½
Firsts	13½
Seconds	11½
Young American Oregon fy	16
Eastern N. Y. Cheddars fy	17
Oregon flat fy	14

Eggs and Poultry.

Eggs declined early in week under larger receipts and are now stronger than a couple of days since.

Official quotations of the S. F. Wholesale Dairy & Produce Ex. are:

Fresh ranch extras	39
Eggs first per doz	37½
Eggs second	26
Pullets selected	35

Hens per doz	3.50@5.50
Hens extra	7.00@9.00
Young roosters	6.00@7.00
Old roosters	4.50@5.00
Fryers per doz	6.00@7.00
Broilers per doz	5.00@5.50
Geese per pair	2.00@3.00
Goslings per pair	1.75@2.00
Ducks young	5.00@9.00
Live Turkeys	20@25
Dressed Turkeys	20@26
Pigeons young	2.00@3.00

Live Stock.

San Francisco prices gross weight:

Steers No 1	4½@4¾
Do second quality	4@4¼
No 1 cow and heifers	3½@3¾
Second quality	3¼
Hogs 100 to 130	5¾
Hogs 130 to 250	6@6¼
Rough heavy	4½@5
Calves per lb	4@5
Lambs spring	5¼@5½
Wethers No 1	4½
Ewes No 1	4

Potatoes.

The storm has given strength to the potato market and strong advance has been made.

Wholesale market quotations:

River white fy sacks	1.40@1.60
Early Rose	1.65@1.75
Salinas Burbanks	1.65@1.85
Sweets per crate	1.75@2.00
Lompoc Burbanks	2.00
Early Rose seed	1.25@1.30

Vegetables.

Wholesale quotations:

Bell peppers per lb	20@25
Brussels Sprouts per lb	2@4
Celery per doz	40@50
Celery per crate	3.50
Cucumbers per doz	1.00@1.25
Chili peppers per lb	4@5
Egg plant per lb	20@25
Green peas per lb	4@8
Mushrooms per lb	5@8
Marrowfat squash per ton	20.00@22.50
Squash per box Southern	1.00@1.50
Onions green per box	70@75
Okra per box	1.25@1.50
Rhubarb per box	1.25@2.00
Tomatoes box Los Angeles	1.25@1.50
String beans	10@12½
Wax Beans	10@12½
Garlic new	9@10

Onions.

Oregons	2.25
California's	1.75@2.00

Citrus Fruits.

Navels fy & large sizes	1.50@2.50
Tangerines crates	1.25@1.75
Mandarins	1.35@1.60
Grapefruit seedless	2.50@3.50
Grapefruit seedlings	75@1.25
Lemons ch	2.00@2.50
Lemons fy	2.50@3.25
Limes	4.00@5.00

Fresh Fruits.

Bellflowers	85@1.00
Bellflowers No 2	50@65
Spitzenberg	1.25@2.00
Newton Pippins	85@1.15
Ben Davis	1.25@1.50
Winter Nellis	75@1.50
Persimmons	75@1.00

Dried Fruits.

Prunes 4-size basis	3@3¼
Santa Clara	3¼@3¾

½c premium for larger sizes

Apricots per lb; Choice 8½; fancy 9@10.

PEACHES—Choice 5; fancy	6@6½
Apples Evap	5¾@7
Pears	5½@8

RAISINS—1908 crop, f. o. b.: Clusters and Layers, 20-lb bxs—Imperial Clusters, 6-crown, $2; Dehesa Clusters, 5-crown, $1.75; Fancy Clusters, 4-crown, $1.40; London Layers, 3-crown, $1.15; do, 2-crown, $1.05. Seeded, 25-lb bxs—Fancy bulk per lb, 5¼c; Choice bulk, 5c. Loose Muscatels, 50-lb bxs—Standard, 4-crown, 4c; do, 3-crown, 3¼c; do, 2-crown, 2¾c; Seedless, 3½c. Seedless Sultanas—Unbleached, 4¼c. Thompson Seedless—Unbleached, 4¾c. Dried Grapes, 2½c.

Nuts.

Walnuts S S No 1 new crop	8@12½
Walnuts No 2	6
No 1 Standard	8½
No 2 Standard	4½@5
Almonds Nonp	11½
Almonds IXL	10½@11
Ne Plus Ultra	9½
Drakes	8½@9
Chestnuts, Cal	9½@14
Peanuts, Cal	5@6

Beans Dried.

Limas	3.85@4.00
Pink	2.40@2.60
Small white	4.50@4.75
Large white	3.60@3.80
Black eyes	2.80@3.30
Red Kidneys	3.75@4.00
Garvanzas	3.00@4.00
Garvanzas	2.75@3.00
Bayo	3.15@3.25
Horse beans	2.00@2.25

Hops.

Hops new crop	5@10

Honey.

White comb	12@14
Light Amber	10@11
Extracted W W	6½@7½
Extracted light amber	5½@6
Beeswax No 1 per lb	28@30
Beeswax No 2 per lb	23@25

Hay.

Somers & Co. say: Although railroad traffic has been tied up in many places, yet we do not believe that this will affect the receipts of hay in San Francisco for most of the supplies are at points where freight is being handled on schedule.

Alfalfa continues very firm and although the market may possibly be short for some little time owing to the fact that our principal supplies are now being brought from Nevada and Northern California points, yet we are of course in hopes that freight traffic will be resumed shortly and that therefore our market will be supplied with this article.

Choice wheat hay	21.00@23.50
Good wheat hay	19.00@21.00
Other grades same	17.00@18.00
Wheat and oat	16.00@21.50
Tame oat	16.00@21.00
Wild oat	15.00@17.00
Stock hay	12.00@14.00
Alfalfa	14.50@18.50
Straw per bale	50@85

Grains.

Wheat No 1	1.72½@1.77½
Barley	1.40@1.42½
Corn large yellow	1.80@1.85
Oats white	1.67½@1.75
Oats gray	1.65@1.72½
Rye new crop	1.45@1.50

Feed Stuff.

Bran per ton	29.00@30.00
Feed cornmeal per ton	37.00@38.00
Cracked corn per ton	38.00@39.00
Rolled barley per ton	27.50@30.00
Oil cake meal per ton	38.00@39.50
Cocoanut cake per ton	25.50@26.50
Middlings	33.50@36.00

Citrus Market

LOS ANGELES, Jan. 27, 1909.

The continual storms in the orange sections have caused a shortage of shipments so that the Eastern demand at present is very strong for the few which are going forward. No day now sees in an excess of 100 cars shipped out, while it is common at this season of the year for shipments to approach a total of 200 per day. No fancy prices are being received but a good, healthy tone prevails, which now promises to continue.

The lemon market is also satisfactory. Report says that vast quantities of foreigns are afloat and due to arrive in a short time. Prices for such as have been shipped have been very satisfactory to the shipper.

The Shipments.

Shipments of oranges from Southern California to date since November, 1, are 3328 cars, and of lemons 982.

NEW YORK, Jan. 22.—Five cars navels, one mixed car and one car lemons sold. Market is unchanged on both lemons and oranges. Weather clear and mild.

NAVELS—	Average.
Planet SS Fruit Exch	2.35

Cream Separators, all sizes, all prices. O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

Titus Ranch 2.70
El Toreador std San Marino GP Co 2.45
Standard Orange County 2.60
Kind Midas, c.e., Whitcomb Redlds 2.65
Brook 2.35
Aurora fy o. r., E. Peycke Co.....3.55

LEMONS— Average.
Senorita std B & S Riv F Co 1.85

ARIZONA LEMONS—
Cactus 2.60

ARIZONA NAVELS—
Cactus 2.50
Arizona jaffas 2.30

PHILADELPHIA, Jan. 22.—Three cars navels and one car lemons sold. Weather warmer. Market is lower. Nine cars on track. Twenty-one cars Florida oranges sold from $1.30 to $2.25. Market lower on Floridas.

NAVELS— Average.
Goddess SA Ft Ex Pomona 2.49
Braeside Riv Ft Ex 2.26
Pride of Cal do 2.24
Stag ACG Ft Ex Glondora 2.56
Pointer do 2.38

GRAPEFRUIT—
Stag ACG Ft Ex Glendora 1.63

LEMONS— Average.
Defender x c Atland Ft Co.....2.28
Buscada Atland Ft Co 2.08

ST. LOUIS, Jan. 22.—Weather cool. The market is strong on large sizes navels. The market on lemons is declining. Four cars sold. There are three cars navels and three cars lemons on track.

NAVELS— Average.
Tiger SB Ft Ex Colton 2.55
Floral do 2.25
Gem do 2.00
Rancho do 1.90
Lochinvar RH Ft Ex E Highlds...2.70
Belt do 2.55

LEMONS— Average.
Naralimo 2.55
Senorita std B & S Riv Ft Co.....2.40
Loma Limoneira Co 2.40
Bridal Veil o r Limoneira Co.....2.65
White Cross Limoneira Co 2.30

BOSTON, Jan. 21.—Twelve cars sold, twenty on track. Weather favorable. The market is very strong and higher.

NAVELS— Average.
Gold of Ophir Butte Co Palermo...2.60
Table Mtn do 2.35
Whittier st Ft Ex Whittier 2.45
La Mesa Riv Ft Ex 2.70
Golden Rule do 2.60
Crocus SB Ft Ex Yerkes Spur 2.90
Canna do 2.60
Cosmos do 2.55
Pine Cone do 2.90
Gold Buckle RH Ft Ex E Highlds.2.90
Standard std National O Co.....2.60

BUDDED—
Gold of Ophir Butte Co Thermalito 1.95
Gold of Ophir Bute Co Palermo ..1.90

LEMONS— Average.
Laurel QC Ft Ex Corona 3.25
Princess do 3.05
Pet SA Ft Ex San Dimas 3.25
Medallion 2.80
Wreath Spence Ft Co 2.35
Marguerite x c Cal Citrus Union..2.35
Canyon 2.35

CLEVELAND, Jan. 22.—Weather bureau predicts rain. The market is firm on good stock. Three cars sold, six on track. One car of Florida oranges sold from $1.85 to $2.15, average $2.00. The market is unchanged on Floridas. There are two cars Florida oranges on track.

NAVELS— Average.
Uncle Sam Riv Ft Ex Pachappa S 2.60
Fiesta do 2.50
Pond Lily do 2.40
Tiger SB Ft Ex Colton 2.65

LEMONS— Average.
Highlander x f Highland FG Assn 2.70
Hereshow 2.25

Pittsburg, Jan. 22.—One car sold, seven on track. Prices low on account of the quality of the fruit offered. Three cars Florida oranges sold, $1.85 average. Market steady on Floridas. Weather warm.

NAVELS— Average.
Planet SS Ft Ex Orange.....1.70
Sunset do 1.60

BOSTON, Jan. 25.—Sixteen cars sold. Nineteen cars on track. Weather cloudy. The market remains unchanged.

NAVELS— Average.
Orchard o r National Orange Co..3.05
Standard Sd National Orange Co..2.65
Rose e fy Redlands OG Assn 2.90
Banner o r P & McKevitt 2.25
Moore Estate e ch Stewart Ft Co..2.20
Peerless e ch Cal Citrus Union....1.85
Coronet fy do 1.90
Pine Cone SBF Ex Highlands....2.50
Mt Whitney TCC Ft Ex E Highlds 2.35
Gold Buckle RH Ft Ex E Highlds 2.90
La Mesa Riverside Ft Ex Riv....2.65
Golden Rule Riv Ft Ex Riv.....2.55
Crocus SB Ft Ex Yerkes Spur....2.75
Crocus Imp do 3.80
Canna Imp do 2.65

BUDDED SEEDLINGS—
Gold of Ophir Butte Co CFA Pal'mo 1.85

LEMONS— Average.
Old America 2.35
Rey ST Ft Ex Fernando 3.10
Tunnel do 2.80
Queen Bee QC Ft Ex Corona.....3.15
Royal do 2.85

NEW YORK, Jan. 25.—Seventeen cars navels, one car navelencias, two cars lemons and one car Arizona navels sold. The market is very firm on good quality navels, but somewhat lower on poor quality stock. Higher on high grade lemons. Clear, mild weather.

NAVELS— Average.
Planet SS Ft Ex Orange 2.10
Red and Blue Label TCCF Ex....2.30
Iris DM Ft Ex Duarte 2.90
Pine Cone SB Ft Ex Highlands....2.85
Arrowhead do 2.60
Lochinvar RH Ft Ex E Highlands.2.80

NAVELENCIAS—
Victoria AH Ft Ex Casa Blanca ..2.95
Lincoln do 2.75

CINCINNATI, Jan. 25.—Weather cool. Market is weak. One car navels and four cars Florida oranges sold. Florida Brights sold $1.45 to $2.10. Russets, $1.65 to $2.15.

NAVELS— Average.
Floral SB Ft Ex Colton.....2.00
Rancho do 1.85
Gem do 1.60

PITTSBURG, Jan. 25.—Six cars sold, eight cars on track. The market is advancing on navels; very strong on lemons. Seven cars of Florida oranges sold, average $1.70. The Florida stock was only fair quality. Market is steady on Floridas.

NAVELS— Average.
Auroro fy o r E Peycke Co.....2.40
Whittier ST Ft Ex Whittier 2.45
Stag A-C-G Ft Ex Azusa 2.75
Pointer do 2.85
Golden Rule Riverside Ft Ex Ric 2.50

TANGERINES (Halves)—
Stag A-C-G Ft Ex Azusa 85

LEMONS— Average.
Big R SB Ft Ex Rialto Jumbos ..2.90
Yacht, do 2.60
Big R SB Ft Ex Rialto 2.95
Yacht do 2.85
Circus Sparr Ft Co 3.00
Maine do 2.80

ST. LOUIS, Jan. 25.—It is raining. The market is firm on good fruit. Six cars California and four cars Florida citrus fruit sold. Eight cars on track.

NAVELS— Average.
Forgetmenot TCC Ft Ex Porterv'l 1.90
Tulip do 1.75
Oak Leaf do 1.80
Full Value do 1.75
Royal Knight RH Ft Ex Redlands 2.45
Ben Hur do 2.35
Newsboy do 2.20
Redlands Oranges do 1.95
Volunteer SA Ft Ex N Pomona ..2.55
Greyhound SA Ft Ex N Pomona .2.40
Golden Flower, Redlands GOA....2.40
Golden Gate do 2.30

LEMONS— Average.
Golf ST Ft Ex Arroyo Park 2.60
Bonnie do 2.30
Swan RH Ft Ex Redlands 2.55
Newsboy do 2.30

SPRING FLOWERING BULBS.

(Continued from Page 89.)

coolest part of the grounds, and in some location where they will be shaded for at least part of the day. I think that an angle on the northwest corner of a building, not close to the building, where they will be shaded until about one p.m. is the best of all locations. The partial shade of trees is as good, but in that case care must be taken that the trees do not rob the bulb beds. Splendid flowers can be grown in a southerly exposure by giving artificial shade. This in the shape of lath screens, or even tall brush stuck by the beds. Larger and better developed bulbs will be produced in this way than by the other, but the difference does not justify the trouble in other than commercial places.

BERRY PLANTS.

FOR SALE—MILLIONS OF STRAWBERRY plants, all the standard varieties; many varieties blackberry, raspberry, Logan, Himalaya, Mammoth, dewberries and fruit trees. Special prices. Muscat and Flaming Tokay cuttings (disinfected,) $3 per thousand. Write us your wants. TRIBBLE BROS., Elk Grove, Cal.

FOR SALE — BERRY PLANTS; LOGANS, Giant Himalaya, Mammoth and Lucretia dewberries. Would exchange for rooted Tokay. A. P. HENNING, box 225, Cottonwood, Shasta Co., Cal.

FOR SALE—LOGAN, MAMMOTH, PHENOMenal, Himalaya, Blackberry, Dewberry; strong plants, $10.00 per thousand. Strawberries, $3.00 per thousand. GRIDLEY COLONY NURSERY, Gridlev, Cal.

FOR SALE — STRAWBERRY PLANTS, Brandywine, Excelsior and Arizona, $3 per thousand. Mammoth and Himalaya Giant Blackberry, $3 per hundred. FRED L. WING, Upland, Cal.

CATTLE WANTED.

WANTED—FROM ONE COW TO TWO hundred good first class grade of thoroughbred Jerseys. GEO. A. SMITH, Corcoran, Cal.

BEES.

FOR SALE—75 STANDS BEES, GOOD condition. Honey tanks, extractor and empty hives. Address NICHOLAS MARTIN, La Canada.

DOGS.

FULL COLLARED SCOTCH COLLIE puppies. Pedigrees, prices and descriptions on application. DR. ELIZABETH CUMMINGS. Oxnard. Cal.

CABBAGE PLANTS.

FOR SALE—100,000 FINE EARLY Winningstadt cabbage plants, ready for transplanting. Phone, Boyle 38, H. G. ADAMS, 2703 East Fourth St., Los Angeles, Cal.

ASPARAGUS.

WANTED—TO BUY EARLY ASPARAgus from growers **direct.** MRS. M. VETTER, Santa Maria, Cal.

VINES WANTED.

WANTED—A FEW THOUSAND MUSCat, Thompson Seedless, and Malaga well rooted vines. IMPERIAL VALLEY NURSERIES, El Centro, Cal.

Classified Liner Columns

Rates 1½ cents per word per issue. No ad. accepted for less than 25 cents. Our classified columns are the clearing house for the readers of the Cultivator. Here you can insert an ad. for the small sum of 1½ cents per word per issue, and be sure that it will be read by thousands.

FARM LANDS FOR SALE.

IMPERIAL VALLEY—DO YOU WANT to help us pioneer the **Weston Townsite** and get paid for it by getting in on the ground floor on the first 10 acre tracts, "without money and without price?"

We can offer a few 10 acre lots surrounding the Townsite at $1000.00 each, to be paid for in work on adjacent tracts or on a share basis of planting to oranges or grape fruit or to vines and deciduous trees. WESTON is situated in the centre of the famous No. 8 Water District and has more than 50,000 acres of the finest garden soil in the Valley tributary to it.

Remember the history of the townsites of Brawley, Imperial, El Centro, Holtville and Calexico and profit while you may.

If you are free to go there we can help you and you can help us. For particulars apply to IMPERIAL INVESTMENT CO., 315 H. W. Hellman Bldg., Los Angeles, Cal.

FOR SALE—160 ACRES OF RICH virgin sandy loam land, 9 miles S. W. of Mendota, Fresno Co. Cleared and leveled. Unlimited pumping water. Land $20; with water $30. Free from alkali, hardpan and washes. This is your chance to get land with water worth $150 for one-fifth that price. J. E. FARNHAM, owner, Hollywood, Cal.

FOR SALE—ON EASY TERMS, A highly improved, very productive, well watered and well situated 40 acre ranch. B. F. YOUNG, Huntington Beach, Cal.

I make a specialty of orange and alfalfa ranches, and exchanges. 826 MAIN St., ROOM 9, Riverside, Cal.. N. R. BELL.

FOR SALE—LAND WORTH $150 PER acre with water at $40 while it lasts. Rich virgin sandy loam soil free from alkali, hardpan and washes. Leveled and cleared for irrigation. 11 miles south of Mendota in Fresno Co. This is your chance; write J. E. FARNHAM, owner, Hollywood, Cal.

POULTRY

FOR SALE—WHITE WYANDOTTES, Hayes "Bred to Lay" strain. Eggs for setting, $1.50 and $2 per 15, $6 to $8 per hundred. Hens, $1.50 to $3; cocks, $3 to $5; trios, $6 to $10. Discount of 25 per cent. on hens and pullets in lots of 50 or more. Write for particulars. F. E. JUDSON, Carson Heights Ranch, San Pasqual Valley, Escondido, Cal.

FOR SALE—RHODE ISLAND RED eggs for hatching. $1.00 per setting of 13. Rhode Island Red Cockerel 10 months old $2.50. A. T. KENYON, Charter Oak and 543 S. Broadway, Los Angeles, Cal.

HOUDAN EGGS, FINEST WINTER laying strain. Setting of 15, $2.00; 30, $3.75. Square deal assured. Order now. MRS. R. HEGI, Box 272, Dixon, Cal.

SINGLE-COMB BROWN LEGHORNS—EGGS $1.50 and $2.50 per setting, $5 and $7 per 100; cockerels, $2 and up, from Bright hens. MRS. C. H. VARY, Pomona, Cal.

WHITE ROCKS—SNOW WHITE, prize winning, bred to lay. Eggs $1.50 and $2.00 per sitting. W. E. B. SMITH, 820 Elm Ave., So. Pasadena, Cal. Phone Sunset, Main 2866.

CHAS. E. SMITH—BREEDER OF BARRED Rocks exclusively. Winners of the blue wherever shown. Eggs $3.00 per 15, stock for sale. GARDENA, Cal.

LIGHT BRAHMA, FIRST PEN, FIRST Cockerel at 20th Annual L. A. County Poultry Assn. show. Cockerels from same mating $5.00 each. H. J. SHOW, R. 1, Santa Barbara, Cal.

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CHOICE GRAPE ROOTS AND CUTTINGS. Thompson Seedless, Flame Tokay, Cornichon, Muscat and Red Emperor. Cuttings, price per 100, 50 cents; per 1000, $3.50. Price for rooted vines, Thompson Seedless, Flame Tokay, Cornichon, Red Emperor, Rose Peru, $3.00 per 100 and $20.00 per 1000. J. C. SMITH, Burbank, Cal.

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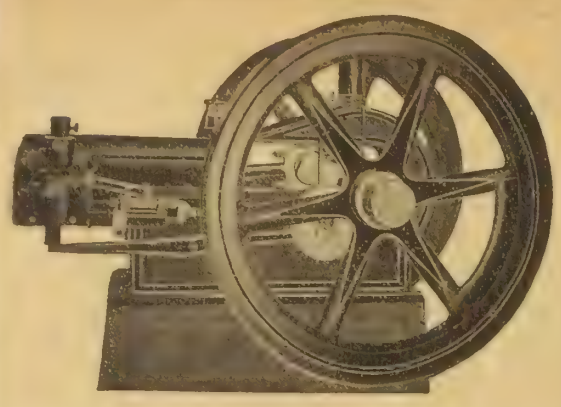
PRIZE TAKER ONION SEED—A limited quantity of this seed at $1.25 per pound. Satisfaction guaranteed. Address JOHN FRATER, Greenfield, Monterey Co., Cal.



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A reliable pump built by a responsible Company.
Being built with machine cut gearing and adjustable bearings, they run as smooth and noiseless as a watch.
You cannot afford to buy a Pump before investigating ours.
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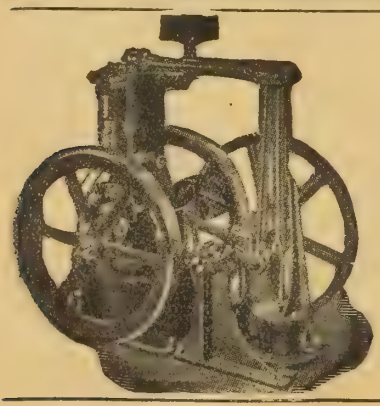

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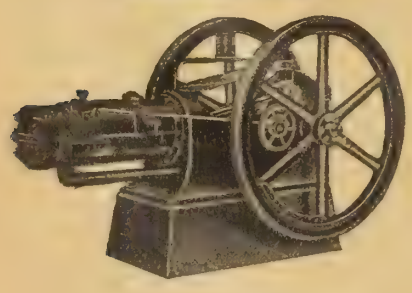

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Latest Deep Well Turbine Pump

Guaranteed to deliver from 100 gallons per minute upwards, depending on the diameter and capacity of well, from a depth of 50 to 300 feet below the surface. Can be either belt driven or direct connected to electric motor as occasion requires.

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A deep well pump that has no valves or plungers to wear or get out of order, no gears, consequently no noise or breaking of teeth.

Compact, durable, always primed and ready to operate, constant flow, hence increased capacity of well.

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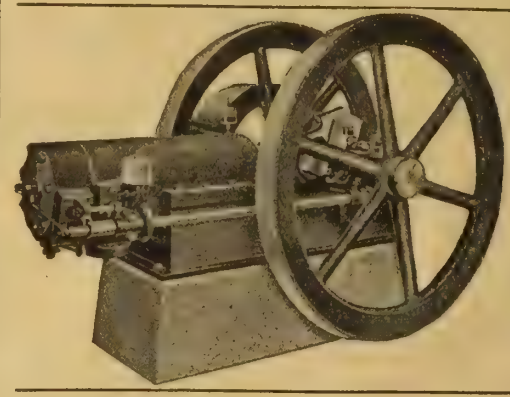

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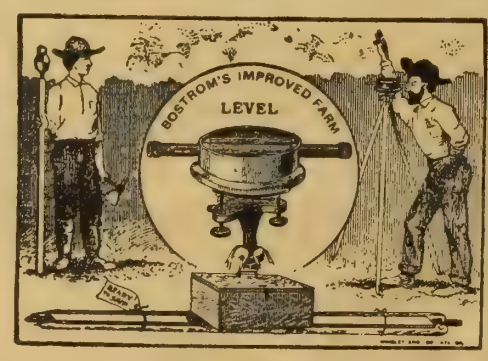

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Used for irrigation and drainage work. Cheapest and best level yet invented for farm use. Has the latest patented improvements in simplicity and usefulness. Can be operated by any one. Price including telescope tripod and target rod $15.00.

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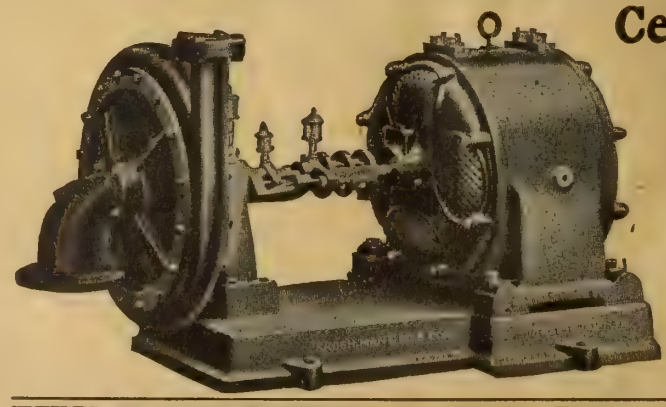

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For high or low heads

Direct Connected or Belt Driven

Highest obtainable efficiency

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Send for New Catalogue No. 50 just issued.

Crimson Winter Rhubarb

$1.50 Per Dozen. $6.00 Per Hundred. $40.00 Per Thousand.
Superlative and other berry plants. Pedigreed stock only.
J. B. WAGNER - ***The Rhubarb and Berry Specialist***
Pasadena, California

California Cultivator

Published Weekly — One Dollar a Year

Los Angeles — February 4, 1909 — San Francisco

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The Sign of Quality

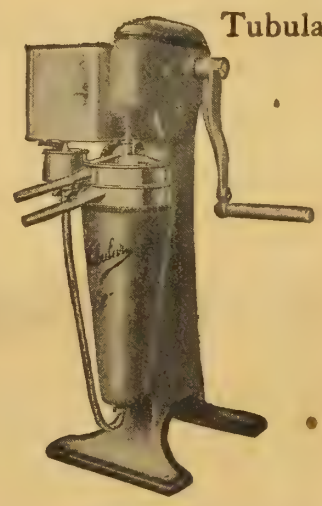
TRADE Sharples MARK

29 Yrs

The Sign of Satisfaction

QUALITY has made the Sharples Separator Works the largest factory of its kind in the world. Quality has made the sale of Tubular cream separators greater than that of any other separator. Quality will be found in every part of the 1909 Tubular "A" separators and will place Tubular cream Separators still farther in the lead.

We wish ebery dairyman who reads this could come to our factory and see for himself the difference between Tubular "A" separators and other separators, thousands of which come to us each year in exchange. We would like to demonstrate to every dairyman the many points of superiority in Tubular "A" separators, a few of which we mention below:—



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Freedom from complicated bowl parts,
And twenty other especially desirable features.

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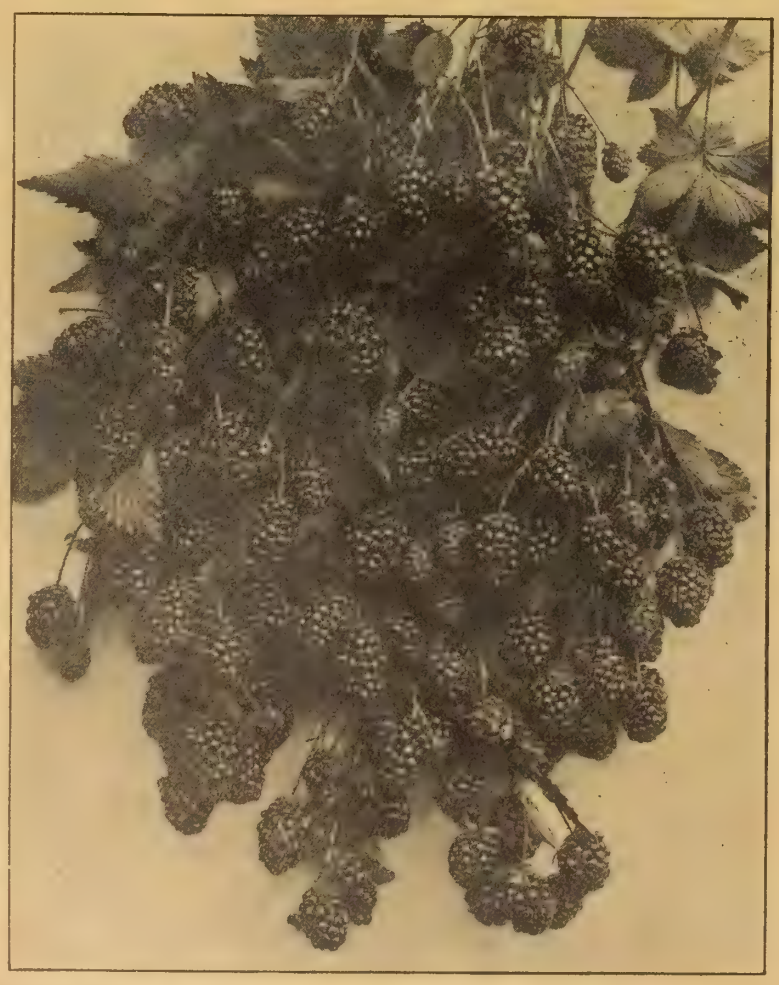

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500,000 Berry Plants Ready to Ship

San Martin, Cal., Dec. 16, 1908.

A. Mitting, Santa Cruz, Cal.

Dear Sir :

Enclosed find check for $240.00. Please ship me the following Berry Plants :

750 Texas Exergreen Blackberry
1200 Superlative Raspberries
2000 Burbank's Phenomenal
400 Mammoth Blackberries

Yours truly,
C. B. Chrysler.

San Martin, Cal., Jan. 12, 1909.

A. Mitting, Santa Cruz, Cal.

Dear Sir :

The Berry Plants arrived in A No. 1 shape and planted. I wish to thank you very much.

Yours truly,
C. B. Chrysler.

A. MITTING

Santa Cruz, California

California Cultivator

Vol. XXXII—No. 5 Los Angeles, California, Thursday, February 4, 1909 Subscription $1 a Year

Amygdalina, Regnans in California

An Account of the Tallest of the Eucalypts. Written Especially for the California Cultivator By J. Blackburn, of Maryborough, Victoria, Australia

THIS species has attained universal prominence through the writings of the late Baron von Mueller and other scientific men, who claim for it a height not surpassed by any tree in the world. Recorded measurements are given in the Baron's "Eucalyptographia" and "Select Plants for Industrial Culture," taken by such men as Professor Wilson, Colonel Ellery, A. W. Howitt, the Reverend I. Ewing, Mr. D. Boyle, Mr. Rollo, Mr. Walker, and Mr. G. Robinson, the last named sending in a record of 471 feet for a tree measured by him at the foot of Mount Baw Baw in Gippsland. The others assert that they had met with trees varying in height from 400 to 540 feet. It would be out of place for the writer of this article to make any comments upon statements evidently made in good faith, but I would like to bring this fact before my readers that I never measured a tree of Eucalyptus Amygdalina more than 320 feet high or heard of an authentic measurement exceeding 380 feet and I have spent many years in the forests where this eucalypt flourishes.

Still, although our tall monarchs of the woods may have to be shortened, I do not think, (given favorable conditions) that any tree in the world surpasses it in celerity of growth or excels it in quick production of useful marketable timber. Eucalyptus Amygdalina regnans flourishes in sheltered valleys and on table lands in a deep, porous, granitic soil at an altitude of from 1000 to 3000 feet above sea level, where the annual rainfall ranges from 40 to 50 inches.

There are large forests of this tree now being operated upon by sawmillers and splitters in the valley of the river Yarra near Warburton, Victoria, that have sprung up since "Black Thursday" in the year 1851, when a terrific fire swept over nearly all the colony of Victoria, killing the primeval trees largely. The yield of timber, sawn, varies from 40,000 to 100,000 feet super per acre, exclusive of mining laths and palings. A correspondent of mine, one of our State Forest staff, assures me that he has seen 8,000 six feet palings taken from one tree and has measured another containing in the log 15,000 feet super of timber, sound to the heart. Some of the old trees girth 80 to 90 feet at five feet from the ground, but of course they have taken centuries to attain such colossal proportions. This eucalypt is a profuse seeder and when an old forest is cleared away or used up, a young one quickly springs up to take its place. No need for replanting. It is rather subject to the attacks of white ants when growing in deep, dark, wet gullies and owing to its thin bark is easily killed by severe forest fires. It is one of the hardiest of its cogeners and is stated to have braved in certain localities unusually cold winters in Britain. On poor, shallow schistose soils, the growth of this species is much retarded. A deep soil, therefore, is essential for its quick development.

The wood is useful for housebuilding and carpenter work. In drying it does not twist, and most trees split better into palings and mining laths than our stringybarks do. The timber is light enough to float in water, a rare quality with eucalypts generally. It is well adapted for staves, shingles, palings, rails, etc., and is also drawn into use for shipbuilding. It is not lasting underground.

The leaves are rich in essential oil which was first distilled and brought extensively into commercial use by the late Mr. I. Bosisto of Melbourne many years ago.

In conclusion, I would like very much if the readers of the Cultivator could see the Mountain Ash in its native home, generally a sheltered ravine with a clear, pellucid stream running through it. Such a wealth of vegetation adorning it! Beautiful sassafras and umbrageous beech, festooned with mosses and Lycopodium, intermingle with the tender, silvery foliage of the wattle and the darker hued blackwood, the palm like tree ferns, Dicksonia antarctica and alsophyla australis, etc., rearing their frond crowned heads to a height of 50 feet, and far above all, the tall, straight, white trunks of the Mountain Ash, towering aloft hundreds of feet toward the sky like the pillars and arches of a vast cathedral, present a picture never to be forgotten. You feel that you are in a sanctuary, not made with hands, where

As to shame the temples deck't
By skill of earthly architect,
Nature herself it seems would

* * *

A minster to her Maker's praise.

In addition to the above description sent us by Mr. Blackburn, we may be permitted to quote from McClatchie's "Eucalypts Cultivated in the United States." The first paragraph given however while from that book, is there quoted from Baron von Mueller's "Eucalyptographia."

"This Eucalyptus is one of the most remarkable and important of all the plants in the whole creation. Viewed in its marvellous height when standing forth in its fullest development on the slopes, or within glens of mountain forests, it represents probably the tallest of all the trees of the globe; considered as a hard-wood tree of celerity in growth, it ranks among the very foremost; and contemplated in respect to the yield of volatile oil from its copious foliage, it is unsurpassed and perhaps not equaled by any other tree in the whole world."

Mr. McClatchie then says: "While claiming that this Eucalyptus is the tallest tree in the world, Baron von Mueller admits that in respect to height combined with diameter, 'it must cede the palm of superiority perhaps' to the Sequoias of California. In most other countries outside of Australia, this Eucalypt has not attained extraordinary heights; nor does its rate of growth prophesy great size. In the Southwest many other species grow more rapidly and have attained greater height since their introduction.

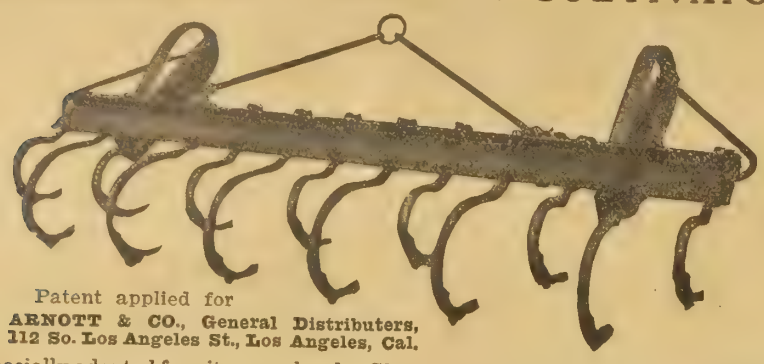
"The tree is a very variable one, the size and habit depending upon the soil and the climatic environment. The great heights mentioned are attained in cool, moist ravines. Baron von Mueller says that in more open country it is of much lower stature, in some cases being comparatively a dwarf. It is the latter form that is known as 'Peppermint Tree.' In the Southwest it is exceedingly variable, running into forms that are evidently worthy of varietal names. The bark is also quite variable, being either rough and persistent or flaking off and leaving a smooth, yellowish surface. The trunk is fairly erect, but the small branches usually droop willow fashion. The leaves are of medium size, varying from very narrow to lance shaped. They are usually more or less curved. The narrow leaves are quite thick, the wider ones thinner. They are equally green on the two sides, and commonly have a distinct odor of peppermint when crushed. The flowers are small, in compact clusters of 8 to 15. The seed cases are small and nearly top-shaped.

(Continued on Page 142.)

EUCALYPTUS AMYGDALINA, REGNANS

Foliage and "fruit" of the tallest of the Eucalypts. In Australia this tree has grown to heights of nearly 400 feet has done well near the coast in California. The wood is softer than many of the other varieties and fine for finishing.

WILLIAMS' GOOSE-NECK CULTIVATOR



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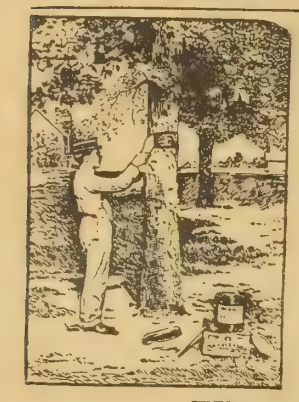

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A Sticky Preparation Applied Directly to the Bark of the Trees

Will not injure trees. A band 5 inches wide and 1-16-inch thick cannot be crossed by any climbing insect pest. Remains sticky five to ten times as long as any other known substance. You can test it at slight expense, as no apparatus is required. Used by the carload in New England against the Gypsy and Brown-Tail Moths. In California it preserves prune orchards from the Canker Worm. Wherever the Gypsy or Brown-tail Moths, Tussock Moths, Fall or Spring Canker Worm or Web Worm appear TREE TANGLEFOOT is of great value, and should be used when the caterpillars begin to crawl while they are very young.

Price 25c per lb. Liberal discount on quantities. The only safe and effective banding preparation. Send for testimonials

THE O. & W. THUM COMPANY

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Save Time—With the Brewster Picking Sack—Save Fruit

A new method sack—invented and perfected by lifelong growers. Eminent orchardists pronounce it perfect. Those who have tried it say they would not be without it. Actual tests show that a man can pick twenty-five per cent more fruit with it and with greater ease.

Sack forms semi-circle about picker's body—is supported by straps over both shoulders and held tight by belt around body. The picker can thus work with ease either on ground or ladder. When full, it does not extend below the hips.

A great feature of the Brewster Sack is the patent gate (see illustration) WHICH PRACTICALLY ELIMINATES BRUISING. Simply unfasten a hook—the gate drops—and the fruit can be quickly but very gently poured out.

The sack holds as much fruit as the old style sack.

Made in two grades.

Regular picking sack grade, sent express prepaid for $1.50.

Special extra quality—that will outlast two ordinary picking sacks—express prepaid $1.75.

Sierra Madre Sack Co., Sierra Madre, Cal.

We want reliable men in every locality to demonstrate this sack and act as our agents.

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100 William Street, New York
Works: Perth Amboy, N. J.

CYANIDE guaranteed 98-99% for generating HYDROCYANIC ACID GAS

The only positive eradicator of the SAN JOSE SCALE, RED and BLACK SCALE and other insect pests

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Established 1889

Grower and Dealer in Citrus and Deciduous Trees of all Standard Varieties

Soft Shell Walnut Trees, 1, 2, and 3 years old. Grafted Placentia on Native Black Walnut Root and Soft Shell Root. Street and Ornamental Trees, Palms, Dracænas, Blue, Red and Sugar Gums (large stock.) Write for prices.

Sales Yard—Corner Sixth and Main
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Irrigating Hose, all sizes. Prices and Samples quoted upon application. Write your wants
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Phones—Home, F 4871; S. S., Main 3500
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ORANGE SEED BED TREES

Large seedlings for orchard planting. Eureka Lemons, Pomelos. A fine lot of Phoenix Canariensis and Washingtonia Robusta palms, Camphor Trees, Acacias, Roses, etc.

Southland Nurseries, F. H. Disbrow, Prop.
Phones: Main 949; Home 2520
PASADENA, CAL.

With the Citrus Growers

A FEW INSECT FRIENDS.

IN the constant warfare against insect pests the agriculturist often overlooks the fact that there are a great many insects that are in no sense his enemies, but on the other hand may be numbered among his best friends.

There are many ways in which insects are beneficial. Some are of commercial importance; others are valuable in that they act as agents in the pollination of blossoms, some of which, it is said, cannot be pollinated except by insects. Still others are scavengers and perform a valuable service by destroying decayed matter of various kinds. The forms that the entomologist recognizes as pre-eminently beneficial are those that destroy injurious insects, either as parasites or as predaceous enemies; the former living within the body of their host, the latter destroying from without.

In this article it will suffice to mention three families of predaceous insects that are invaluable because of their habits of feeding upon plant lice, viz.: "Coccinellidae, or lady bird beetles; Syrphidae, or syrphus flies; Chrysophidae, or lace-winged flies. Especially are these insects friends of the orchardist, and he should familiarize himself with the different stages in the life history of each. A little study and observation, along with the help of an entomologist, is all that is necessary in order that he may be able to do so.

The little cluster of a dozen or more bright yellow eggs found on trees infested with aphids-is a familiar sight to every orchardist; yet how many there are who do not know that from this little mass of eggs will hatch the ravenous larvae of some species of lady-bird beetle, which are especially fond of plant lice for their food. The eggs of the lace-winged flies have attracted the attention of nearly every one, because of being attached to some part of a tree by means of a slender stalk or pedicel; yet how many are not aware that from these eggs will hatch extremely ravenous little creatures, whose appetite for plant lice seems all out of proportion to the size of their tiny stomachs. The eggs of the syrphus flies are not so familiar, but a careful search will reveal their presence as small, whitish, oblong eggs, deposited singly and almost invariably within the immediate vicinity of a colony of aphids. From these eggs hatch little larvae, which are also very fond of plant lice.

The third, or pupal stage in the life cycle of these insects, should be recognized by all. The lady-beetles, when ready to pupate prior to their transformation to the adult stage attach themselves to some part of a tree or plant by the tail, and there hang in a dormant condition until transformation to the adult stage takes place. The larvae of the lace-winged flies roll themselves up into a ball and make a little white, spherical egg like a cocoon, within which transformation to the adult stage takes place. These cocoons may be found on leaves, under loose bark, etc., and should never be destroyed. The syruphus flies make a cocoon about one-fourth of an inch long, brownish in color, and tapering toward one end. They may often be found beneath the surface of the ground at the crown of a tree.

Nature tries hard to preserve a balance whereby the injurious forms of insects will be kept in check by their enemies so that plant life may not be too great a sufferer. Artificial conditions brought about by man have tended to destroy this balance so that pests are inevitable. Too much stress, however, cannot be laid upon the importance of knowing the beneficial as well as the injurious forms, so that the former may receive protection, while the latter are destroyed.—Geo. P. Weldon, Colorado Agricultural College.

GUMMING OF NURSERY TREES.

It is quite a common occurrence for young citrus trees to be affected with a form of gum disease either in the nursery or immediately after planting in the orchard. This trouble consists in a breaking out of gum at different points on the tree, which gum may be easily seen to originate from beneath the bark, breaking out through ruptures to the surface. If the gumming occurs soon after the trees have been pruned or cut in any way it usually appears at the point where the cuts have been made. Gumming very frequently takes place at the point where the cut in the bark is made for budding, and in some seasons a considerable loss of buds is experienced in this way, both in the nursery and in older trees which are being top-worked. This takes place particularly in seasons of abundant rainfall in the spring. Other cases occur with young trees where the gum appears beneath the forks and crotches, at the junction between one growth and another, or at any point where the flow of sap is somewhat interfered with. This trouble almost always occurs under the conditions just mentioned as to rainfall, or where the trees have been heavily irrigated and the water allowed to stand close about them, on trees planted in very heavy soil and often where the trees are planted too deeply with the bud union covered to some depth. The whole matter of gumming of young trees is indeed quite an obvious case of cause and effect, illustrating the relation between citrus gumming and an excess of water, depth of planting or mechanical injury. A large number of trees show more or less gumming during the first year in the orchard, but usually without serious consequences if they are properly attended to as to depth of planting and moisture or drainage conditions, unless they have been too badly affected to recover. Some trees which were affected in the nursery may continue to gum in the orchard, even under good conditions. If well taken care of they will usually recover.

Control of Gum Disease in Young Trees.

In the nursery gum disease is almost always caused by too much water close about the trees. When due to rainfall this can not always be avoided, but the choice of location for the nursery should be one of good drainage and not too heavy soil. In irrigation the water should not be allowed to flood the trees. If the trees become affected in the nursery they should be kept particularly well cultivated so that there is no packing

of the soil about them, the soil should be kept from burying the trees above the proper depth, and particular pains must be taken to prevent water from standing about them.

When young trees in the orchard show gumming, the same treatment should be given and the same precautions exercised. In case the trees gum when everything seems all right in these respects they may be still showing the effects of disease contracted in the nursery, and recover of themselves, without any treatment. If a considerable amount of gumming occurs on the trunk of the young tree it is advisable to relieve this condition somewhat by slitting the bark in a few places, as previously described. In young trees it is not advisable to strip off the whole bark at the gummed places, as some of it is still alive and might recover. It is better to plant a new tree than to start with one having a large amount of bark removed.

FOOT-ROT.

The true foot-rot, as described in Florida and many foreign countries, is not of common occurrence in California, where the ordinary forms of gum disease are evidently of a somewhat different nature. The latter particularly do not show a decay of the roots, a rotting of the bark or any effect whatever below the surface of the ground. The Florida disease is decidedly different in this respect. A few cases of true foot-rot have been found in this State, and these agree perfectly with the conditions described elsewhere. In some instances the roots were badly decayed from the surface of the ground downward, even before the top of the trees showed a very serious condition. The decay starts in the bark, which becomes soft and rotten, spreading all over the main roots until finally the tree dies. There is no gumming on the sides of the trunk as in the disease which we have described as gummosis. The odor of the affected bark is disagreeable and quite characteristic.

In the cases of foot-rot found in this State the affected trees were invariably growing under conditions of extremely poor drainage and very wet, heavy soil about the roots. As the same condition is said to exist in other countries where this disease prevails, it would appear to bear considerable relation to the other forms of gum disease described. From the accounts of this disease in many countries it would appear that it has broken out in an epidemic form, spreading rapidly through the citrus districts and causing widespread destruction of groves on all kinds of soil. For this reason it has sometimes been thought to be caused by an active parasite rather than to be simply the result of unfavorable conditions. No such parasite has been identified, however, as the cause of the disease by the many investigators who have studied it, and the conclusion is quite general that its relation to soil and moisture conditions is the most important consideration in regard to its origin. Certainly in California the cause of this trouble seems to be very plainly an extremely heavy, wet condition of the soil, and the disease has shown no evidence of spreading by infection.

Control of Foot-rot.—The control of foot-rot, as it occurs in this State, is obviously a matter of improvement in drainage conditions. Most of what has been said in regard to gummosis applies equally well here. Affected trees may be treated to some extent by the methods described.—Prof. R. E. Smith in Bulletin No. 200.

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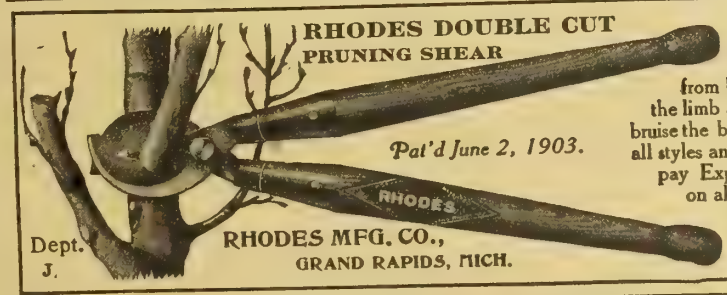

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SOIL ANALYSIS.

The chemist can take any sample of soil, analyze it, and tell precisely all the elements and the amount of each that it contains. From this fact many farmers think that if they could only have their soil analyzed, they would know precisely what elements of plant food are deficient and know just what fertilizer to apply. Few agricultural chemists claim to be able to accomplish much in this way. Their methods enable them to get every atom of plant food out of the soil but much of this is unavailable to plants, is so locked up that they can't get at it. How much of it is in this condition even the chemist can not tell. But plants can tell and the way to learn is to ask them. With all the help the scientists can give us, the individual farmer must still solve his own problems. If unsatisfactory yields convince you that one of your fields is deficient in one or more elements of fertility, conduct a little experiment of your own. While there are more than a dozen elements that plants feed on, there are only three that are likely to be depleted. These are nitrogen, phosphoric acid, potash. Measure off an acre of the uniform soil 16 rods long by 10 rods wide. Cut this into five strips 16 rods long and two rods wide. On the first strip apply nitrogen, on the second phosphoric acid, on the third potash, on the fourth nitrogen and phosphoric acid, on the fifth nitrogen and potash. At harvest time note carefully difference in crop on different strips and compare with crop on each side of plots which were untreated. For sure conclusions, crops should be weighed. Many soils are acid and refuse to properly grow alfalfa and clover. Lime will correct this acidity. If you have trouble in getting stands of either of these crops, test soil in same way by use of lime.

The experiment stations of Ohio, Indiana and Illinois agree that many of our long tilled soils are deficient in phosphorous, and it is generally agreed that the growing of the legumes is the cheapest way to secure nitrogen.—The Epitomist.

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It is a wise plan to look over the farm machinery some spare day this winter to see what repairs are needed; then order them at once and put them on the machines needing them. If this is done, there will be no "rush" repair orders to send in just as the plow or binder season comes on next year.

The gasoline engine requires about one pint of gasoline for each horse-power per hour, or one gallon for each horse-power for eight hours running. Thus, a 2-horse-power engine will use about two gallons in eight hours. Figuring gasoline at 15 cents per gallon, this engine could be run eight hours for 30 cents' worth of gasoline.

The question is often asked: "Which is the best make of machine for this purpose?" The answer to this is, select one of a standard make that is known to be good, even if it costs a little more than something you cannot be sure about. Select the machine for which you can secure repairs in a short time. It is usually best to buy from your local implement dealer; he should be able to furnish the necessary repairs and will see to it that the machine works satisfactorily.

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Is more or less prevalent in every orange and lemon grove, i. e., trees that are unprofitable. How many such have you in your orchard? Would it not pay you to put paying trees in their stead?

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Should contain at least a few trees of the better varieties of oranges and lemons. For this purpose we have some exceptionally fine trees to offer, being grown as specimens. Possibly you would like to plant a few citrus trees about your home this season. If so, will you do us the favor to correspond with us about it?

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Possess all the merits of the Phillips Cling, without any of its faults. Fruit is large to very large. Almost perfectly round, skin golden yellow of very fine texture, firm and rich with excellent flavor and clear yellow to the pit, which is quite small.

The canning qualities of this peach have been fully determined by several years of actual trial.

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We will deliver to any point on the Pacific Coast, charges paid to destination, 100 Peach Trees of any one of the following varieties:

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By J. W. Mills

AS TO SULPHUR.

The practical dried fruit men of the country are unanimous in their opinion that it is necessary to use sulphur to prepare a sightly and good keeping article of food, in so far as peaches, apricots, pears and apples are concerned, and their opinion is based on years of actual experience and experiment. They deplore and discourage the excessive use of sulphur as they would the excesive use of anything that in excess produces bad results, and they are as honest and much more vitally interested in their position than the theoretical expert who, as is usual with the reformer, is in a measure trying to pass laws and bring about rules and regulations that will destroy a valuable industry, by criticising the methods without offering better ones as a substitute. I am sure that I am safe in saying that not one case of injury to health has ever been found from the use of properly cured sulphured fruit, and I am sure that the general health of the dried fruit consumers of the country will at least compare favorably with that of the non-consumers.

No one would welcome improved methods of curing dried fruits more than the grower and packer—I mean practical, economical methods—but up to the present time no such substitute for the present methods has been found. It is said to be true that the kinds of fruit above mentioned have been successfully cured without the use of sulphur; but while the methods, so far as I can learn, might do for laboratory experiment, and in that be successful, they are absolutely impracticable for handling the enormous dried fruit output of this country.

Dried fruit has come to stay, and is gaining firmer footing in the family every day. If the producers and merchants will see that only good, wholesome, well cured, well prepared fruit is sold, in a very short time the demand will exceed the supply.

Higher Standards.

The dried fruit business is getting on a firmer basis every year. We are coming to recognize standard qualities and gradings more and more. The business of packing and shipping is slowly working into the hands of comparatively few reliable houses, and they are doing much to establish uniform standards of quality and to eliminate that element whose methods are dishonest and unfair. Much ground for good has been gained in the last few years and the business is now on a firm, well-established footing. The only thing necessary now is to bring the packers and natural distributors together on a uniform, equitable basis.—Walter A. Frost in the Retailers' Journal.

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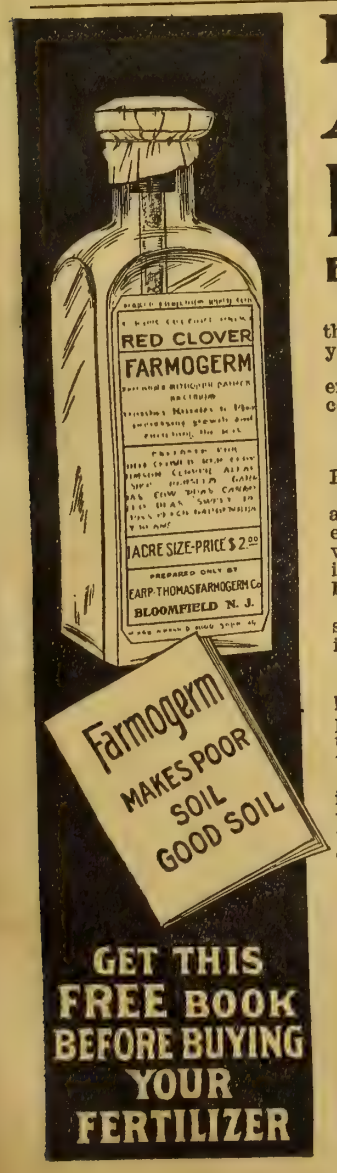

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You or anyone else may now inoculate a crop of alfalfa, any clovers, vetch, peas, beans or other legumes, knowing that the bacteria will feed that crop all the nitrates it can use.

And knowing also that the crop, being well supplied with its special bacteria, will store still more nitrates in the soil which will be available for several future crops of any kind, whether legume or not.

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Another reason is that there is no chance of the culture being spoiled, becoming impure or being wrongly used. It will come to you in a specially sealed bottle, and is

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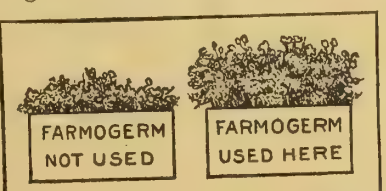
Understand, please, that Farmogerm is no experiment. It has been tested out and proved right in a practical way by practical farmers, as well as by scientific experts. Read the letters given here and read others that appear in our book and circulars.



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Send 10c. for a trial size, enough to make a box test in your home before planting time. The results you get in the box will make you decide to use it on every acre of legumes you plant. And you'll want to sow as much ground as possible to the inoculated legumes in order to enrich your soil for other crops next year and the next, whether the future crop be corn, wheat or other grain, cotton, tobacco, potatoes or any vegetable.

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I have tried Farmogerm on beans with most gratifying results, the inoculated beans making a much more vigorous growth, maturing earlier and producing a larger crop than those not inoculated. E. W. Underhill, Syosset, L. I.

I used Farmogerm on Alfalfa, * * * * * The stand is the finest I have ever seen in this country. J. W. Pamley, Ipswich, So. Dakota.

I planted Red Clover last year treated with Farmogerm, It was greatly benefitted. This year I planted corn on the same land and on adjoining land. Corn on the land where inoculated clover was grown was better and matured earlier. Geo. T. Powell, Ghent, N. Y., Pres., Agricultural Expert Assn.

I made various practical tests with Farmogerm on my farm with clover, beans, peas and alfalfa with most satisfactory results. J. N. Hoff, New York City, Industrial & Agricultural Chemists.

I sowed 1 acre of alfalfa inoculated with Farmogerm. It has come up evenly and I have a good stand. I have tried alfalfa before but never succeeded in getting such a stand as I have at the present time. W. S. Downs, Derby, Conn.

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(For 20 Years the Fertilizer Man)

THE PHYLLOXERA.

At the state horticultural meeting of Washington, the question arose with regard to the well-known grape pest "phylloxera." Those carrying on the discussion were interested chiefly in whether the pest existed on the vines of the grape, or exclusively on the roots. Mr. Dwight explained the pest as follows:

"The phylloxera lives only on the roots of the grape vine. After staying on the roots for a certain period of time, it undergoes a nymph stage, and crawls out of the ground on the vine itself. It remains there a short time, and then is transformed into the winged form, and that winged form of the phylloxera is the one that scatters the disease through the vineyard. In the winged form it does no damage to the vine, but the danger is in its spreading the disease.

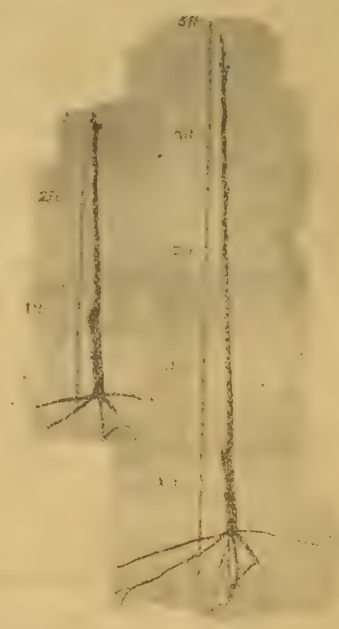
"After the winged form has lived for a few days, it lays some eggs on the leaves of the vine. The eggs hatch and the pest crawls downward on the roots. On the European varieties it is very seldom that you can see the phylloxera on the leaves. On the eastern varieties, such as the Concord or Catawba, it is easy to see the effect of the phylloxera on the leaves, but the pest itself is very minute. In the winged form it is a little, yellow fly, the body of which is hardly as big as a pin head. Unless one is very well acquainted with the insect it will not be seen. This is why the remark is often made that 'the root form is the only one known.'

"If grape growers of the state desire to avoid the presence of this serious pest, they should be careful in the matter of importing root vines. It is dangerous to import cuttings, unless great care is taken to avoid the presence on them of the phylloxera, because they can not be readily removed by disinfection. If you give an ordinary disinfection, the pest will not be injured. If you strengthen the disinfection sufficiently to kill the phylloxera, you will also kill the root vines."

H. M. Thampke at this point said that he had been told that the phylloxera pest would not live in sandy soil, and asked Prof. Dwight if this were true.

"The sand that is referred to in this respect is the absolutely pure ocean beach sand. The phylloxera grape pest will not thrive in this kind of sand. Sandy loam is no protection. In France after the nurserymen were forced to destroy their vineyards on account of the phylloxera pests they began planting along the seaside, and in this way discovered that the pest would not live in that kind of sand."—Spokesman Review.

Pruning the Fig
A Story Without Words



YOUNG TREE AS TAKEN FROM THE NURSERY.

SECOND YEAR AFTER PLANTING.

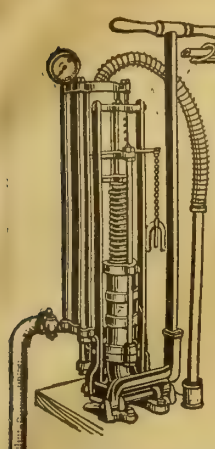
SAME TREE PROPERLY PRUNED FOR PLANTING.

FIRST YEAR AFTER PLANTING.

THIRD YEAR AFTER PLANTING.

FOOD VALUE OF DRIED FRUITS.

The value of dried fruit as a food product is very little understood by the one who should be most interested, the housewife; if it were, the consumption would increase so fast that the producing sections of the country would be severely taxed to supply the demand. It is equally as valuable to the rich as to those who are obliged to count the cost of living closely. High grade dried fruit properly prepared will furnish as appetizing a dainty as ever appears on the table. The early education of most housewives leads them to believe that dried fruit is only the com-



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Grafted trees grafted on Northern black and California soft-shell roots. Seedlings grown from selected nuts from grafted trees selected by myself. Place your orders early to avoid the rush and get the best trees. Price 15c and up. Took first premium on nuts and trees this year. Some lemon trees still unsold. Fine lot of Kadota Fig trees.

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monest of food and is only to be used as a makeshift. If they would take the trouble to inform themselves as to the great improvement that has been made in curing and preparing this article for the market, and the experiments that have been made to prepare from it a dish to tempt the palate, they would be more than surprised at the important and beneficial place dried fruit would assume in their daily menu.

The average wholesale and retail buyer is equally in the dark as to the methods of preparing dried fruit for the market, and of the difference in value of dried fruit from the various sections where it is produced, and, above all, the difference in value of properly and improperly prepared fruit. If he would so inform himself and govern himself by that information, insist upon having such dried fruit as is properly handled, delivered to him on his purchases, he would make new friends and customers, both for himself and for that too often despised article—dried fruit.

Prunes for Example.

Take the one item of prunes to show how small comparatively the consumption of dried fruit is in the country. An average crop of prunes in California, Oregon, Washington and Idaho, the prune producing states, is for the present acreage from 150 to 180 million pounds, or about 2¼ to 2½ pounds per year to each inhabitant. What is true of prunes is true of other dried fruits, and yet there is not one of the many items that go to furnish the table that will show better results from its free use in nutriment, pleasure of eating and economy.—Retailers Journal.

PRUNE THE FIG.

W. F. Toomey, the fig packer of this city, has a suggestion for the improvement of the status of the fig grower and his fruit. Mr. Toomey says that not one in a hundred of the growers in this valley prune their fig trees enough.

"What's the matter with the fig growers is that they do not prune enough. The suggestion ought to be made that they should do more of this in producing figs in this valley. Not one in a hundred of the growers prune anywhere near enough, and some of them actually do not prune their trees at all.

"Would pruning make any difference in the fruit? Certainly it would, and a big difference, too. The quality would be immensely improved. Fig trees need as much pruning as vines or any other plant, and should be pruned as conscientiously. This is certainly not done in the vast majority of cases.

"The result is inevitable. A great proportion of small goods, fit only for manufacturing, is produced. The percentage of one and two crown figs runs very high. The grower gets 1 and 1½ cents for his figs. Why? Because of the large proportion of the one and two crown goods which has to be put up in fifty pound boxes for $40 and $50, and has to be handled at a loss.

"The proportion of the small grades this season ran as high as 30 per cent or a little more, of the entire crop. This proportion should not be more than 5 per cent to 10 per cent, and in case the right sort of pruning were done might be 2 per cent or 3 per cent.

"And this would make a great difference in the fig situation, for everyone in the business."—Fresno Republican.

AS THEY GROW PEACHES IN SACRAMENTO COUNTY.

GOOD Seeds

Trees-Plants-Bulbs
NEW 1909 CATALOGUE
Just off the Press
116 pages, fully illustrated contains information of value to planters. General facts about seeds, plants, bulbs, flowers and trees; when and how to plant; the best garden tools, etc. Sent free on request. Write for copy.

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Big Leaf Jersey Kale
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5000 Grafted Walnuts

1 and 2 year old grafts
On California black and English walnut roots. The stock of the California black are all from northern grown seed from large trees.
Prices very reasonable.
Eucalyptus in variety.
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Because your order gets our personal attention, whether evergreen, or forest, ornamental or fruit tree; whether small fruit, shrub or rose bush, we guarantee it to be grown in Colorado; healthful, well-rooted, true to name. We give premiums to clubmakers. We pay freight on $10 orders. Agents wanted. Send for free catalog today to
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Eucalyptus rostrata, the Red Gum
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I shall be pleased to correspond with prospective buyers and give particulars as to prices on the seeds I am offering. Trial packets of any variety 15c each, 2 for 25c, or twelve for $1.25. Also young trees of many varieties for sale. Send for circular and cultural directions.

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Bees and Their Care

STATE BEE KEEPERS' ASSOCIATION.

The State Bee Keepers' Association of California held its annual session in Los Angeles last Friday and Saturday. Nearly all sections of Southern California were represented but very few were present from the North. This association is made up of delegates from all sections of the state, but as the state is so large each of the larger honey producing communities has local organizations of its own. These organizations affiliate with this state organization. At this meeting methods of bee culture were discussed at some length but the interest centered more largely around the suggested changes in the present bee inspection law. Some of the large communities felt that the present law was sufficient and should not be tampered with. But Prof. Ralph E. Benton of the State University, who was present, showed plainly the defects in the old law and pointed out the advantages in the proposed new law which had been endorsed by several of the local associations. After threshing out this matter in committee all Saturday forenoon it was presented to the convention in the afternoon and required practically that entire session to bring out its good points so as to secure the support of the convention. The officers for the coming year were elected as follows: B. G. Burdick, Redlands, president; A. B. Shaffner, Los Angeles, secretary and treasurer; George Emerson, Santa Ana; M. H. Mendelson, Ventura, and L. L. Andrews, Corona, executive committee, and the following vice-presidents: Delos Wood, Santa Barbara; L. E. Mercer, Ventura; E. B. Fisher, Burbank; G. F. Merriman, Twin Oaks; Pearle Glass, Corona; J. K. Williamson, San Bernardino; J. M. George, El Centro; H. J. Brown, Tulare; Muth Rasmepen, Inyo; N. A. Peyal, Oakland; F. E. Brown, Hanford; J. C. Pleasants, Orange; J. C. McCubbin, Fresno; B. B. Honaborn, Elk Grove; J. Peterson, San Luis Obispo; Vern Townsend, Monterey; A. J. Brown, Bakersfield; S. Iselenstein, Stockton.

National Live Stock Association

The sessions of the American National Live Stock Growers' Association which closed last week in Los Angeles were every one of them filled with most intense interest from opening to closing. There was no waiting for committees to report or for speakers to appear on the program. Large attendance was given to every session and showed movement and the action of a class of people who were anxious to do things and break away. In fact it was a gathering characteristic of the people who made up the convention. As a rule the discussions were harmonious though on the last day some little friction developed over the endorsement of the Forestry Service and especially of endorsement of Gifford Pinchot at the head of the service. The sheep men and especially all stock men from Colorado were very strong in opposition to the Forestry Service. Resolutions which were introduced endorsing the Service were fought section by section as well as in a general way. But the Colorado men proved good quitters when they saw they were beaten, and full endorsement of the Forestry Service was given.

The warmest supporters of Mr. Pinchot admitted that mistakes had been made. The present plan of leasing the ranges to stockmen for a consideration has been in force but a short time. A vast number of employees have been required and some of these have been either incompetent or altogether too "chesty" to deal properly with people demanding fair treatment. But on the whole the management of the ranges is leading toward a more satisfactory solution of the range question.

A pretty fight developed between Fort Worth and Denver for the next place of meeting. The association was born in Denver and has held its sessions there many times. In fact, many stockmen maintain that it is such a central location that at least half the conventions should be held in that city, each alternate year being held in other cities to make the discusssions more general and attract membership from all portions of the country. Fort Worth put up a magnificent fight and her people were well organized, but Denver seemed to have the stronger pull and before the situation was fully realized Fort Worth magnanimously swung into line and suggested that she was willing to withdraw her invitation for next year and moved to make the election of Denver unanimous but insisted that her invitation should stand for 1911.

In the invitation to Fort Worth its delegates asserted that Denver was the center of the greatest stock section in the world, Kansas City, Omaha, and many other sections were in the packing business many years before the total stock handled by the city aggregated a million head. It was asserted that Fort Worth reached the million head mark within four years from the start of the industry around that city. A great reception is promised for the delegates when Fort Worth is reached.

One of the strong recommendations made in the resolution was that Congress enact a law which would prevent railroads changing rates except on the approval of the Interstate Commerce Commission and after notice to all parties interested. Another resolution was that a law should be enacted providing for a minimum speed limit in the transportation of live stock. Also that railroads be allowed to give free transportation to live stock attendants on stock trains both ways. Of course it goes without saying that a demand was made for the retention of the present tariff on hides. A strong recommendation was made that Congress should make sufficient appropriation to allow the Secretary of Agriculture to continue the work of eradication of the Texas fever tick. It was also recommended that all western states enact laws empowering sanitary boards to condemn, appraise and slaughter all animals infected or exposed to infection from fatally contagious diseases. The administration of President

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Our carload of **Corn** consists of the several varieties best suited to the different sections of the Southwest. See page 112 of our catalog for description. and write for prices on large quantities.

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The stock of nursery navel orange trees of Orange county has been practically all cleaned out.

Roosevelt and Secretary Wilson was declared to be fair and as a rule satisfactory to the stock growing interests. The officers elected for the coming year were as follows, which is practically the same managing board as that of last year: President, H. A. Jastro, Bakersfield; first vice-president, Murdo Mackenzie, Trinidad, Colo.; second vice-president, Joseph M. Carey, Cheyenne, Wyo.; treasurer, Col. W. E. Hughes, Denver, Colo.; attorney, Sam H. Cowan, Fort Worth, Tex.; secretary, T. W. Tomlinson, Denver, Colo.

Nineteen states had delegates present and Pres. Jastro in his appointments of executive committee chose from one to six delegates from the different states to act on the executive committee for the coming year.

After the close of the business sessions, jaunts were taken to Pasadena, the beaches, the orange groves and other points of interest for several days.

BANK OFFICERS ELECTED.

At the annual meeting of The Savings and Loan Society of San Francisco, held January 26th, the following directors were elected: Geo. D. Greenwood, President, James J. Fagan, Vice-President, Horace Davis, W. B. Dunning, E. C. Burr, F. J. Carolan, A. N. Drown, Arthur A. Smith and Vanderlyn Stow. The Savings and Loan Society was the earliest incorporated savings bank in California. On account of its former location in Clay street it was for many years known as the Clay Street bank. During the 51 years it has been in business it has disbursed in dividends the grand total of $17,038,962.29. For the six months ending December 31, 1908 a dividend on deposits has been declared at the rate of 4 per cent per annum.—San Francisco Call.

SPRAYERS.

The H. L. Hurst Mfg. Co., of Canton, Ohio, manufacturers of Quality Sprayers and pioneers of "free trial without a cent in advance" as applied to sprayers, are now advertising their line in the Cultivator. They have three special styles among others which are of great value to fruit growers and farmers. The first is a "Fitz-All" Sprayer, the second the Man Power Potato and Orchard Combination Sprayer and third, a Horse Power Combination Orchard and Potato Sprayer. We shall not attempt to describe these machines as this company sends out a free catalogue describing them and other styles which they make. It is entitled "Needn't Send One Cent." It is handsomely printed and every fruit grower and gardener ought to have the catalogue, not only for the description of the machines but for the valuable spraying guide and formulas which are to be found in it. It also contains several pages of detailed explanation how any farmer, anywhere in the United States or Canada, can get a Hurst Sprayer on trial "without sending a cent in advance." It also explains how the first person in every locality can obtain a sprayer free. Mention this paper in writing.

GARDEN CALENDAR.

One of the most helpful garden calendars and catalogues we have seen is that issued by the Charles Winsel Co., of 251 S. Main St., Los Angeles. It is a book of nearly 90 pages and full of interest and information for the gardener from front to back cover.

The recent storm has proven very conclusively the damage done by the fires of last summer. Inspection has shown that the last dash of the storm cut many gullies and carried off practically all the surface soil of the burned areas.

For Mehring Foot-Power Milking Machines see O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles, Cal.

Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

By Mrs. Minna E. Sherman

ON THE RANCH.

THE rain still comes down until it has become not a matter of what work we wanted to do next, but of working the land that is dry enough to be handled. The rule of plowing should be, never run the plows except when the land will crumble. If it remains wet and sticky it is very mischievous to run plows or harrows over it. Working sticky land is making it into brick when it drys out. Humus is needed in this class of land and when several crops of peas or burr clover have been turned under it takes away this gumbo character. It often pays well to plow in green alfalfa to bring the soil into prime condition. That looks extravagant with alfalfa at the present prices, but it will not stay at the present high prices long, for whenever any product is let take its natural course in selling prices, it regulates itself, by having everybody planting when prices are high, and nothing brings down the price so quickly as a large supply. I think we will see the acreage planted to alfalfa greater this year than it has been for some time past. I bought the alfalfa seed needed yesterday as I did not care to risk a rise in prices next month. We have some sprouting at present or rather put to sprouting to see how it will turn out. The home saved corn and sorghum seeds give us better crops than the seeds we can buy readily in the market. If we raised the alfalfa seed we use I believe we could have better crops.

Alfalfa Care.

Now is a good time to run the mower over the older alfalfa if the dryer portions are on top of the newer growth. Then the ditches should be repaired. As soon as the land is a little dryer the disks can be run to advantage. Where the stand is fully as strong as is desirable, then it will not need the splitting up of the crown, still it may be helped greatly if the soil is loosened with a spader or rangle harrow. One piece we are working on now with four Japs had become full of bermuda grass. After it had been plowed and crossed with the sharper disks the Japs use the four tyned hay forks to remove it. After a little time it is burned and again the cultivator run over the bermuda. It is cross cultivated to rake out all the remainder. Around the swale a slight check will be thrown and then the land will be plowed and planted to barley for a winter crop and followed in the spring by a sowing of sorghum, after the bermuda has received a second cultivating, raking and burning up. Keeping the land covered with a growing crop and, then, whenever it is plowed, raking and burning any bermuda that is found will in a few years end this troublesome pest.

Johnson Grass.

After plowing a piece of Johnson grass land the roots should be raked up and disposed of in some way. This year of high-priced feeds we have sacked and used them to increase the pigs' feed. They seem to thrive on Johnson grass roots when they do not have them to root out, nor as an exclusive diet. However they might not be good if continued too long. In the alfalfa fields Johnson grass is destroyed by the constant cuttings. As it never has a chance to mature any seed it fails to make more than surface roots.

Disking.

Where the alfalfa stand is light on a field it should be disked one way almost at once to kill out the foxtail. Later, when the danger of frost is past, then it should be sowed with fresh seed and disked in the cross direction. I often sow in a little barley when thickening up old alfalfa. I do not practically find it smothers out the alfalfa as many fear. When alfalfa seed is eighteen sents a pound, if ten to fifteen pounds is sown to the acre, with a light seeding of barley, say fifty pounds or less to the acre, the first crop resulting will be good hay, the barley having filled the place usually taken by the foxtail. Then the alfalfa plants will have room to grow large and make the roots as thick as a man's wrist. The next year's disking divides the alfalfa crowns into two or four pieces and a heavy stand has been secured at a less expense than where so much more seed is used. This is the reason why many people sow barley with their alfalfa. In making a success of this way of doing, the land must be worked well and deeply and then after a week's rest it should be cultivated deeply and the cultivation followed with the drill putting in the barley; then the alfalfa seed is sown broadcast over the surface and lightly harrowed into the earth. The seed bed cannot be too well made if success is to be secured in alfalfa growing.

How do we sow at the ranch? Well, the land for the alfalfa has been cleaned off and plowed up once and is taking in all this glorious soaking rain. As soon as we can do so, without injury to the land, it will be plowed again and then harrowed and left for a few days, then cultivated and harrowed until it is as smooth as the flower beds around the house. The small hand seeder is used for the alfalfa and the seed is put on twenty-five pounds to the acre, then harrowed lightly into the land. In ten days it shows up well all over the place, and after the fifteenth of March the frost is not likely to be severe enough to hurt anything that has passed the first leaves.

Manure.

Whenever, there is any manure to spare, there is no better place to put it than on the alfalfa fields. The use of gypsum in the stables does much to hold the nitrogen and if five or six loads of stable manure with a sack or two of gypsum to the acre goes out to the alfalfa fields every fall the crops can be made a third larger. The growth of the plants of a fertilized alfalfa field will be six to ten inches taller at each cutting, than in the tramped out neglected patches. The summing up of all this is, that if you want the largest tonnage possible,

Creamery Supplies

Cream Separators — Milk Cans
Combined Churns — Milk Bottles
Babcock Testers — Brushes
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Auction Sale

80 Cows and Heifers, 2 Driving Mares
FRIDAY, FEBRUARY 12
AT 10 O'CLOCK A. M.

On the Fred Bixby Ranch 1 mile south of
LOS ALAMITOS SUGAR FACTORY

Take Santa Ana electric cars to Martha's Vineyard. Teams in waiting until 9:30 A. M.

54 Head Dairy Cows, Jerseys and Holsteins young and in good condition, mostly all milkers, fresh and coming fresh soon, in fact all good dairy and family cows.

24 Head 1 and 2 year old Heifers, Jerseys and Holsteins, coming in soon, all choice Heifers.

1 five year old Holstein Bull. Two 18 months old Holstein Bulls.

1 canopy top 2-seated surrey, in good condition. 1 set driving Harness, 1 fine upright piano, nearly new.

Terms: 6 months time with note and approved security and 7 per cent. interest on sums over $50, 3 per cent. discount on time sums.

I am quitting the dairy business, closing out my entire herd and leaving the state, and everything will positively go to the highest bidder. No limit or reserve. Free Lunch at Noon.

J. J. CLARK, Owner.

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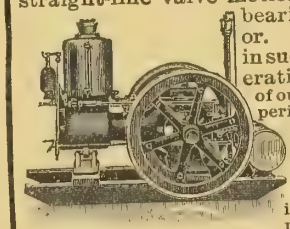
Stickney Gasoline Engines ARE THE BEST

Why? Because of the outside igniter, modern open cooling system, straight-line valve motion and ball-bearing governor. Thousands in successful operation because of our years of experience in building the best. Send for our Free Catalog and our Catechism telling fifty-seven reasons why



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Seven sizes: 1½ to 16 H. P. Stationary and portable.

De Laval Dairy Supply Co.
SAN FRANCISCO - LOS ANGELES - PORTLAND - SEATTLE

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Quarter-Centennial or "Jubilee Year."
Write for Jubilee Catalog—FREE

The oldest Woven Wire Fence on the market is now celebrating its "Jubilee Year." A handsome "Jubilee Edition" Fence Book has been issued for widespread distribution.

Gives the wonderful history of Page Fence—tells how it is made of genuine High-Carbon, Basic Open-Hearth Steel, in Page Mills and Factories. Explains the remarkable elasticity and resiliency of the wires. Shows how Page Fence is woven on Page Looms into the most enduring wire fence the world has ever known. Fully illustrated. Handsomely printed and bound. A book every reader of this paper should own. Don't buy fence at any price until you read the "Jubilee Edition" Page Catalog. Send now!

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All our pipe and casing has newly cut threads with new couplings attached and dipped in asphaltum. Guaranteed good as new. Prompt delivery on carloads or less. Small orders receive same attention as large ones. All sizes of pipe, also fittings and valves.

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Newman, Stanislaus county, recently shipped 20 tons of honey.

IN THE LEAD For 1909

The 1909 Model U. S. Cream Separators

retain *all* features that have given them their great reputation for durability and efficiency, and have several improvements that make them even to a greater extent than ever before, the ideal machine for dairymen who are posted and who **demand the best.**

And by intensifying the circuitous and tortuous currents of the milk in its passage through the separator bowl, we have been able to

Greatly Reduce the Diameter of the Bowls

which makes them operate easier than ever and still retain their great milk capacity.

Notwithstanding most manufacturers were complaining all last year of dull times and small sales the UNITED STATES SEPARATOR had one of the **largest sales** in its history and since this fall season began, sales are larger than last year.

Do not forget that the *United States* has *beaten* every separator in *endurance tests* and holds the WORLD'S RECORD.

No dairyman can afford to purchase a cream separator until he has first examined the construction and operation of the

1909 Model

Sales agents in nearly every dairy section. If no agent in your town, **write** direct to us for Catalog No. 20 and we will also quote prices.
We have distributing warehouses in every dairy section in the United States and Canada.

VERMONT FARM MACHINE CO., Bellows Falls, Vt.

The Lafayette Stock Farm

Lafayette, Indiana **J. Crouch & Son, Props.**

Percheron, Belgian German Coach Stallions and Mares

Our last importation of Percheron, Belgian and German Coach stallions and mares arrived in our barns August 1st, among them the prize winners of France, Belgium and Germany, and we can show buyers over 200 head of high class stallions, which we will price as low as any reliable importer can, and give liberal guarantee & terms. If your locality needs a stallion, write us.

J. Crouch & Son
1309 J St. Sacramento, Cal

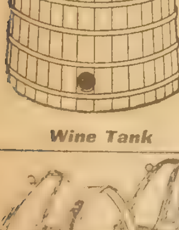
The Empire Line

This cut shows one of our Disc style of cream separators. We have six sizes to choose from; No. 33, with capacity of 450 lbs. of milk per hour only $70.00! Think of it, compared with other standard makes!

We also have a full line of the Frictionless Empire and Babcock testers. Send for catalogue today.

Empire Cream Separator Co.

No. 85 North Sixth Street, Portland, Oregon



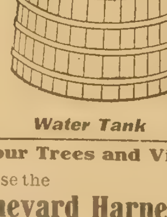
Tanks Tanks

WINDELER'S PLANING MILL AND COOPERAGE

GEO. WINDELER, Prop
Water Tanks, Wine Tanks made from carefully selected stock by careful and experienced workmen. "Tanks that are well made last a long time." It will pay you to get my prices before buying.

Geo. Windeler

Wine Tank **144-154 Berry St. San Francisco, Cal.** *Water Tank*



Don't Destroy your Trees and Vines

Use the

Stockton Vineyard Harness

You can work close to your vines. The best traceless harness made. Weighs 55 pounds

Price $17.50 Order now.

The H. C. Shaw Co. **Stockton, Cal.**

then sow heavily without nurse crop and fertilize, cutting for hay and not pasturing the fields. The other way may be the cheaper. If the high price of labor is considered in cutting the crop to feed green to the cows, it may pay better to pasture the alfalfa. If this is the case a thinner stand of alfalfa with barley disked into it will make a heavy first crop of hay, useful for horses and cows. Then the fields may be pastured the rest of the season.—M. E. Sherman.

COUNTRY PORK PACKING.

The advantage to the farmer in packing his own pork and the financial gain in it also is spoken of at some length by a writer in the Farmers' Voice after which he gives points on home curing as follows:

Cutting It Up.

"From the time the carcass is hung on the hooks, the farmer must remember that to make the most profit he must not follow the usual farm methods employed, but, like the large packers, cater to the public taste. First, I cut the backbone out of the carcass just where it joins the ribs; then from each half trim off the hams and shoulders; from the sides remove the spare ribs and lay them aside to sell immediately. The parts are now divided as follows: The hams, bacons and shoulders, to be put down in salt. There are two strips or flitch, the backbone, the pig's feet, the spare ribs, and the head. From these will come the meat for sausage, the fat for lard, and the trimmings for special sale. People are glad to give 20 cents for a set of pig's feet, while spare ribs are a scarce article and are easily worth 35 cents a side. After trimming the sweetmeat off the backbone, the latter, when cut into sections, sells at 7 cents per pound. The cheeks and meat from the head make sausage, while the skull boiled is excellent for winter-laying hens. In making sausage, I cut the fat well out, so it will not be too greasy. Fat enough to fry is plenty. If posible get three pounds of beef loin or flank to mix with every twenty-five pounds of pork to modify the taste. After runnning the meat through a sausage grinder, season with salt and pepper and moderate with sage or some other spices. Sausage equals about a pound to the pint and if there is too much sausage for immediate sale, put it in a three- or five-gallon stone jar and run about two inches of melted lard over it. This will keep it sweet all winter if maintained at an even temperature. It need be opened only as enough is sold to empty a jar. After rendering the lard put into the stone jars and sell as the demand requires. Good country-made sausage readily brings 15 to 18 cents per pound. Lard about 14 to 16 cents per pound. I supply some of the best hotels with my lard and pork.

"After the hams and bacon have been smoked they will be ready for marketing about February. Last year country-cured hams were worth from 14 to 16 cents, bacon 18 to 20 cents, and shoulders 10 to 12 cents. There is no comparison of the commercially-cured products of the big packers in the same class with the home-cured meats, and when people once get the opportunity to buy country products they will always be patrons.

Financial Results.

"Now as to financial results. Take a hog weighing at home 200 pounds, on a basis of a 5 cent market live weight, its value is $10. It fat the hog loses about 20 per cent or forty pounds, leaving 160 pounds edible portion. Approximately, the dressing will be: Two hams, 30 pounds; two shoulders, 24 pounds; four strips of bacon, 28 pounds; spare ribs, head, feet, and backbone, 35 pounds, leaving about 45 pounds for sausage and lard. The meats to be smoked will increase about 10 per cent in weight in the pickle, but lose about the same in smoking, so the selling weight is the same as the dressing weight. The following are very conservative prices for a country-dressed hog: Thirty pounds ham, at 14 cents, $4.20; 28 pounds bacon, at 15 cents, $4.20; 24 pounds shoulders, at 9 cents, $2.16; 45 pounds lard or sausage, at 12½ cents, $5.60; 35 pounds backbone, spare ribs, etc, at 6 cents, $2.10; soap fat, about 25 cents; total, $18.51; cost of hog, $10; profit, $8.51. This is no mean profit on the small outlay required and gives the farmer good wages for the time taken. After the trimmings are sold, if in no need of cash, he can hold his sausage until markets are favorable and his smoked meats until summer, when they will command a good price."

Equipment for Such Work.

"In order to do this successfully, however, the farmer must install an equipment, which need not be costly. The more important matter is that he understand how to cut up the hog so that all the pieces will have a neat appearance. Furthermore, he must learn how to cure this pork, how to pack it, and how to handle it so that it will come to the buyer in as neat and appetizing form as that furnished by the packer. We have seen farmers bring into the store country cured hams in sacks that had contained clover seed, and in other sacks the outward appearance of which was anything but pleasant, and trimmed in a manner that suggested ignorance, carelessness, and clumsiness. There is as much in the outward appearance of a ham as in the attire of a man or woman.

"If the farmer is to build up a reputation for his country-cured pork he must kill nothing but well bred hogs and of a size and quality suited to the consumption of the well-to-do class of people. The hog should not be over 200 pounds. If he wishes to make a specialty of hams and bacon, it should be well bred and fed on a variety of feed. Corn alone makes too soft a fat that shrivels up in the pan. Any farmer, however, can grow them on alfalfa or clover. He can use skim-milk and buttermilk from the dairy. He can grow Canada peas for summer feeding. He can balance up his corn with oats, barley, wheat screenings, oil-meal tankage, and produce bacon and ham of which the well-to-do citizen, when he has once tried them, will want more of the same sort and will not hesitate on account of price.

"There has been so much adulteration of lard and sausage that the farmer who produces a first class article, puts it up in a neat and attractive shape, and puts his own brand on it, can get a fancy price whenever it is ready for the market. There should be no difficulty about the farmer getting $16 to $20 for every $10 hog that he kills; and it may be well to ask whether there is not as much profit in killing the hogs and putting them on the market to a limited extent as there is in growing them in the first place.

The tree commission of Redlands is doing active work in tree planting and care along the roadsides.

ABSORBINE

Cures Strained Puffy Ankles, Lymphangitis, Poll Evil, Fistula, Sores, Wire Cuts, Bruises and Swellings, Lameness, and Allays Pain Quickly without Blistering, removing the hair, or laying the horse up. Pleasant to use. $2.00 per bottle at dealers or delivered. Horse Book 5 D free.

ABSORBINE, JR., (mankind, $1.00 bottle.) For Strains, Gout, Varicose Veins, Varicocele, Hydrocele, Prostatitis, kills pain.

W. F. YOUNG, P. D. F., 244 Monmouth St., Springfield, Mass.

For Sale by Langley & Michaels, San Francisco, Cal.; Woodward, Clark & Co., Portland, Ore.; F. W. Braun Co., Los Angeles, Cal.; Western Wholesale Drug Co., Los Angeles, Cal.; Kirk, Ceary & Co., Sacramento, Cal.; Pacific Drug Co., Seattle, Wash.; Spokane Drug Co., Spokane, Wash

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Anthrax and Blackleg VACCINES

Are given the preference by 80% of California stockmen because they give better results than others do.

Write for prices, testimonials and our NEW booklet on Anthrax and Blackleg

The Cutter Laboratory
Berkeley, California

Three Stroke Self Feed Hay Press

Two men can run it. All steel and iron. Smooth bales. Easy draft. Satisfaction guaranteed. Free trial. Ask for Catalogue 28.

The Auto-Fedan Hay Press Co.
1521 West 12th St., Kansas City, Mo.
Agents—John Schilling, Jr., Los Angeles, Cal. J. C. Gordon, Box 167, Sacramento, Cal.

Live Oaks Farm

Frank A. Meacham, Proprietor.
Importer and breeder of RED POLLED CATTLE, SHROPSHIRE SHEEP, RAMBOUILLET SHEEP, HORNLESS AMERICAN MERINO SHEEP. Both sexes for sale. Take electric car at Petaluma or Santa Rosa for LIVE OAKS STATION. Address all mail to
Petaluma, Sonoma Co., Cal.

HOLSTEINS

We Have For Sale a Number of Registered Young Bulls and Heifers **$100**

All our stock comes from the celebrated herd formerly owned by the Pierce Land and Stock Co., the premium herd of Holstein Friesians in California. Oakwoods Stock Farm Co., Lathrop, Cal

VENADERA HERD OF REGISTERED JERSEYS

I have for sale a number of richly bred young bulls, some of them from cows that have high official yearly records.

GUY H. MILLER,
Route 3, Modesto, Cal.

Pure Bred and Registered

Jersey Cattle, Poland China Hogs M. B. Turkeys

Large selection. All ages and grades. Correspondence solicited. Prices reasonable. Satisfaction guaranteed.

GEO. A. SMITH Corcoran, Cal.

The Whiting Jersey Stock Farm Company

Is making the very best strains of blood fresh from the island of Jersey a specialty.
Whiting Jersey Stock Farm Co. Heber, Imperial Co., Cal

Hay For Sale. Buy your hay in car lots. Special attention given to supplying alfalfa to dairies.
E. R. LONG
Bakersfield, California

Thoroughbred Poland China Swine
Black Minorca and Barred Rock Poultry
High Grade Stock of Best Strains.
Young Stock For Sale
W. Bassett Hanford, Cal

John Lynch Breeder of Registered **Shorthorns**
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Box 321 Petaluma, Cal.

Berkshires--Shorthorns

My Berkshires took 9 First, 6 Second and 4 Third Prizes and both Gold Medals. 50 Head For Sale.
G. A. MURPHY, PERKINS, CAL.

PURE BRED BERKSHIRES

Young Stock For Sale
Wm. H. Bird Box 6, Compton Cal.

When writing advertisers, mention Cultivator.

FEEDING MILCH COWS.

Milch cows require different feed from beef cattle. You should not feed much fat forming foods, as your cows would lay on fat instead of producing milk. Feed more silage or roots in the winter.

Daily feed for a thousand-pound cow: 40 pounds of silage, 7 pounds clover hay, 8 pounds of grain. The cows that are soon to freshen should be fed on succulent feed, such as silage or roots, bran, linseed meal with a little oats. Keep the bowels open and do not feed very heavy on grain just before or after calving.

After calving, give bran mashes and warm the drinking water for a few days. Allow the calf to suck for about two days, and then feed the mother's milk from a pail for about two weeks, about three quarts twice a day; after that reduce it with skim milk or warm water so that at the end of the fourth week the calf will be getting all skim milk or half whole milk and half warm water, with some reliable stock tonic to aid digestion. Keep a supply of good clover or alfalfa hay within reach and also some ground oats, with a little linseed meal mixed with it.

After the calf eats the ground feed, gradually get him used to eating whole oats, as this is the best feed for him up to six months old.

The heifers should not be bred until fifteen or eighteen months old.—By Dr. David Roberts, Wisconsin State

A GREAT GUERNSEY RECORD.

Last March, the two-year-old Guernsey heifer, Dolly Dimple 19144, Adv. R. 628, finished a year's official record of 14009.13 lbs. milk, 703.36 lbs. butter fat, which would be equivalent to 820 lbs. butter. This is undoubtedly the most remarkable year's official record in the world, when age of animal is considered.

Oct. 9, 1908, this remarkable heifer dropped her second calf. During the last 15 days of the month, she gave 927.1 lbs. milk, which contained 41.63 lbs. butter fat. During the month of November, she gave 1898.6 lbs. milk, which tested 4.49 per cent, and thus contained 85.25 lbs. butter fat.

She recently gave a seven day test of 444.8 lbs. of milk which tested 22.03 lbs. butter fat.

Statement of feed given during the week: Hay, 70 lbs.; Silage, 105 lbs.; Roots, 140 lbs.; Beet Pulp, 63 lbs.; Bran, 126 lbs.; Pea Meal, 8.4 lbs.; Ajax, 8.4 lbs.; Ground Oats, 12.6 lbs.; Gluten, 12.6 lbs.; Oil Meal, 8.4 lbs.; Alfalfa Meal, 8.4 lbs.; Cotton Seed Meal, 8.4 lbs.; Hominy, 4.2 lbs.

It is doubtful if there is a better 7 day record for an animal of same age and on equal feed of any breed in the world.

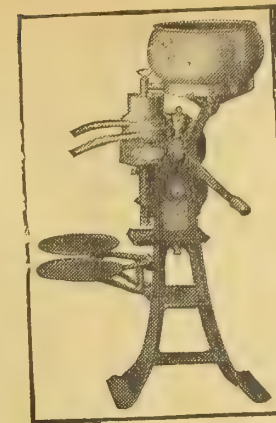
THE EMPIRE CATALOGUE.

The new 1909 catalogue put out by the Empire Cream Separator Co., whose ad appears in this issue, is now ready for mailing. It is replete with information for the cow owner. The cuts are excellent, and the line is so complete that any rancher can choose a machine to suit his herd of from one to one hundred cows, or to suit his pocketbook. Every man or woman who is interested in cream separators should send their address at once for one of these catalogues; it is worth reading.

The company is progressive and their phenomenal growth in the last ten years demonstrates how popular their machine must be. They claim their sales now are fifty times as great as eight years ago. They have kept experts at work for years making a study of just what would make the best all-around separator for the rancher to wear out. The result you can see by reading their catalogue or examining their machine. After the machines have been assembled and the bowls carefully balanced and made to run perfectly true, they are run several hours with water to test each machine before they are sent out to be placed on the market.

The company has branches all over the United States and Canada, with the Pacific Coast branch located at Portland, Oregon. This branch carries a large stock of machines at San Francisco, Spokane, Wash., Helena, Mont., Idaho Falls, Idaho, and Vancouver, B. C. This saves the purchaser from paying a large amount of freight, as he is able to get the machines right near home.

It is also introducing two small sizes of gasoline engines, which are becoming very popular owing to their simplicity and general make-up. You should read their catalogue.



The Simplest, Strongest And Most Convincing Of Cream Separator Arguments

We cannot believe that there is a sensible man living who would put his own money into the purchase of any other than a DE LAVAL cream separator, for his own use, if he would but first avail of the opportunity open to everyone to see and try an improved DE LAVAL machine before buying any other.

It is hardly possible to say more than this. It is hardly possible to put the simple truth in plainer words. It would hardly seem possible to say it more convincingly.

The trial of a DE LAVAL machine is free to every responsible man thinking of buying a cream separator. We have agents in every locality for this purpose. If you don't know the agent in your neighborhood send to us for his name and address and it will be a pleasure to give your inquiry prompt attention.

DE LAVAL DAIRY SUPPLY CO.

108 So. Los Angeles St. LOS ANGELES
42 E. Madison Street CHICAGO
165-167 Broadway NEW YORK

General Offices: 101 Drumm Street, SAN FRANCISCO.

107 First Street PORTLAND, OREG.
1016 Western Ave. SEATTLE
Box 1052 VANCOUVER, B. C.

A PROFIT OF $490.00.

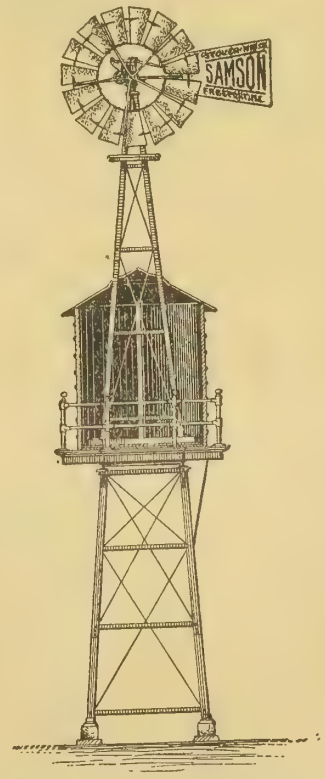
J. Dickerson, Fort Wayne, Ind., writes January 5th, 1909, as follows: "I am using Absorbine on my pacer and it is worth its weight in gold. I bought him in July, after he got hurt in a race, for a $10.00 bill, and am now offered $500.00 for him at any time." Lameness, bruises, strains, swellings or inflammation in the muscles or joints respond quickly to Absorbine, $2.00 a bottle at druggists, or sent postpaid on receipt of price. W. F. Young, P. D. F., 244 Monmouth St., Springfield, Mass.

Imperial Valley Lands have a greater earning capacity per acre than any land on earth. For price list and information address, James S. White Jr., and R. A. Holt, Holtville, Cal.

Wood soled Boots and Shoes. Boots $3.25; Shoes, $2.00 O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles, Cal.

SAMSON WIND MILLS

Have double gears, removable bearings and center lift, which double the life of the mill. They will last longer, pump more water and give better satisfaction than any other WIND MILL.



This is an up-to-date Sub-structure, Tank and Wind Mill outfit complete; substantial, economical and attractive. We build all kinds. Write us or our general agents for full information and prices, description &c., before purchasing.

The STOVER MFG. CO.
FREEPORT - ILLINOIS
California Avenue
CRANE CO., LOS ANGELES and SAN FRANCISCO
General Agents for California

Geo. C. Roeding, Fresno, Cal., breeder of
Thoroughbred Holstein Bulls and Heifers
Thoroughbred Berkshire Boars and Sows

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California Cultivator

ESTABLISHED 1889

Subscription Price One Dollar per year, payable in advance. Dates of expiration of subscription accounts appear each week on the address label. John Jones 7-08 means July 1, 1908. Notify us by mail if you desire to discontinue.

Thursday, February 4, 1909

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115½ No. Broadway, Los Angeles.
733 Merhcants' Ex. Bldg., San Francisco.

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MRS. FRANK METCALF - - - Poultry

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Contents

SAN BERNARDINO ARROWHEAD, Cover.
AMYGDALINA REGNANS, 115.
CITRUS.—A Few Insect Friends; Gumming of Nursery Trees; Food Rot; Soil Analysis, 116, 117.
DECIDUOUS.—As to Sulphur; Phylloxera; Food Value of Dried Fruits; Pruning the Fig, 118, 119, 120, 121.
BEES AND THEIR CARE.—State Bee Keepers' Association, 122.
LIVE STOCK AND DAIRY.—National Live Stock Association; the Greatest Jersey; On the Ranch; Country Pork Packing; Feeding Milch Cows; A Great Guernsey Record, 122, 123, 124, 125.
EDITORIAL.—It Rained; Sunkist; Tariff Reductions; Woodlot; Co-operate; Lincoln; Be Up-to-date; Nut Growers' Association, 126.
AGRICULURAL NOTES OF THE PACIFIC COAST.—Northern, Central, Southern, The Coast, 127.
POULTRY.—Walter Hogan System; Squab Raising; Turkey Experiences, 128, 129, 130, 131.
GENERAL AGRICULTURE.—Alfalfa; Free Lumber; The Farmer; Rhode Island Oyster Farms; Good Suggestions, 132, 133.
SMALL FRUITS AND VEGETABLES.—Planting and Care of Tomatoes; Peanut Raising, 134.
ORNAMENTAL GARDEN.—Spring Flowering Bulbs; Litter About the Grounds; In the Yard and Lawn, 135.
IRRIGATION AND FORESTRY.—Eucalyptus, 136.
QUERIES.—Budding Cloth; Concrete Tank; Commercial Fertilizer; Rhubarb; Pruning Raspberries; Deciduous Gum Disease; Cover Crops; Plums on Apricots; Beans; Seedling Eucalypts; Irrigation from Flowing Well; Walnuts in Napa Valley; Scab on Potatoes, 137, 138, 139.
HOUSEHOLD.—Twilight on the Desert; The Guest Chamber; Ways of Cooking Apples; Roast Chicken; About the House, 140, 141.
PRODUCE MARKETS.—Los Angeles Market; San Francisco Market; Citrus Markets, 142, 143.

IT RAINED.

"The biggest January ever" from a rain standpoint is the verdict for 1909. So great in fact was the downpour that vast damage has been done in some sections. This is especially true in lowlands protected by levees where the water could not be disposed of rapidly enough without flooding of much valuable land. This will greatly reduce the output of some of the richest lands of the state this year and in this sense is a serious loss. On the whole, however, the benefits will be so much greater than any possible loss and a feeling of assurance in California conditions increased so that as a whole, happiness is having full sway over the state.

SUNKIST.

The Southern California Fruit Growers' Exchange is again taking up a campaign in eastern papers, of advertising its fruits. The advisability of this was proved out to the satisfaction of the management and that it was a money winner in last year's campaign in Iowa. We believe that a very wise move and believe that the money invested that way will return several fold to the orange growers.

Another feature we note is the adoption of the catchphrase "Sunkist" oranges and lemons of California. Now, freak spelling, at times, brings forth very catchy phrases that stick to people's minds longer than the orthodox way of doing things, but like the proverbial "Sublime and ridiculous," there is slight latitude in it. Sunkissed, spelled out, would we believe, be far more attractive than "Sunk-ist." That surely is the division that may be made in the minds of some, and it would not add to the attractiveness of any fruit, the description of which is pronounced that way.

We think it is an opportunity for subscribers of the Cultivator to send in suggestions for catchy phrases which would prove of great value to the advertising committee of the citrus people.

We recall very well, a few years ago when Mr. Roeding wished a catchy name or brand to establish for his figs, an advertisment in this paper brought forth the suggestion of combination of the word, California and of Smyrna from which country the fig came. The combination resulted in "Calimyrna," a most euphonious and attractive looking word, and it has proved a winner. Sunkist may, but it doesn't look good to us.

TARIFF REDUCTIONS.

Reports from Washington do not reassure fruit growers of California, especially since the promise comes that a material reduction will be made in the tariff on grapes, oranges, lemons, hops and olive products. Secrecy has been pledged on the part of the committee but it is understood that these have been selected for the slaughter. Rumor has it that the reduction is only 10 per cent, but this, especially on lemons, it is feared by many will bring disaster. Sure it is the industry is handicapped enough now by freight rate necessary to get our products to Eastern markets, and for Congress to increase this handicap shows lack of consideration for the welfare of the producing classes. However, it must be admitted that the cry has been for tariff reduction and it has been claimed that California had nothing which she would concede, consequently the issue had to be forced on some lines. The Eastern manufacturers felt they had some justice in demanding that they should not carry the burden of all the reductions.

THE WOOD LOT.

We recently noted in an eastern paper this remark: "When you are thinking of buying a farm look for plenty of wood for fuel and other purposes, for good water, good neighbors and good market advantages."

It may not look at first thought as if that part referring to the "wood for fuel" would apply to California conditions. The "woodlot" has not been a factor on the California ranch as a rule. This year has seen such a movement towards planting of wood and lumber trees that it is very probable future California farms may occasionally show a profitable wood lot which will aid in the fuel and lumber supply of the farm, and in addition we believe add to its saleability in case addition we believe add to its salability in case the fence or the corral, and even timbers for the construction of our homes may just as well be grown on many ranches as to buy them all from British Columbia. It would probably not be advisable to grow them on $1000 per acre land, but there are acres on many of our farms which have land not valued that high and of but little use for other purposes. Such lands should be utilized for the wood lot.

CO-OPERATE.

A number of growers of rhubarb gathered in the office of the Cultivator this week and discussed the question of disposing of the products of the members. Some exceedingly profitable returns have been received by growers of rhubarb. Again at times and with increasing regularity disastrous returns have been the results of shipments of fine stock. The growers in question knowing the worth of the article which they are producing and the favor which it has secured wherever introduced and delivered to consumers in a fairly fresh condition, propose to secure the further introduction of this product and do it in a way which will return a due share of profits to the grower as well as to the commission men.

No definite line of action has been taken as yet other than to call for a more general meeting next week. At that time it is possible the organization may be completed. Sure it is that such a product is worthy of being pushed and the pioneers in the industry deserve such help as may be given, and co-operation will give that help more effectually than any other plan.

LINCOLN.

All the world is turning at this time to thoughts of America's most loved president. Somewhat crude in the eyes of the polished people of his time, but so honest and sturdy and fearless in the carrying out of his convictions that the world has never ceased to voice its admiration. This is expressed more and more as the years show the greatness of this great man's acts always performed humbly and with no self-assertion. This year in particular, attention is attracted from the fact that it is the centenary of his birth. This occurs next week, February 12, and too great praise cannot be given to the emancipator of slaves and savior of his country.

BE UP TO DATE.

The way-back farmer remarked as he watched the introduction of gasoline power on his neighbor's farm: "Isn't it strange how men will scheme to get out of honest work?" Such farmers as this are the kind who accomplish their work by "main strength and awkwardness," not thinking for a moment that the more energetic and up-to-date farmer who uses gasoline or electrical power to do the dirty and heavy work of the ranch and applies his activities along other and more important lines is the least lazy of the two.

Be up to date and keep the engine busy.

NUT GROWERS ASSOCIATION.

National Nut Growers Association has taken up the matter of forming a branch association in the state of California. The matter has been brought to the attention of the association at Santa Barbara and it is hoped the organization can be completed for it is believed that much good would result from the formation of an alliance among the producers of nuts in California, which in 1907 produced 12,000,000 pounds of walnuts and 2,000,000 pounds of almonds, and that organization would be simply in line with the tendency of the other horticultural and agricultural interests of the State.

Many of our readers can often avoid the loss of time, which is the most valuable asset we possess, and some cash, just by giving a little attention to the methods employed by our best ranchers, stock raisers and fruit growers. We are communicating regularly with that class of farmers as well as with the different agricultural colleges throughout California. Every issue of the Cultivator contains knowledge which, if put in practice, will prove helpful to any person interested in farm work. Farmers from the East, even though they have had long experience and success, will find the "same old way" will not, in all cases, apply here, and therefore the little time you give to reading the Cultivator will often prove a wise investment.

The number of sheep in the United States increased during the year 1908, from 54,631,000, which was the number, according to the Department of Agriculture, on January 1, 1908, to 56,084,000 January 1, 1909. The average valuation, however, decreased slightly this year, being $3.43, as against $3.88 last year. This makes the total valuation of last year higher than that of this. The average valuation, however, is far above the average for the last ten years, which is only $2.92.

On January 1st, there were in the United States, 20,640,000 horses with an average valuation per head of $95.64, or a total valuation of almost two billions of dollars. This was an increase of over a half a million on the figures of January 1, 1908. The same statistics, which are furnished by the Department of Agriculture, show the number of mules to be 4,053,000, with an average valuation of $107.84, showing the mules to be worth about $12.00 more on an average per head than horses.

Agricultural Notes of the Pacific Coast

Northern California

Orange raisers at Healdsburg are concerned over youngsters stealing their fruit.

The first asparagus shipped this season is claimed by Rio Vista, Solano county.

It is estimated that there are $100,000,000 invested in the grape industry of California.

Many valuable bridges have been either damaged or washed out over the Sacramento valley.

O. E. Bremner of the State Horticultural Commission is recovering from an attack of typhoid fever.

The precipitation for the month of January over the Sacramento valley varies from five to 15 inches.

It is expected that the pack of peas at the cannery at Haywards will be greatly increased the coming season.

Fifteen thousand dollars is to be secured from the State Legislature if possible for dredging Petaluma Channel.

Hop growers of the entire northern part of the state are demanding a continuance of the present duty on hops.

The blackberry growers association at Sebastopol have settled with the canners for their last year delivery at $37.50 per ton. The association marketed 425 tons of berries.

Forbestown, Butte county, holds the record for heavy rainfall, the month of January showing a total of 50.35 inches. Three consecutive days showed an average precipitation of 6.50 inches.

At a recent meeting of the grange at Glen Ellen, Sonoma county, a resolution was adopted favoring an amendment to the Cartwright anti-trust law, making combinations of fruit growers possible.

The fight is waxing stronger every day between the people of San Francisco who wish the waters of the Hetch-Hetchy and those who wish to see the beauty of the Sierra Nevada mountains preserved.

The Haywards Poultry Producers Association is one of the strongest organizations of its kind in the state, the members being thoroughly united and working for securing better returns for their products.

Nevada county is engaged at this time in marketing oranges and olives in the western part of the county and in harvesting the biggest crop of natural ice in the eastern part of the county which it has ever had.

Steps are being taken to reclaim a large body of land adjoining district No. 70 in Colusa county. A mammoth system of levees or canals will be built and when the land is reclaimed it will be sold in small parcels.

Senator Rush has introduced a bill into the State Senate which calls for the establishment of a subordinate office to that of State Veterinarian which shall have charge of examination of live stock introduced into the state.

A bill will be introduced into the State Legislature providing for perpetual appropriation for the experiment station to be used on work along the line formerly followed by the State Viticultural Commission. The appropriation is to be for $15,000.

Central California

Turlock has the record for picking January grapes.

The acreage of alfalfa at Turlock is increasing at a rapid rate.

Recent abundant rains have caused a lowering in the price of hay.

The Sierra Nevadas are covered with snow even to the lower foothills.

California Canners Association has made an appeal for lower duty on tin plate.

The larger sizes of prunes are reported exceptionally scarce in the market.

Entire Sierra Nevada range is white from one end of the state to the other.

First new potatoes of the year at Hanford were marketed in January from seed planted in November.

Local butchers at San Jose report beef cattle scarcer and price higher than at any time for years.

The recent rain gave to Bakersfield about five inches of precipitation which is the greatest since '93.

The Turlock fruit juice factory is a bee-hive of industry at this time bottling the grape juice of the last season.

Of course the rain which has visited the entire coast has been "made" by "Rainmaker" Hatfield at Crow's Landing.

At a recent meeting of the Del Rey Farmers Union, J. T. Walton was elected president and Ben Swansen secretary.

Porterville has a twelve pound cabbage which the Messenger says is as big as a washtub and solid as a politician's cheek.

The wine makers of California are insisting that California wines shall enter Cuba on the same basis as Spanish wines.

It is reported that the raisin packers are keeping close watch on the Farmers Union, which proposes to handle the raisin output.

Porterville is contemplating the forming a levee and drainage district for the better protecting of the city in time of storm.

Students of Stanford University are working for the establishment of a school of Forestry in connection with that great institution.

Directors of the Turlock Irrigation District recently held an important session, at which report was made of survey for a high line ditch which will bring water to additional lands.

The Special University Extension Train, or Farmers Institute on Wheels is now making its fourth trip in the state through the San Joaquin valley.

The great May Day fete which is planned for Los Gatos is meeting with support by all surrounding communities, and a great day is promised for the flower festival.

A Sanger raisin grower investigating market conditions in retail sections of the east has found raisins selling at a high price and retailers maintaining that they are unable to buy the goods at a reasonable price.

Fresno raisin representatives before the Ways and Means Committee in Washington have shown very conclusively that the Zante currant which importers claim is a currant is nothing more nor less than a small duct.

Southern California

The Coachella citrus orchards will be greatly extended during the spring plantings.

Several new wells are being sunk in the Coachella valley by the Coachella Development Company.

Imperial valley is indulging in the novelty of making midwinter cuttings of alfalfa and making good hay from it.

The ice plant at Coachella which has been out of commission for some months will start again in a short time.

Coachella Valley is objecting to the vast number of quail and appeals to hunters to help them decrease the number.

A new fruit company has been organized at Redlands under the name of the Denman Fruit Company with $20,000 stock.

Redlands orange growers maintain that their returns up to this date have been better than those of last year, same date.

The rainy weather stopped the packing houses for a time, but they are now rapidly resuming operations in all citrus sections.

Much new land will be brought under cultivation, some planted to orange trees, in the southern part of the Riverside section.

Riverside citrus growers are considering the formation of an organization to fight insect pests and protect against further inroad.

A strong advance in the cabbage market of the east is pleasing to the cabbage growers of Coachella valley who are growing a fine crop.

Bell peppers are bringing to the gardeners of Orange county the biggest prices in years. The planting of young plants will be greatly extended this season.

Forty-seven walnut growers of Orange have formed a new walnut association. The president for the first year is R. M. Hargraves; secretary, H. G. Munhall.

The celery growers of Orange county are pleased over the faster train service with their celery shipments. Celery now lands in New York in ten or eleven days as against 14 formerly.

The restoration of entry of the government lands in Imperial valley offers no opening for speculation in lands. It is said that it means only that reclaimers of land may proceed to perfect title.

Farmers from other sections of Southern California who went last year to Imperial to plant melons, shake their heads sadly and say they will cultivate more staple crops this year.

The rain of last week covered the entire state and gave to Southern California the heaviest soaking it has had this year. The rain varied in quantity from half an inch to five or six inches, according to section.

The rhubarb growers of Southern California will meet next Wednesday, Feb. 11, at the office of J. W. Beasley, 357 Central Avenue, Los Angeles, to discuss plan of organization so as to secure better returns for their pro-

The Coast

Butter is quoted at Spokane at 37½ cents.

Owing to heavy snow near Lewiston, Idaho, some stock is starving.

The Hood River, Oregon, section is increasing its cold storage capacity.

Reservation of mountain forests of Hawaii is being made by the Forestry Service.

Large tracts of land will be planted to orchards about Vale, Oregon, this season.

Almond growing is receiving some attention along the Columbia River in Washington.

The grange at Lynch, Oregon, favors the construction of roadways by convict labor.

Arizona Orange Association has shipped nearly 50 car loads of oranges up to this time.

One creamery at Tillamook, Oregon, received 2,754,000 pounds of milk during the past year.

Over a thousand wool men gathered at the recent Wool Growers Convention at Pocatello, Idaho.

Fruit growers of Grand Valley, Oregon, received over $350,000 for their output of fruits this year.

The Lewiston Clarkson canneries report at the closing of the year a most successful run on fruits.

Two bills have been introduced before the Washington legislature calling for a reduction in the price of jute bags.

It is claimed there is more stealing of horses in Oregon, especially the western section, than ever before in its history.

A bill has been introduced to the National Legislature extending the provisions of the Carey Act to New Mexico and Arizona.

A part of the first walnut tree planted on the Pacific coast will be exhibited at the A. Y. P. Exposition at Seattle next summer.

Some cars of Arizona oranges netted after the payment of freight and commissions over $1250.

The sheep men in the National Wool Growers Association introduced strong resolutions opposing the forest policy adopted by the Forestry Service.

The Roseburg, Oregon, Fruit Growers' Association is sending a lobby to the state legislature urging the passage of bills favorable to fruit growers.

R. E. Cundiff of Riverside reports the Salt River Valley of Arizona as being exceptionally favorably situated for the production of early oranges.

Spokane has endeavored to secure an appropriation from the National Congress for aiding the National Irrigation Congress which is to convene there next August.

The Inland Empire Poultry and Pet Stock Association held their successful annual show at Spokane last week. It is announced that over 2000 entries were made.

Milton, Oregon, fruit growers have found from experiments tried last summer that great profit is secured from expending money in more careful packing of apples.

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Is based on ***quality*** and it is quality in Poultry Food that produces eggs. ***Cheap filler*** and ***cheap grain*** will ***not*** make eggs. ***Midland Poultry Food*** contains only the ***choicest*** cereals and animal food the market affords. You ***can't*** afford to try and be successful and not get results. ***Midland Poultry Food*** will produce results. Try it and see. $1.95 per sack

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THE BEST AID IN GETTING THOSE HIGH-PRICED EGGS.
It acts as a tonic and digestive. Enables hens to lay more eggs during fall and winter.
Our FREE booklet, "THE RIGHT WAY," gives full particulars.
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EGGS FOR HATCHING—WHITE LEGHORNS—MITCHELL STRAIN
Large birds, heavy layers, bred for highest utility only. Order book now open for season 1909
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Poultry and Live Stock Supplies
We have the MOST COMPLETE and up-to-date supply house on the Pacific Coast. We are agents for the Petaluma Incubators and Brooders, Midland Poultry Foods, etc. We have everything required for Poultry, Stock, Dogs and Birds. Send for our catalogue; it is free.
Berrar & Robertson, 103 East Santa Clara St., San Jose, Cal.

Wool growers at Pocatella, Idaho, have signed an agreement pledging 23,000,000 pounds of wool during 1909 for the wool storage warehouse.

White Wyandottes
Eggs for hatching from these great egg machines. Prices $1.50 to $2.00 per 13. Orders booked now for delivery after Jan. 1st., 1909.
Wm. C. Parker, 111 Pacific Avenue, Santa Cruz, Cal.

Profit in the Poultry Yard

By Mrs. Frank Metcalf

We solicit short articles of a practical nature from the fancier and utility breeder, giving their experience with poultry. All inquiries pertaining to feed, management, disease and its prevention will be answered through these columns.

WALTER HOGAN SYSTEM.

The Poultry Breeders of Southern California were entertained by no less a personage than Walter Hogan himself at their last meeting, held Thursday, Jan. 28, at Los Angeles. A large attendance gathered from surrounding suburban towns in honor of the event, and after a discussion about the best manner of marketing eggs and poultry, and different people giving varying experiences, showing how the larger producers contrive to control the prices, to the great embarrassment of the people who only have a few birds now and then, to sell, our genial President, L. R. Walton, introduced the speaker we had all come to hear.

Walter Hogan is an oldish man, and claims he discovered the great secret of not only selecting the 200-egg type of hen, but the secret of what cock bird will reproduce his kind. Now, if this can be proven true, the millenium of poultry keeping would surely be here. But there are many doubting Thomases who want to be shown, and Mr. Hogan lives in Petaluma, and has no birds here to back up his assertions. Furthermore, he says the 200-egg hen will not reproduce herself in the next generation, and that to breed to this type alone, is to degenerate one's flock back to primitive jungle fowls which only lay in spring and not much then. Therefore, very few decided to pay the $10.00 he demanded for teaching this great secret, although some who have taken it, declare they think it worth all it cost them.

There is another system, very much like his own, which can be bought for $1.00, and the genuine Walter Hogan system has been advertised all over the East for $2.00, but perhaps a personal showing by the originator would be forth the added expense over the book. Every one buying the book or taking the lesson is sworn to secrecy, that the man who discovered the secret may reap some reward for his years of toil and study. He did offer to take a class of 100 at $5.00 each, but refused to consider a class of 50 at that price.

I may be a doubting Thomas myself, but think these systems mostly useful in detecting the present layers in a flock, thus preventing the slaughter of a laying hen, for market purposes, as a hen's shape changes materially when her clutch is laid out. Compare a broody hen with a laying one, and one can soon tell "which from 'tother."

I have studied both these systems from the published books, (the Potter and the Hogan) and those who have taken the personal lesson say they always refer to the book, not trusting to memory, so those who have missed the lesson direct, may still try the book, if interested.

The discussion about the marketing of fowls and eggs interested me principally and an expert is to address the meeting next month on the subject of marketing fresh eggs. Those present believed a guarantee as to the freshness of eggs should be provided by the producer, and his trade depend upon his living up to his guarantee. The dealers were suspected of favoring the cold storage plants instead of the rancher, by more than one, and those who sold direct to customers reported the best results. No difficulty is said to be experienced in getting from 5 to 10 cents above market quotations for reliable home grown eggs, but the trouble is to obtain a steady supply of one's own eggs to keep customers the year around. Then the large dealer steps in and says "Buy of me altogether or not at all" and the dealer must get where he can depend upon a constant supply. The same complaint is made in regard to squabs and broilers; Mrs. Burbridge reported that she could get from 30 to 40 cents a pound for all the broilers she could get, if a constant supply was assured, but a dozen or two now and then would have to go begging a buyer.

A large broiler plant is being considered, but several believe that the hotel people have gotten the "cold storage habit" and will not be turned from their present course, even should a supply of fresh poultry be assured. One man cited a hotel in a neighboring town, which charges the highest rates, and does not buy broilers of anyone he knows, so he believed they surely must use the cold storage stock. These matters are of public concern, and the proper officers should look into the matter, although perhaps the cold storage birds may be of first-class quality.

I used to know a young man who became head baker in a large Chicago bakery. He told me the eggs were carefully graded, and that the best eggs, (though all were seconds) were used in the white cakes, and the next grade, which he said were such as I would throw away pretty quickly, were used in sponge cakes and the

AN EASTERN SCENE—BUCKEYES IN THE SNOW.

White Rocks

Gutting's Superiors **Bred to Lay**

Again prove their superiority by winning all first prizes at the 20th Annual Show of the L. A. County Poultry Association. Send for circular giving prizes won and prices of stock and eggs. Buy eggs from prize winners and raise prize winners.

E. Gutting

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Quality S. C. White Leghorns, Mammoth Imperial Pekin Ducks, Golden Sebright Bantams, Black Tailed Japanese Bantams. All prize winners this season. Write for prices.

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Healthy vigorous day-old chicks hatched from selected utility stock. White Leghorns especially. All other leading breeds hatched to order. Prices according to grade of breeding stock. Send your name with address on a postal card and we will send you our circular and prices.

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We can fill orders promptly from our selected matings of utility bred stock, at $5 per 100, $45 per 1000. Our prize winning Leghorn, $2 per setting of 13. Won all first and all but one second, also silver cup for best pen at last Chutes Park Show.
San Gabriel car to Masonic Home, two blocks south to ranch.

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THEY LAY
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2,000 Chickens and 5,000 dozen Eggs wanted at the highest market prices. Make us all the shipments you can. Cash returns guaranteed. Correspondence solicited. Mark and consign all shipments direct to the

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All dealers sell it. Ask for No. 2 Fine size especially manufactured for chicks. We have something new for poultrymen. Write for sample.

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Write for circular. Ranch, Clarence Ave. and San Gabriel Blvd., one mile north of end of San Gabriel car line. **San Gabriel, Cal.**

like while really stale eggs went into the spiced cakes.

I have not enjoyed bakers' goods so well since then. Our own baker never bought any eggs of ranchers, when we were living in a different town from this, although I tried to sell him some several times. He said he "could get them so much cheaper at the cold storage," seconds, "but all right for baking with."

Hail the day of water glassed egg packages, say I, put up on the ranch where they are laid, and marked with the date upon which they are packed. —Mrs. Frank Metcalf.

SQUAB RAISING.

The Connecticut Experiment Station has issued a bulletin on Squab Producing which has many points of interest. For several years the station has possessed pigeon lofts and has studied experimentally various questions connected with squab raising under conditions similar to those of individuals attempting squab raising for market. On the basis of experience gained and data recorded various questions concerned with the feeding, care, mating, management, and housing of pigeons, the killing and marketing of squabs, and similar topics are discussed.

Pigeons, the author notes, depreciate in value with age and are considered to be in their prime when 3 years old. Very few pairs "pay for their feed after they are 7 years old."

"There are many varieties of pigeons that are used for squab producers, but probably the most common is the Homer. These are very vigorous birds, and there are few breeders who do not consider a certain amount of Homer blood essential. They are often crossed with Runts, Duchesses, or Dragoons. The Runt is a very heavy bird, but in most cases is considered a little slow in productiveness, while the Duchesse gives a feathered-leg squab, but has a tendency to increase the weight.

"A pair of young pigeons will seldom produce their first squabs in less than 8 months, and 2 pairs are about all they will produce before they are 1 year old. The first pair, as a rule, are small and are generally sold as culls. Five pairs of squabs a year are about all that a good flock of pigeons will average per pair, and there are many flocks that are doing less than that, while a few are doing more. It is seldom that a pair of pigeons are found that will produce over 7 pairs in a year.

Data giving the results obtained from 14 individual pairs in a loft of crosses show that the total number of squabs raised per year ranged from 4 to 17, the average days required for maturing squab from 21 to 29, and the average weight of the squabs from 8.75 to 13 oz. each.

A pair of squabs, whose weight is recorded in detail, weighed when 2 days old 1 oz. each and when matured at 26 days 14 and 16 oz., respectively. Data are also given showing the daily weight of the first squabs raised by 6 pairs of Homers, together with the age of the breeders.

The advantages of proper mating are shown by the fact that the average number of squabs per pair thus mated was 4 the first year and 5 the second year; the cost of feed for each pair of breeders in the 2 years, $1.27 and $1.33, respectively, and the average returns for each pair of breeders for the 2 years, $2.06 and $2.66. With pigeons carelessly mated the aver-

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Don't plant poor seeds—get the best.
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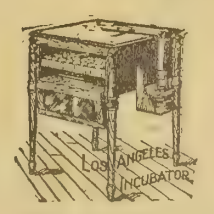

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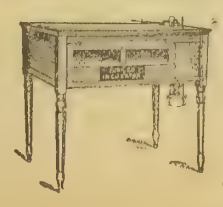

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When the hen is set, she and her nest should be dusted well with

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The best insect powder made. Lice and mites make her leave the nest. Killamite kills them. 10c, 25c, 50c, sifting cans, or 100 ounces for $1.00. If not sold by your dealer we will prepay freight on 50c or $1.00 can. When the chicks are hatched don't feed them anything for 24 hours, then feed them the best dry Chick Feed you can get. We say that is

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My San Jose Winnings: 1st, 2nd and 3rd Cock; 1st Cockerel; 1st, 2nd and 3rd Hen; 1st and 2nd Pullet. The above winnings were made out of ten entries.

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age number of squabs per pair in the 2 years was 2.5 and 3; the cost of feed per year for each pair of breeders $1.20 and $1.21, and the average return for each pair of breeders, $1.11 and $1.41.

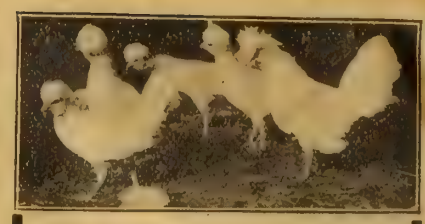
"In order to avoid dark-skinned squabs it is advisable not to breed from birds that have very dark legs or beaks.

"Often it is necessary to remate birds in order to secure stock suitable for market. Certain pairs will produce dark-skinned birds, while if they are remated it is quite possible to get a much better quality of squab. This is also done where crosses from different varieties of pigeons are being tried, and where some peculiar defect in size or shape may be noticed in squabs from certain pairs."

As regards feeding pigeons, "different methods of feeding have been tried at this station, also different kinds of feed, but the most satisfactory has been a mixture of equal parts of cracked corn, hard wheat, Kaffir corn and Canada peas, with the addition of a little hemp and millet seed during the molting season. Flat troughs about 5 inches wide and 2 inches high were used, and somewhat more grain than the birds required for a meal was put in, as we liked to have a little in the trough that they could have access to all times.

"There is nothing that will so retard the growth of a squab as to feed it at irregular intervals. This can be overcome by feeding the old birds regularly. We fed twice daily, about 7:30 in the morning and 4:30 in the afternoon. Another very satisfactory method was to feed a mixture of equal quantities of wheat, Kaffir corn, and peas from a trough, giving the birds just what they would eat up clean in about half an hour, and leaving a hopper of good cracked corn before them all the time. There is not much gained by changing the feed according to the season, as has often been advocated, although we do add a little extra cracked corn during the cold months. There is no more expensive attempt at economy than in trying to save by not giving the pigeon her full allowance of peas, although this is a high-priced grain."

Some data are recorded regarding the comparative merits of cheap and more expensive grains for pigeon raising. When 50 pairs were fed for a year a cheap mixture of grains (cracked corn, poor quality wheat, rape, millet, peas, and Kaffir corn) the average cost of feed for each pair of breeders was $1.03, the average number of squabs produced per pair of breeders 4.5, and the average value of the squabs per each pair of



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$90 per 1000.

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University Farm at Davis is making efforts for a $200,000 appropriation.

breeders $2.10. There was an estimated net loss on the lot of $4.28, not including labor. When a more satisfactory grain mixture made up of whole corn, wheat, Kaffir corn, Canada peas, and millet was fed to 12 pairs, the average number of squabs per pair was 5.5, the average cost of feed for each pair of breeders $1.96, the value of the squabs for each pair of breeders $3.13, and the calculated total profit for the lot, not including labor, $6.05.

TURKEY EXPERIENCE.

I read with much interest Mrs. Hammon's method of feeding her young turkeys which is very similar to mine. You asked me some time ago to tell my way and am indeed glad to do so.

I do not feed for the first 24 hours, then I give them hard-boiled egg ground fine, shell and all. This I feed with onion top and lettuce chopped and mixed with it four times a day for about a week, then I feed a corn-bread made with just sour milk and a little soda and cornmeal. The second week I mix some corn-bread with the egg, onion tops and lettuce and feed four times a day. Then the third week I omit the egg and give them cottage cheese beside the corn bread and greens. I found great difficulty in getting them to eat grain, but by mixing it with the cheese they gradually came to it. After the third week I varied their meal by giving them Kaffir corn or wheat once a day till they got used to it. After six or eight weeks I fed them barley soaked over night and bran mixed with cooked vegetables and skimmed milk or sour milk to drink, besides their water of course. I feed just what they will eat up clean at a time and never leave any food by them. One important point I think is not to let them out foggy mornings as they will get wet, and to keep everything clean. I always have grit before them.

I wish to express my thanks to the Cultivator for the interest they took in answering my questions regarding turkey houses, etc., which has been very valuable to me as I had just young turkeys having bought all the eggs I hatched from last year, and I would have used the young turkey eggs and probably would have had weak turkeys. As it is now, I have sold all my turkeys, and with some of the money will buy three old hens to breed from and keep the Tom I got a while ago to go with them. Then I will have a nice start and a safe one. When do you think is the best time to hatch turkeys. There seems to be quite a difference in opinion; some say early in winter, and others late.—Mrs. R. E. Whitmore, Chino.

Farmers at Jennings Lodge, Oregon, are appealing to the legislature for the removal of the bounty on crows, claiming they are an advantage rather than a detriment to agriculture.

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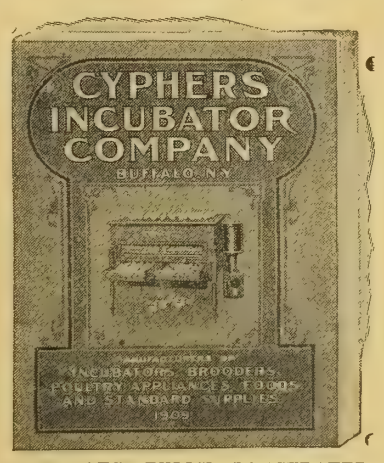
Order stock early and get advantage of best selection.

"WHAT THE POULTRY BUSINESS IS."

Five interesting chapters on poultry raising will be found in the new free annual book of Cyphers Incubator Company, Buffalo, N. Y. They cover the subjects of Feeding Chickens; Laying Records; Incubating, Brooding; and "What the Poultry Business Is." Both beginners and experts will get from these chapters valuable information they do not now possess—and one cannot know too much in and about the poultry business.

This great annual book has this year excelled all previous years in the attractive pictures it contains. Superior standard-bred farm fowls are



212 PAGES—FULLY ILLUSTRATED.

portrayed, as well as numerous prize winners at America's big shows. There are also photographs of the highest priced birds ever sold, and letters from their owners. These pictures include the five fowls sold to Madame Paderewski for $7,500.

Write today for this book. It will not cost you a cent, even for postage. Simply mail your name and address to one of the Branches of the Company (the one nearest to you) ask for the Big Book and mention the name of this paper. Address Cyphers Incubator Co., Buffalo, N. Y.; Boston, Mass.; New York City; Chicago, Ill.; Kansas City, or Oakland, Cal.

2000 EGG INCUBATOR.

Much attention is being attracted by the large incubators which the San Jose Hatchery is constructing and using here in San Jose. Each has a capacity of 2000 eggs, and is fourteen feet long by four and one-half wide. They are made after plans of inventor who has been using them with greatest success for several years. Gas is used for heating hot air tank which is inside machine. The ventilation is a special feature and is much different from that found in ordinary makes of incubators.

The manager of the hatchery, Mr. Henry Langenschwadt who operates the machines, says there is much in the kind of incubator you have to hatch your chicks, but after all a great part of success in hatching depends upon skill of man running the machine. Mr. Langenschwadt is a practical and experienced poultryman. Before he took charge of the San Jose Hatchery last fall, he spent over six months visiting poultry centers from California to Maine and made a general investigation of poultry industry.

Transformed Carbonate of Lime, the chief element of bone, is most cheaply obtained from granulated Hard Eastern Oyster Shell. Croley's Hard Eastern Oyster Shell is composed almost entirely of semi-organic carbonate of lime, easily digested and quickly assimilated by the system of the fowl. Young and growing chicks are just as much in need of carbonate of lime to make bone and feathers as the mature fowl for the prolific production of eggs. For these reasons it would be wise to insist on having Croley's Hard Eastern Oyster Shell to obtain best results.—Adv.

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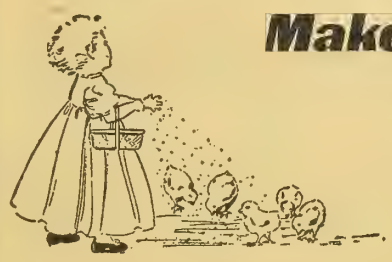

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FOR YOU TO BUY the many different articles composing Coulson's Special Dry Chick Food is quite impracticable; you could not be certain as to their quality for one thing, and the high cost of certain of them when purchased in small lots might lead to their being left out to the detriment of the chick.

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COULSON'S SPECIAL DRY CHICK FOOD can be fed exclusively to your little chicks for the first six weeks, at a cost of about four cents (4c) each; and what is of still greater importance, it will do all that can be done in the way of feed to bring them through that critical period of their lives in full health and vigor.

TO RAISE EVERY CHICK you hatch; to have fine, large, healthy chicks; to have chicks that will stand up and crow when eight weeks old; to raise chicks that you will be proud of, FEED COULSON'S SPECIAL DRY CHICK FOOD, THE LIFE SAVER.

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There are some wonderfully attractive things offered, to which we call especial attention as follows:

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Page 83 Other new Roses.

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Page 106 A great New White Dahlia (Mrs. Morse)

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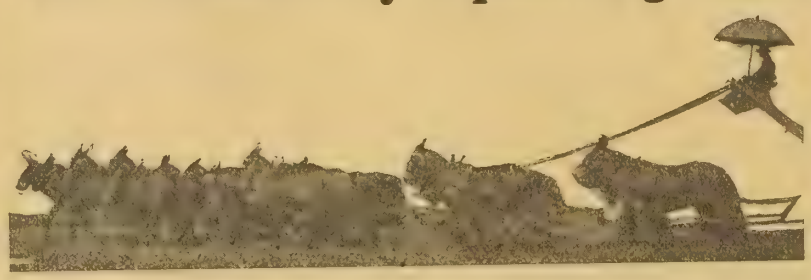

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Your team will walk from two to four miles further per day and do it easier with out urging, when using this Hitch. Your slow, lazy animals will surprise you when hitched to this EQUALIZING HITCH. Write us today for further information, Catalogue, etc.

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We Would Advise You to Use Our

This is a Fertilizer well adapted to produce a good, vigorous growth to your trees and vines, and the best quality of fruit in quantities that you desire, consequently paying you large interest on the money expended. Make a trial of this brand and you will use no other. Write for our pamphlet, ***"The Farmers' Friend,"*** for 1909.

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Superlative and other berry plants. Pedigreed stock only.
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General Agriculture

ALFALFA.

Farmers' Bulletin No. 339, entitled "Alfalfa," was recently issued by the United States Department of Agriculture. This bulletin contains a brief resume of the history and spread of alfalfa, which is followed with a rather detailed discussion of the best means of securing and maintaining a stand of alfalfa. The special features under this head are the necessity for inoculation and liming, especially in the East, and the importance of midsummer or late summer seeding to avoid the weeds of summer on one hand and the danger of winter killing which attends fall-seeded plants on the other.

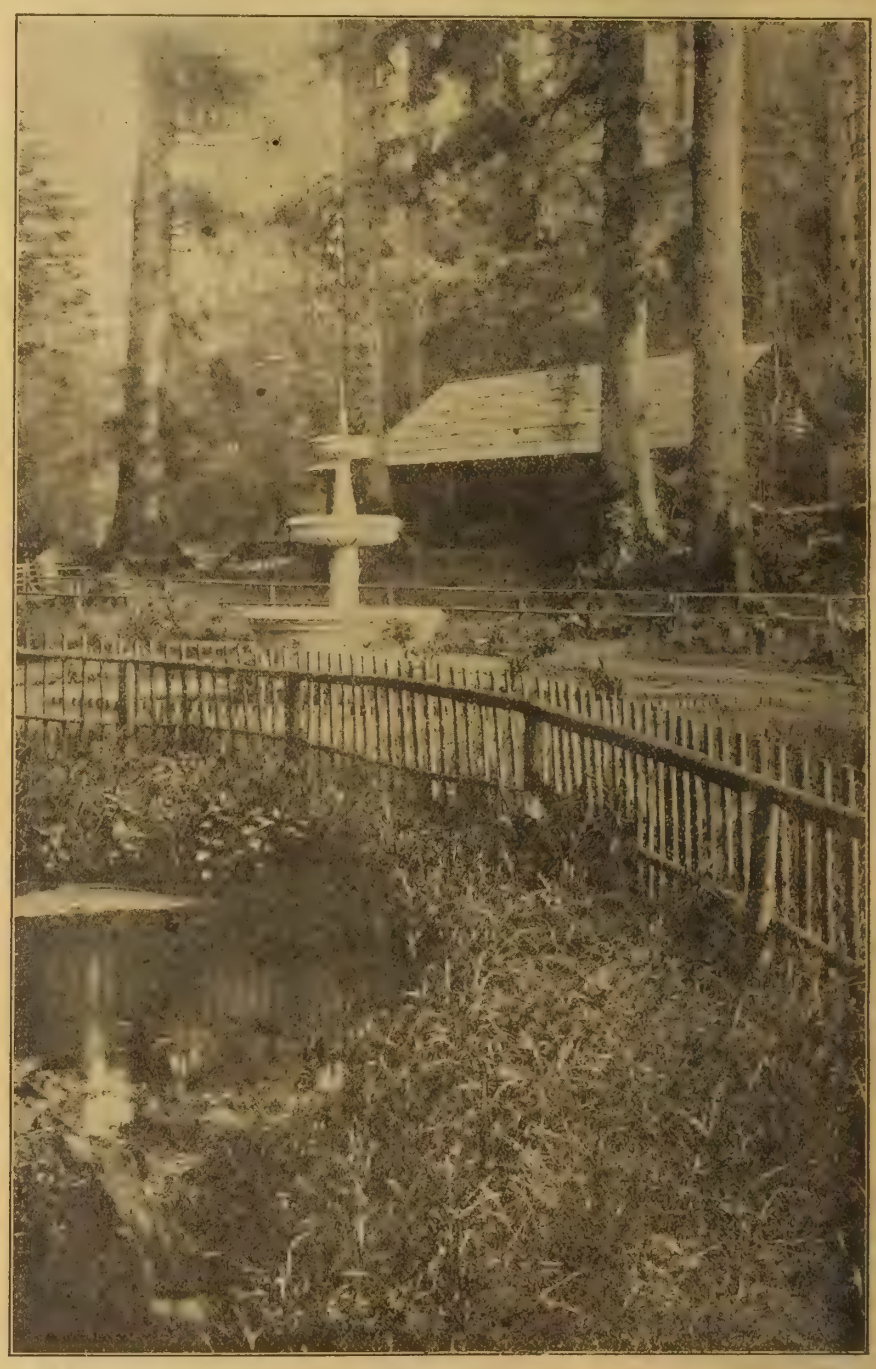
In discussing the utilization of alfalfa the relative value of the different forms in which it is used is given as well as the best methods of harvesting and preparing it in its different forms for use as feed. A brief account of alfalfa seed production and alfalfa varieties is given. The enemies of alfalfa are listed and the general methods used in combating them are briefly noted.

The wide distribution of alfalfa in this country necessitates different methods of procedure in securing a stand in the various sections. The country is divided into seven sections and specific instructions adapted to each are given separately for each section.

This bulletin is intended primarily for people who are about to undertake the production of alfalfa or who have already made unsuccessful attempts to establish it on their farms. The widespread interest at the present time in the extension of alfalfa makes this bulletin an especially timely one.

Wherever alfalfa can be successfully established it results almost immediately in doubling the value of the land. This indicates the importance of the extension of this forage crop. The production of alfalfa during the past decade has been greatly increased in many sections of the country where it had been thought impossible to produce it. It is found, however, where the necessary requirements are understood and provided for, that success, if possible, with this crop under a great diversity of conditions extended almost throughout the United States. Its production greatly facilitates the development of diversified farming so essential to the agricultural development of the country.

The bulletin is illustrated with a figure showing the common weed seeds found in alfalfa; also a figure showing the remarkable differences in the size of plants seeded at two-week intervals in the late summer and early fall, thus impressing on the farmer the advantage of seeding early for the best results. The method of baling as practiced in the alfalfa districts of the West is also illustrated.



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FREE LUMBER.

Some interesting correspondence in regard to the international aspect of the question of repealing the duty on lumber and other forest products has been given out by the National Forest Conservation League, which is taking the position that the first step in forest conservation is to repeal the tariffs which prevent American consumers from freely drawing on the forest products of other countries. This correspondence is between Senator Wm. C. Edwards, a member of the Canadian parliament, of Rockland, Ontario, and a large manufacturer of lumber and pulp in Canada, and the secretary of the League. Senator Edwards was the official representative of the Dominion at the recent Conservation Commission Conference in Washington, D. C.

From this correspondence it appears that although most manufacturers of lumber in the United States object to the repeal of the tariff on lumber, alleging inability to compete with Canadian lumber, the Canadian market has this year been flooded with American lumber, there being no Canadian duty on rough lumber, to such an extent that the Canadian manufacturers have been undersold at home and have had their market ruined. In consequence the lumbermen of Canada made an effort to have a retailiatory tariff placed on American lumber, but this agitation failed, largely, it is said, on account of the remarkable telegram sent by Senator Edwards to Sir Wilfrid Laurier. It is stated that the Canadian importations of American lumber have been chiefly low grades, competition in which, the lumbermen appearing before the Ways and Means Committee said they most feared.

Under date of Dec. 17, Senator Edwards writes to the secretary of the League:

"Recalling the promise I made to you at Washington a few days ago, I herewith enclose copy of the telegram I sent Sir Wilfrid Laurier in June last after a large deputation of lumbermen had called upon him and our minister of finance, begging for the imposition of a duty on southern pine coming from the United States, which was then and for the most of the time since, deluging our Canadian markets, produced and sold so cheaply that it has been impossible for us to compete. Hard of course for the moment on lumber producers; but a great benefit to the buyers and users of lumber.

"The ground I take is that we will win in the end. If you Americans are foolish enough to exhaust your forests, not only to supply your own wants, but ours also, our timber will grow and become more valuable in the meantime, which will result in great ultimate profit to us."

THE FARMER.

Whatever may be the ultimate uses of the products of the farm, agriculture is primarily engaged with the economical nutrition of plants and animals. Agricultural science deals with the relations of physics, chemistry, and the biological sciences to every phase of every problem that the farmer may meet in his daily work. There is ample material in the results of the investigations that have been made in any one of the many branches of agricultural science to illustrate the value of scientific study to the farmer, and to plan a long series of experiments that can be successfully carried out on any well-regulated farm.

All food for men and animals is directly or indirectly the product of vegetable life. Therefore, before the nutrition of animals and men can be achieved to the best advantage, a thorough acquaintance with the laws governing the nutrition of plants is necessary. For the successful production of any plant an abundant supply of every kind of food necessary for its growth must be present in a readily available form in the soil or in the air. It is just as impossible to grow plants in a soil containing only available nitrogen and potash, or lime and phosphoric acid, or silica and iron, as it is for a carpenter to build a modern frame house with only window glass and nails, or with only boards and mortar. It is just as useless to expect a plant to thrive in a soil deficient in potash, even though abundantly manured with nitrogen and phosphoric acid, as it is to expect the carpenter to build the house with a million feet of lumber and no nails. It is quite as futile to attempt to feed a plant nitrogen in the form of coarse leather scrap as it would be to furnish the carpenter the iron he is to use for nails in the form of pig iron. In brief, every vegetable structure is made up of certain indispensable chemical elements, which must be accessible in available form throughout the period of its growth. It is one of the most important duties of the agricultural scientist to learn what these indispensable elements are and how most economically to supply them in highly available form to growing plants.

The preparation, or rendering available, of plant food for the growing crop is just as important as is the preparation of food for human beings. —Prof. Ervin E. Ewell in Yearbook of the Dept. of Agriculture.

RHODE ISLAND OYSTER FARMS.

Oyster cultivation in Rhode Island is a big industry prosecuted in a big way, and it is an industry that gives excellent promise of becoming more important to the state than any other, for in it hundreds of thousands of dollars have been invested; invested not from a speculative motive but from a wise appreciation of the tremendous advantages of Rhode Island as an oyster producing state.

To all intents and purposes Narragansett Bay is one huge oyster farm, over 15,000 acres of its waters being under cultivation. It seems impossible for the layman, traveling over the bay's expansive waters on summer excursion or business trip, to realize that from twenty to fifty feet under the surface of the waves which hurl themselves against the steamer's prow there are laid out in mechanical regularity farms as large or larger than any of those on shore.

A Rhode Island oyster farm ranges in size from the one of two or three acres to that of many hundreds.— December National Magazine.

GOOD SUGGESTIONS.

Fruit trees should be planted in the poultry runs. Fowls take naturally to the woods and brush, and find there much insect food that is good for them and injurious to the trees. Apple, mulberry, pear, plum and cherry trees, if soil and location are suitable, may be planted in the poultry yard, and the profit from the fruit should almost equal that from the hens, thus giving best results from the ground occupied.

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gives Genasco the life that makes it resist the weather and last for years.

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doesn't crack, rot, rust or break. How long do you suppose roofing lasts that's made of—who can tell?

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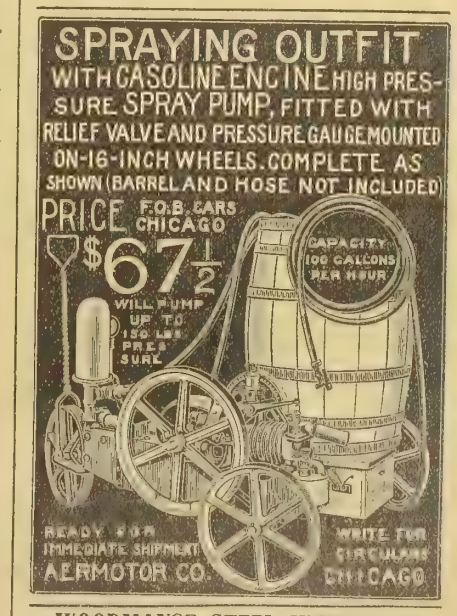
300,000 Feet Water Pipe Cheap

ALL SIZES

150,000 feet of this shipment is second-hand pipe, practically as good as new, and is now on sale at a big discount by the Adams Pipe Works, 2025 Bay street. Sizes and prices: ¾-inch 2 cents per foot; ⅝-inch, 2 cents per foot; ½-inch, 2¼ cents per foot; ¾-inch, 3 cents per foot, 1-inch, 4¾ cents per foot; 1¼-inch, 6 cents per foot; 1½-inch, 7 cents per foot; 2-inch, 9¾ cents per foot; 2½-inch, 15 cents per foot; 3-inch, 19 cents per foot; 3½-inch, 24½ cents per foot; 4-inch, 30 cents per foot.

Oil well casing prices and sizes: 2-inch. O. D. 7 cents per foot; 2-inch, I. D. 9 cents per foot; 3-inch, 13½ cents per foot; 3¼-inch, 16 cents per foot; 3½-inch, 17 cents per foot; 4-inch, 20 cents per foot. All pipe is carefully inspected, new couplings and new thread are put on every piece, every joint is guaranteed to be first class, serviceable pipe. Mail orders promptly filled. To reach the Adams Pipe Works in Los Angeles, take car marked Pacific Boulevard, starting east on Seventh street from Broadway. Ask conductor to let you off at Bay street and go east half a block. Phones, F1917, Broadway 1264.



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The strongest and best ever produced in America, it precedes all others in pumping. A full line of repairs for all style mills kept on hand. Look up your agent in your location for Woodmanse mills. If you have no agent write direct and I will gladly answer all correspondence and send circulars.

F. H. OSLER Southern Cal. Agent Pomona, Cal.

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POTASH

is the surest standby in securing big yields of

GRAPES

of the finest quality which command the highest market prices. Potash meets the heavy demands of this fruit upon the soil, produces grapes of better color and finer flavor and improves the shipping qualities. Experience proves that

Potash is Profit

See that your commercial fertilizer is complete in Potash—not less than 10% of *any* formula.

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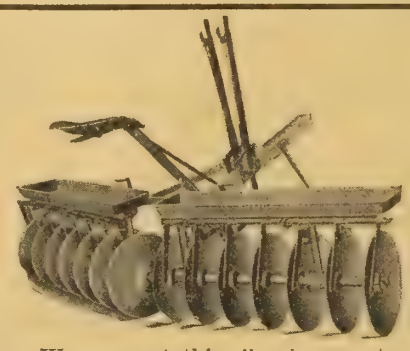

Racine Sattlery Company's

New Governor Disc Harrow

We warrant this disc harrow to do as good or better work than any disc harrow on the market!! Pretty strong, eh? But this disc harrow is worth it and more too. Nothing better can be manufactured. Heavy forged steel frame. Extra strong bearings. Patented spring steel scraper attachment. Especially ground and sharpened discs. Double Lever.

10-18 inch Disc—5-foot cut. Complete with pole and 3-Horse Equalizer $36.00
12-20 inch Discs—6-foot cut. Complete with pole and 3-Horse Equalizer 40.00
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Send us an order at once. If we get your order by Feb. 20th, we will pay the freight charges to any point within 75 miles of Los Angeles. Address

SOUTHWEST SUPPLY CO.
127 South Los Angeles Street, Los Angeles, California
Exclusive Agents for the Celebrated Racine-Sattlery Line.

Big Brand
Animal Matter Fertilizers
Grow Big Crops

The Pacific Big Brands are especially adapted to California soils and consist entirely of High Grade Meat Tankage, Blood and Bone produced in our four large packing houses at Chicago, Kansas City, South St. Joe and East St. Louis. Try them and get results. Further particulars cheerfully furnished.

Morris & Company
307 Central Bldg., Los Angeles, Cal.

The Seed House of the Great Southwest

Have just issued a new booklet on Casabas, illustrated in natural colors, It is free; write for it. Also ask for circular on Peanut Culture. If you have not yet received their 1909 catalog, ask for it. **Aggeler & Musser Seed Co.** 113-115 N. Main St., Los Angeles, Cal.

ENCINAL NURSERIES

SPECIALTIES: Franquette Walnut, grafted on Black Walnut root. Absolutely genuine.

Wonder Walnut.—New: The largest, most prolific, and youngest bearer known. Twelve nuts grown on a **one year graft** in nursery row, placed side by side, measure 22 inches; each measuring 5½ to 6½ inches in circumference. Thin shell, blight resistant. Fully tested for years. Limited stock of grafting wood and trees for sale.

F. C. WILLSON, Prop. Sunnyvale, Santa Clara County, Cal. Tel. 171

Imperial valley shipments of asparagus, it is announced, will be ready for distribution by the middle of the month.

About 600 cars of celery are now ready for market in Orange county. The warm rains have caused some blight.

Small Fruits and Vegetables

PLANTING AND CARE OF TOMATOES.

THE following interesting paper was read by H. E. Hart at La Habra Farmers' Institute:

I find that the growing of winter tomatoes requires much more care and study than I was led to believe before I began to grow them.

Seed.

The first thing is good seed. Stone's Improved Winter Tomato is what has given us the best satisfaction.

We plant the seed at two different times, first planting about the m. of April and later about the first of May, so that if we fail to get a good stand the first setting we will have plants to fill in later. We grow the plants as fast as possible with water and cultivation until about three weeks before we wish to set the plants out, and give them no water or care the last few weeks before we are ready to set. Our object is to harden the main stem of the plant so it will not lop over after we set it out. My experience is that if the plants wilt very much many of them get sunburned and die.

Setting.

We aim to set out our plants about the first of July. They should be from 8 to 10 inches high and about as large as a common lead pencil, the more stocky the plant the more sure you are to have them grow. I never set a small plant of any kind in this country if I can help it. Tomato plants do well with us even if they are in blossom when set.

Have had quite a little trouble with our seed bed, with what is called "damping off," that is, the plants seem to stop growing and die after they are an inch or two high. Have had the best results against this disease by covering my seed bed quite thickly with unbleached wood ashes before the plants were up. Have ruined my plants twice by putting the ashes on the plants after they were up; have never lost any when I sowed the ashes on the bed and let the plants come through them.

The plants do much better to have the land dry when you take them up and almost have to grub them out, than to have the land so wet you could pull them up. When the plants are taken out dry, the minute the moisture touches the roots they begin to freshen up, instead of wilting and lopping over. Have had the best success in getting a good stand by setting the plants in the furrow while the water is running. I think the rows should be 8 feet apart and the plants 4 feet in the row. I set the plants on the opposite side from the furrow turned, so that I can turn the furrow back onto the roots of the tomato plant and by so doing I can work the land and around the plant a day or two sooner than I could otherwise. I set the plants quite deep—nearly up to the first leaves—and never take the tops of the plants off.

Irrigating.

I think two irrigations, if you do a good job, is a plenty. I irrigated my tomatoes last year three times after setting, once after I began to pick them. Am sure they got too much water too late in the season.

I strive to have the vines as large as possible before the cold nights come along, and as much fruit as I can grow. The fruit will mature and ripen when it is pretty cold if the vines are large; it seems to protect itself, but a late small plant I never have been satisfied with in the winter.

Picking.

We will suppose the crop is nearly ready to begin picking; don't wait too long, go over them often if there is not too much of a picking, for pretty soon they will come with a rush and you do not want any over-ripe tomatoes on the vines. Just shippers you are after. Of course we grow our winter tomatoes for the eastern markets, but there will always be some that are not shippers. We have found the Los Angeles market pays us better than to send them to the cannery. Have never taken less than 15 cents per box, and that but once, which is about $10 per ton, as against $7 per ton at the cannery. Have received as high as $1.60 per box.

Our experience has been in shipping to Los Angeles it is best to put them up in as attractive shape as possible as to size and ripeness. Received quite a little more last year from the Los Angeles market than I did from the Vegetable Union.

Now as to the cultivation of my tomatoes, they have received two or three cultivations after each irrigation and been hoed twice.

PEANUT RAISING.

Many methods of planting are successful; perhaps the one most generally used is to plant in rows two and one half to three feet apart, with one seed every twelve inches in the row. Clean cultivation should be given as often as necessary to keep down the weeds and preserve a loose surface. Sometimes the rows are hilled up, forming ridges, but this plan does not usually result in greater yields than where level culture is given. If the crop is planted for hog pasture, the hogs may be permitted to do the work of harvesting after the pods are nearly mature. While hogs do not eat the vines readily, they are very fond of the nuts, and every hog grower should have a patch of peanuts to add to the variety of food for the hogs. If the crop is prepared for market the harvesting should be done before frost. For rapid work an implement with a cutter to run beneath the plants, cut off the tap roots and loosen the soil is necessary. The loosened vines with peanuts attached should be forked into windrows, and when partially dry placed in small bunches or stacks. If the crop is to remain long in the field, the stacks should be covered with straw or hay to keep out the rain. Where only a small acreage is grown, the peanuts may be picked by hand, but where grown on a commercial scale a peanut thresher is essential. The peanut straw, if in good condition, has considerable feeding value for cattle and is an important feature of the crop. While it is doubtful if many farmers would find peanut growing profitable on a large scale, it is certain that many could grow a small acreage to advantage.—Journal of Agriculture.

North Yakima, Washington, is planning to make an immense display of honey at the Alaska-Yukon Fair next summer.

Wood ashes applied to stiff clay soils have a fine effect upon orchard land.

The Ornamental Garden

PLANTING SPRING BULBS.

(Continued from Last Week.)

Shelter From Winds.

Bulbous plants are peculiarly susceptible to dwarfing by cold winds. A wind screen will double the height in many cases and in cut flowers length of stem is very essential. Always study this when planting them.

Soil.

My practice and observation coincide in making me think that they can be made to thrive in almost any medium soil. At the same time there is an element of experiment in planting them in untried soils and it is well to stay on the safe side. What we know here as a river loam is the best of all. That is a soil made up of about two-thirds sand to one-third clay silt. To this add about one-eighth of well-rotted cow manure and you have a soil pretty sure to give good results. At San Francisco the mixture of clay with the ocean sand and manure gives the same compound. The soil in Holland is as near as possible such a compound. There they fertilize heavily with well-rotted manure and then plant a crop of potatoes to take the strength away. Almost any California garden has old soil of almost this identical composition.

Drainage.

This must be perfect. If necessary put a layer of broken bricks or gravel under the beds. A soil that stays wet or soggy will never give good results in Tulips or Hyacinths although Narcissus will grow well in swampy soils.

Depth to Plant.—Barr, the celebrated Daffodil specialist, gives this rule: Plant one and a half times the height of the bulb. That is, put that much soil over it.

Protection From Gophers and Other Rodents.

Rodents will not touch Daffodils, but greatly like Tulips and Hyacinths. If they are troublesome about the place it will be safer to make a box of two-inch redwood planks to plant them in. This can be set into the ground so as to appear as an ordinary bed. It should be lined on the bottom with some porous material and have soil about ten inches deep. It is a very satisfactory arrangement.

Distance Apart.

This depends almost entirely upon the size. If the bulbs are lifted and reset each year, twice the diameter will do. If they are to remain longer, a space four times the diameter should intervene.

Digging Up and Keeping.

In case you have a bed which is well made and where it need not be watered during the midsummer, it need not be lifted for three years. By that time the formation of new bulbs and the exhaustion of the soil will make a move necessary. I would, however, advise that Tulips and Hyacinths be dug every year as soon as the leaves die down, that they be stored in a cool, dry place without any packing material and be replanted in August and September. By so doing much risk from rot, rodents and overwatering is avoided.

It is not so easy to give a rule for lifting Daffodils. In damp soils Daffodils hardly ever become quite dormant. Some varieties are injured by being taken up every year. The finest flowers will be had from masses of Poet's Narcissus which have been undisturbed two or three years. By the third year the offsets will begin to crowd and the bulbs are better lifted and reset.

Varieties.

This is too large a question for the space. In Narcissus the variety is wonderful. I would strongly recommend growers to try many of the less common sorts. By all means grow the Late and Darwin Tulips, and also Gesneriana. They are superb cut flowers. I prefer singles of all classes.

The very largest Hyacinth bulbs are apt to produce several not overly large trusses. A very compact, medium-sized bulb will give a single, fine stem and be more satisfactory. Buy named varieties. Neither the best varieties nor the best bulbs can be had in unnamed sorts. Fine Hyacinth bulbs are never cheap.—Carl Purdy.

LITTER ABOUT THE GROUNDS.

Then the general litter which clutters our grounds demands attention. There are the dead leaves and the broken weeds which have long been wafted about by the winds until at last they have secured temporary lodgment in some sheltered spot. There are the decayed limbs which have fallen from the trees or even the living ones which have been torn off by unfriendly gales. There are the shingles which have become loosened from the roof and scattered about. There are the ever present pieces of waste paper which are perpetually blown hither and thither. All these and many more conspire to destroy the beauty of our grounds. Each spring, in accordance with the usual custom, there is a general cleaning up when the grounds are gone over carefully with a rake and all the collected litter is consumed with fire. This is a most commendable practice, and its adoption should be urged upon all those who are not devotees of this spring out-of-door- cleaning. Then the grounds may stand in need of cleaning at other seasons. For a limb is liable to fall from a tree, waste paper is quite likely to be blown from the house or from other parts of the grounds, the dogs can be expected to bring in bones and pieces of wood in their frolics and the children may possibly clutter up the grounds in their play. So perpetual vigilance is required to keep our grounds free from litter, though no very great amount of labor is necessitated by this careful maintenance.

Sow pansy seeds and transplant those started last month into prepared beds. Have the cold frames ready for them.

IN THE YARD AND LAWN.

Lawns need watching this month, and attention should be paid to the old leaves and rubbish, which makes the yard look so untidy. Hedges should be trimmed. If you prune your shrubs and roses now, early flowers will result. It is the right time to set out rose plants. By sowing your lawn now with seed of Blue grass, a beautiful green growth will be kept up during the period when Bermuda is unsightly.

"I am the rain!
And I come as I will,
To vale and to hill,
Patter loudly or still—
Never in vain."

Six of the Most Valuable
New Fruits
Ever Introduced in California

"Improved French" Prune Originated by Luther Burbank

"Concord" Walnut French Variety
Grafted trees only. Better than Franquette or Mayette

"Paul" Cherry Finest Black Cherry

"Philippi" Grape Handsomer than Tokay; a month earlier. Disinfected cuttings only, to comply with quarantine laws.

All these, like Muir, Lovell, and Phillips Cling Peach, are of California origin.

"Comet" Red Currant Much larger, earlier and sweeter than any other.

"May Duke" Gooseberry
Earliest of all; large; smooth skin.

Write for Further Particulars.

EUCALYPTUS TREES by the 1000 or 100,000. No stronger stock; grown in the open, without lath shade or screen, therefore hardened to all weather.

GENERAL NURSERY STOCK

Leonard Coates Nursery Co., Inc.
EST. 1878. INC. 1905.
Morganhill, Santa Clara County, Cal.

Cal. Giant Sweet Peas

All the Best Hybrids, all the Colors. 5c per oz.; 50c per pound postpaid.

Hopkins Tested Seeds

Everything for the Flower and Kitchen Garden. Generous packages 6 for 25c, 13 for 50c, 30 for $1.00, postpaid.

Berry Plants

Strawberry, Raspberry, Blackberry, Dewberry, Loganberry, Phenomenal berry and Mammoth Blackberry plants.

Be sure and send for Catalogs.

Hopkins Seed & Plant Co.
Burbank, California

THE "BOSS" Tree Protecter
Made of Yucca Palm

Is cheap, durable and quickly put on the tree. It prevents Rabbits from destroying your trees. A sure protection against frost, sun-burn, grasshoppers or dry winds. Can be easily removed; will last for years.
Send for samples.

Prices

12 inch long,	$ 9.00	per 1000
14 inch long,	10.00	per 1000
16 inch long,	11.25	per 1000
18 inch long,	12.50	per 1000
24 inch long,	15.00	per 1000
30 inch long,	17.50	per 1000

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Fresh Field and Garden Seeds
Seed Potatoes, Onion Sets, Garlic, Etc.
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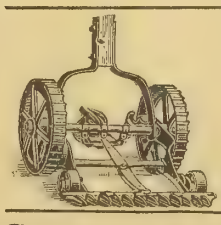
Seed Merchants.
507 N. Main St., Los Angeles, Cal.
18 Years in business.



THE CLIPPER
Will cut tall grass and weeds and do all the trimming along the walks and drives.
Your dealer should have them—if he has not drop us a line and we will send circulars and prices.
Clipper Lawn Mower Co.
Dixon, Illinois.

Stewart Bros. Nursery
First-class Fruit and Ornamental Trees. A large assortment on hand. Order early while we have plenty of select stock.
712 So. Spring Street, Los Angeles

Strawberry Plants

February is the best month of the year for setting ***Strawberry Plants.***

GROWER OF STRAWBERRY PLANTS ONLY

I have the ***Best.*** Price $2.50 per 1000. Write for ***my*** price on lots of 10,000 or more.

E. H. Learned, Tropico, Cal.
Mail Address, R. F. D. No. 5, Los Angeles

Nitrate of Soda

Doubles the Yield of Barley

Test it for Yourself Entirely Free

Let us send sufficient Nitrate of Soda for you to try, asking only that you use according to our directions, and let us know the result. To the twenty-five farmers who get the best results, we offer, as a prize, Prof. Voorhees' most valuable book on fertilizers, their composition, and how to use for different crops. Handsomely bound, 327 pages.

Apply at once for Nitrate of Soda by post-card, *as this offer is necessarily limited.* "Grass Growing for Profit," another book of useful information, will be sent free to farmers while the present edition lasts, if paper is mentioned in which this advertisement is seen.

Send name and complete address on post-card

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Nitrate of Soda for Fertilizing

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24 California St. San Francisco, Cal.

Warehouse Stocks Carried at San Francisco

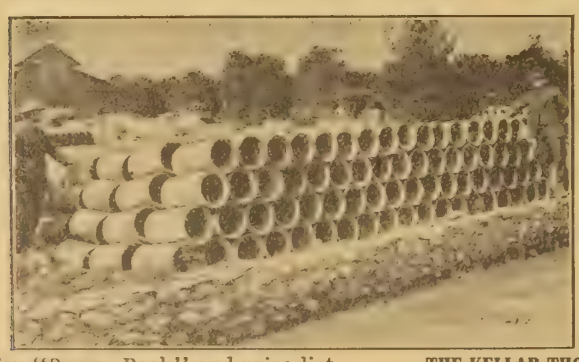
Malthoid Roofing

Mr. C. H. Wagner, Gen. Mgr. Russ Lumber Co., San Diego, Cal., U. S. A., writes as follows: "A fire occured during the night of August 17th and was not discovered until morning. Blaze had died out as the roofing would not ignite. This roof is covered with your Malthoid Roofing. We consider that the resistance of the Malthoid Roofing stopped the blaze and saved the plant."

The Paraffine Paint Co.

San Francisco California

E. G. Judah, General Representative, Security Bldg, Los Angeles



From photograph showing amount of

Ten-Inch Pipe

made by four men from 10 bbls. of cement in 9 hours — 280 two-foot joints, or 560 feet. This pipe was made with the

"K T" Moulds

An equal amount can not be made with any other tools in the same period of time. Write for "Brown Book" and price list.

THE KELLAR-THOMASON MFG. CO., Covina, Cal.

1-2 Million Eucalyptus Trees In Variety

Transplanted in flats of 100 each. We prefer orders of 1000 rather than 10,000; outside limit 20,000. Our trees are of the highest standard in quality. Correspondence invited. Our Booklet telling when, how, and what to plant free to our patrons only. Address

W. A. T. STRATTON, Nurseryman, Petaluma, Cal.

SECOND HAND PIPE

We will sell you pipe that can be used for any purpose. ***Satisfaction guaranteed*** or money returned. We handle all sizes of standard pipe and casing. Shipments made on same day as order is received. Price of pipe is low now. Write for our prices.

Pacific Pipe Company

S. W. Corner Howard and Main Streets, San Francisco, California

Irrigation and Forestry

THE EUCALYPTUS.

The following was written by H. A. Green of the Tin Can Club of Monterey for the New Era of that city and as he says may contain "useful hunches" to those who have little experience with this valuable tree.

Fuel Problem.

It seems evident that the eucalypts are to solve the fuel-wood problem of California, and could be made to do so for other localities possessing a mild climate.

The subject of growing eucalypts is receiving much attention at this time, and literature regarding it is sought for by many. The object of this article is to convey some useful "hunches" to persons contemplating growing this wonderful tree.

The planting of eucalyptus in this country commenced in California in the early seventies, and resulted in a number of fine eucalyptus groves, from which we have derived a knowledge of the tree, its habits, requirements, etc.

Notwithstanding the fact that the individual who causes trees to be planted is a public benefactor, his name is quickly lost sight of. It seems to me that persons, individually or collectively, causing trees to be planted in parks, highways, streets or private grounds should have their names suitably inscribed, so that future generations may know to whom they are indebted for the pleasures, comforts and benefits derived therefrom. Then raise your hat to the worthy citizens accountable for the eucalyptus plantations in California.

Of the 150 species of the genus eucalyptus identified by botanists, only a few of them are recommended for general planting; among them, giving their common names, are gray, blue, red, lemon, sugar and manna gums.

It Warps.

We hear a complaint made that the eucalyptus timber warps and checks too easily, yet it is no worse than maple or other hard woods seasoned by the million feet in the Eastern states. Eucalyptus sawlogs should be manufactured as soon as possible after cutting, and not be exposed to the wind or sun. If logs intended for lumber must be held, paint the ends and pile them in the shade without removing the bark.

Finest Hard Wood.

Unfortunately we have no hard wood timber growing on the Pacific coast in commerical quantities except eucalyptus, and some of them posess qualities similar to the eastern hickory and ash. At this time eucalyptus lumber is worth from $100 to $150 per thousand, a much lower figure than other hardwoods bring. A large tree which will produce from four to six cords of wood, will cut into from 1500 to 3000 feet, b. m., making such a tree worth from $12 to $25 to the grower as stumpage under present conditions. Blue gum pile timbers are now selling from $5 to $15 apiece on the stump.

Estimated Returns.

To give an idea as to returns which may be expected from an eucalyptus plantation venture, a few figures, taken from actual experience, may be interesting to the reader. Cost of preparing land and planting trees, about $20 per acre. Returns from fuel wood in 8 or 9 years, 50 to 60 cords (Californian.) or 96 cubic feet. When 25 years old the trees should produce about 28,000 feet of merchantable lumber per acre. After cutting for lumber the second growth should yield at least 100 cords (Cal.) per acre in five years.

Globulus Best.

It would seem that the blue gum is best for general planting. While the gray and red gums will stand more cold, it is not advisable to attempt to grow them where the temperature drops below 22 degrees F. The manna is a rapid grower, but its timber is neither strong nor durable. The red gum thrives in swampy places and makes durable lumber, although it is inclined to be brittle and crooked. The sugar gum is believed to produce the best poles and ties. When grown on arid land its timber is stronger than the others mentioned. The gray gum is a rapid grower and furnishes timber of average strength and durability. The lemon gum has a straight stem and is more particularly recommended as an ornamental tree.

Good for the Dog.

Having in mind the experiences of a neighbor who carefully planted the whole cones or strobiles of an eucalyptus tree without satisfactory results, and another who actually was in the habit of pulling up cuttings which she had planted, to administer punishment to an unruly dog, then returning the plant to the ground, expressed herself as being unlucky in trying to grow trees, I will presume that some of my readers may require some detail in instructions as to how to raise eucalyptus.

The seed can be obtained from almost any seed firm, but for persons in California, where mature trees are so common, I advise them to gather their own seed, unless they intend to plant on a large scale. The ripe cones containing seed will be found on the lower branches. Only take those without holes in the caps and which are a brown color. By subjecting the cones to the sun for a few days they will release their seeds, which are of irregular shape, black and imbedded in yellowish chaff. It is not necessary to separate this chaff from the seed in planting. Place about four inches of loose soil in a box and level it off evenly, then sprinkle the seed over the surface. Now press down firmly using a flat block.

Over the smooth surface sift about an eighth of an inch of coarse, clean sand. In order to better retain moisture and also to prevent "damping off," scatter a thin layer of sawdust or, better still, pulverized horse manure when dried. A good soaking with water is the next thing to be done. Use a small watering pot or can perforated with small holes, for the seed must not be disturbed. Put box in warm sheltered place and after a week watch for the baby trees to push through.

Transplant.

When your plants are about three inches high remove them in tin cans properly drained with large holes in their bottoms and filled with good earth that will not pack hard. Use a table knife to transfer the seedlings and do not expose their roots. Place your cans in some protected spot and partially shade the trees, for the h

(Continued on Page 143.)

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Budding Cloth.

In your issue of January 7 you gave a formula for making budding cloth. How is it used? Would the wax formula do for grafting? And is this cloth good for wrapping around the ends of limbs after grafting?—T. J. F., Fair Oaks.

This budding cloth is used for tying buds after the process of budding. It is used in strips about three-quarters of an inch wide and wrapped over the inserted bud immediately after it is cut and placed in position. The wax which is used in making this cloth is practically the same as that used for grafting. We have seen the cloth used to cover the end after grafting, but as a rule the application of the wax direct to the wood is preferred.

Concrete Tank.

I wish to build tank stand for water, say 15 feet high, on top of which I want to build a cement tank of 4000 gallons capacity. How thick should the walls of each be and what proportion should the concrete and cement be?—Inquirer, Riverside.

We do not fully understand what the inquirer wishes to know, but if we get the right idea he wishes to build a stand 15 feet high on top of which a 4000-gallon tank is to be constructed. Such a structure of reinforced concrete would be very expensive, vastly more so in fact than a tank made of redwood staves supported on timbers. Such a structure, especially when reinforcing is done, should be done under the supervision of one versed in handling reinforced structures. So far as the strength of cement is concerned the ordinary formula for a good strong cement is 1:3:6, though if used where an exceptionally strong mixture is desired, the 1:2:4 formula is safer. By 1:2:4 we mean one part good Portland cement, two parts coarse sand, and four parts of the stone or clean, coarse gravel. The principle on which reinforced concrete works is that the steel bars or wires which are used in the reinforcing are to take up the tension while the concrete if well made will stand any amount of compression. The discussion of its problems are not such as the Cultivator is fitted to handle even if it were profitable to subscribers. We believe a wrong impression has been given as to the cheapness of concrete construction by the widely published plan of Mr. Edison that patterns for concrete houses could be made so as to immensely cheapen construction of common houses for laborers who have little means. This may be brought about in the future, but at present concrete construction, especially if reinforced, is vastly more expensive than lumber.

Commercial Fertilizer.

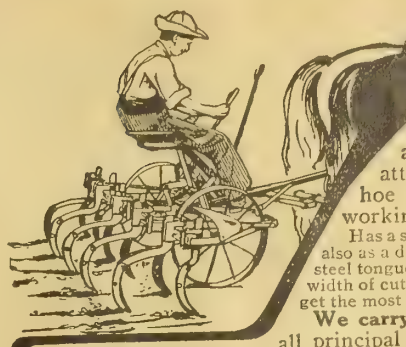
Please advise me what kind of commercial fertilizer is best on a market garden? Is nitrate of soda better than a complete high-grade fertilizer, and what is the after effect on the ground? Would the soil be less productive the next season if fertilizer is used? Where can I get nitrate of soda in Southern California? Will commercial fertilizer pay on dry land with 15 inches of rainfall?—H. F., Ontario.

Without knowledge of the present condition of your soil or the kind of crop you wish to grow, it is impossible to give definite information. This is especially true as to your question whether nitrate of soda is better than complete high-grade fertilizer. Ordinarily we would say decidedly no. That is, you must bear in mind that nitrate of soda contains only one of the elements needed by plants and of that only about 16 per cent. The balance is material which is of no value to you. It does at times, however, have a wonderfully stimulating effect on plants which are in need of immediate help and has been used with great profit. With the information which you have given us we should say decidedly to use the complete fertilizer. This will not contain the percentage of nitrogen which the nitrate of soda does, but will at the same time contain both phosphoric acid and potash in sufficient quantity to insure any ordinary crop. We would not care to risk any very heavy fertilization on soil which is not provided with irrigation. That is, fertilizing with commercial fertilizer is extremely expensive and without irrigation you are at the mercy of weather conditions. In case of failure to meet the conditions required for the crop your application for fertilizer would be largely lost. The application of fertilizer, however, could hardly make soil less productive the first season after its use. That is, excepting in this way: For instance you make a liberal application of gypsum to your soil, in itself containing no fertility whatever, but having a chemical action upon the soil which releases plant nutriment. The use of this substance would consequently reduce the actual plant nutriment in the soil. Nitrate of soda may be secured by addressing Holcombe Co., 24 California St., San Francisco, or of Balfour Guthrie Company, Los Angeles.

Rhubarb.

Is there good profit in growing rhubarb? Where is best all-season market for large or small quantities? What is best variety?—J. G., Fullerton.

There has been large profit made on many fields of rhubarb, also some have planted who have not secured satisfactory returns. The Crimson Winter, in a section which is not affected with too low a temperature, has produced a crop which has come in at a time of good demand. The ordinary rhubarb which comes in with its principal production in the springtime would not prove so profitable, we think, in your section. As to market, the present time is to a certain extent similar to the period which an Eastern farmer would say is "between hay and grass." That is, the production has not yet reached a stage of sufficient quantity to make a staple and regular supply for the Eastern trade and is at times rather heavy for local demands. There have, however, been single car-load shipments to Eastern markets which have proved exceedingly profitable. It has been claimed that this product could



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FOR SALE—160 ACRES OF RICH virgin sandy loam land, 9 miles S. W. of Mendota, Fresno Co. Cleared and leveled. Unlimited pumping water. Land $20; with water $30. Free from alkali, hardpan and washes. This is your chance to get land with water worth $150 for one-fifth that price. J. E. FARNHAM, owner, Hollywood, Cal.

I make a specialty of orange and alfalfa ranches, and exchanges. 826 MAIN St., ROOM 9, Riverside, Cal.. N. R. BELL.

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CLEARING UP PRICES ON ALL kinds of berry plants, pear on quince root, and nursery stock. State your wants. Wanted, Burger and Val de Penas grape cuttings. TRIBBLE BROS., Elk Grove, Cal.

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FOR SALE—CALIFORNIA BLACK walnut seed in sack lots. Wanted: Mayette, Franquette and Parisienne Walnut scions, also Rupestris St. George, Rip. x Cord. x Rup. 106-8, Rip. x Rup. 3306 and 3309 cuttings, grafting size. Address FANCHER CREEK NURSERIES, Fresno, Cal.

FOR SALE—THREE POUNDS CHOICE pineapple cantaloupe seed at a bargain. WM. KELLOW, San Gabriel, Cal.

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WANTED—A FEW THOUSAND MUScat, Thompson Seedless, and Malaga well rooted vines. IMPERIAL VALLEY NURSERIES, El Centro, Cal.

be made to net $800 per acre. To secure any such returns of course right market conditions, with fertile land and good output are necessary. What the future will develop as to this crop no one can positively predict, although many growers are very enthusiastic and planting heavily because of their belief in the demand for all that California can possibly produce. We would not advise depending entirely on local market. There are times when its returns are exceedingly good. There are other times when it is just the reverse, and this uncertainty is not desirable where one plants a crop which is not an annual. It is possible you can get information as to whether contracts will be made, by writing the Phalanx Company of Los Angeles, which is organized for the purpose of marketing this crop.

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FOR SALE—WHITE WYANDOTTES, Hayes "Bred to Lay" strain. Eggs for setting, $1.50 and $2 per 15, $6 to $8 per hundred. Hens, $1.50 to $3; cocks, $3 to $5; trios, $6 to $10. Discount of 25 per cent. on hens and pullets in lots of 50 or more. Write for particulars. F. E. JUDSON, Carson Heights Ranch, San Pasqual Valley, Escondido, Cal.

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FIFTY MAMMOTH BRONZE IMported gobblers for sale at $5.00 each. For particulars address J. R. SNEAD, Dixon, Cal.

BRONZE TURKEYS, COCKERELS from first cock and first hen at Petaluma. For prices write H. J. SHOW, R. 1, Santa Barbara, Cal.

PRIZE - WINNING WHITE MINORCAS. Eggs for setting, $2 for 15; $3 for 30; $6 per hundred, f.o.b. express. C. S. LANE, Santa Barbara, Cal.

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RHODE ISLAND RED EGGS FOR hatching. Fertility guaranteed. $1.50 per 13; $7.00 per hundred. SCOTT WILSON, Altadena, Cal.

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Pruning Raspberries.

How shall I prune my raspberries? They were planted last winter and pruned about 2½ feet above the ground once during the summer. They are the Surprise. How and when shall I prune blackberries? What is the rent for berry ground with pumping plant furnished?—Subscriber.

Cut all the raspberrry canes back to 2½ feet and thin out the weakest ones—allowing four to six canes to the hill. Blackberries should be pruned now. Select five or six of the strongest stocks and cut out all others. Cut back the ones to be saved to about three feet and if they have laterals, cut them (the laterals) back to about one foot.

I know of no uniform rate of rental. The Japs in this neighborhood offer from 30 to 40 dollars per acre, annual rent and pay the usual rate for water besides. That price is entirely too high from the growers' standpoint, and only the Jap can afford to pay it, which he sometimes does by disappearing on the day of final settlement. I should consider $25 per acre, with pumping plant furnished and the tenant to pay cost of running the plant, about all the business would justify.—Q. A. L.

Deciduous Gum Disease.

The bark of the trunk and some of the heavy limbs of my peach trees seems to split partly open and sends out a dark brown or black gum, which gathers in lumps. The disease is in young trees and works most in rainy weather. It seems to start near buildings and fences and works into the orchard. I spray twice a year with Bordeaux mixture. What is the disease and what is to be done?—L. J., Selma.

To which Prof. Ralph E. Smith of the Southern California Pathological Laboratory gives the following answer:

"I can only say that this is some form of gum disease, but the latter expression is a very general one. Peaches and the other stone fruit trees develop this gumming condition from a great variety of causes. The gumming simply shows that there is something the matter with the tree but nothing as to the specific cause. The indications in this case are that there is something wrong under ground in the conditions affecting the root. There are sections in your correspondent's part of the State where the seepage water from irrigation ditches has filled up the ground to a very considerable extent and the water level in these soils rises and falls many feet during the season according to the amount of water in the irrigation ditches. This has caused much trouble with peach trees of a nature somewhat similar to that which he describes. It may be, however, that the disease in this case is caused by some other condition which we have no means of knowing.

"I would advise your reader to dig down and examine the roots of trees in various stages and see if they are not affected. Also to ascertain the water level at different seasons, if there is any possibility of trouble of this sort. It is not at all probable that spraying would have any effect on this particular disease. There is something wrong under ground."

Cover Crops.

I would like to get the opinion of Mr. Mills about the advisability of

putting in a cover crop about the 1st of March or later. What would be the best to sow then to be plowed under soon as it has made its largest growth, probably about June or July.

After this had time to decompose plant another cover crop probably about Sept. 1st. What would be best for fall crop.

I want to put in two cover crops in orange orchard in one year. I have plenty water to flood same as alfalfa and can use it as long and often as necessary. Soil sandy loam, with good drainage. Will lack of cultivation and plowing in middle of summer be injurious to orange trees or crop.—D. Gervais, Anaheim.

Plant Whippoorwill Cow peas about May first, plow under in September, or better still, disk so as to cut them up fine, irrigate and drill in winter vetch. This can be drilled in with a disk grain drill of the Thomas pattern. This will circumvent the possibility of damage from summer plowing in the orange grove.—J. W. M.

Plums on Apricots.

Would you kindly advise whether or not a young apricot tree of second season's growth, could be successfully top worked to a Japanese or Japanese Hybrid plum. Which in your judgment would be the best method of changing, whip-grafting or budding in the branches.—Subscriber, Napa.

Whip graft in the latter part of February. If a good stand is not secured, bud the sprouts in July and August. Japanese plums do well on apricot.

Beans.

Which are the best beans to plant in black soil, not very sandy, or is there any other crop that would do better with or without irrigation? How would berries do?—L. K., Foster.

With irrigation and good cultivation lima beans will probably do very well in soil such as you describe. The yield will depend upon the season's rainfall. Berries do best on a sandy loam and with irrigation have been made to yield heavy crops in California. Without irrigation do not attempt it at all. As to any suggestion regarding other crops, it is impossible not knowing how near you are to market or what your market demands. The first thing the farmer should consider before planting is not what his soil will produce so much as what the market will consume at a paying price. Then investigate as to possibilities of the soil. The best soil on earth is a failure unless the product grown is in demand and at a price which will pay for the labor involved in its culture. Lima beans are a staple article and always command some price, and probably, as well as we can judge at this distance, will be as profitable as any crop you can raise.

Seedling Eucalypts.

Regarding growing seedling eucalypts in flats, is it best to make holes at the bottom to allow for drainage? Does the dropping of the rain from the lath damage the seed-bed? What will prevent it?—T. K., League City, Texas.

The best way to provide for the drainage is not to lay the shake or whatever is used for the bottom of the flats too closely together. If they have been made so as to be perfectly tight and hold the water then there should be holes made to permit of proper drainage. If the flats are placed under the eaves or where a quantity of water would drip upon them it would surely wash out the seeds, but the occasional dripping from the lath of a lath house would do no material injury.

Irrigation from Flowing Well.

I have a well which flows about one miners' inch and wish to raise tomatoes, lettuce and onions near it on light soil. Will sub-irrigation be satisfactory, that is, in deep ditches to flow into each one night? How far apart should ditches be? Would this method be less harmful than by flooding? Have no reservoir nor can I at this time buy engine.—F. L., Artesia.

The subscriber is laboring under great difficulties in trying to irrigate on sandy soil with flow of only one inch. One miners' inch means nine gallons per minute, which on sandy soil will disappear before it proceeds very far. Sub-irrigation, if by it you mean placed by pipes underneath the ground, would not be feasible because of its expense. It is unfortunate you cannot get small cheap engine or windmill to help out and increase its flow. Other than that we see no better way than to make hose attachment to the well pipe if you can and place this hose which may be of the cheaper cotton variety so as to carry from section to section as needed, then let run in well cleaned out ditch as far as possible. Another suggestion might be the excavation and making of a cheap reservoir. This would presume the well is high enough so as to construct your reservoir so as to still have fall to that portion of the ground in need of irrigation. With water at the surface as this is, a very cheap engine with cheap pump would answer the purpose most admirably if it could be secured.

Walnuts for Napa Valley.

Is the Placentia walnut adapted to Napa Valley? Is it an early or late bloomer? Does it compare with the Franquette in quality, size of nut and time of blooming? What kind of orange would in your judgment do well here? Will lemon and pomelo do well? Will the fruit be of as good quality as fruit grown farther south? I mean for small orchard, not for commercial purposes.—Subscriber, Napa.

The Placentia Perfection would not be well adapted to the Napa valley. It is a later bloomer than the ordinary seedling nut but at the same time is not so late as the Franquette. In quality it is equal to the very finest of the Franquettes, but the earliness of the bloom and the danger from frost would bar it in your section. The navel would probably give you the best result for home use. It is possible also a tree or two of Valencias, which are late oranges, would be desirable. We have never seen oranges grown in that particular section but think possibly you might find the skin thicker and more "rag" to the fruit than is common in the more typical citrus sections. Notwithstanding that, we have seen some very good fruit grown in sections very similar to Napa. The lemon or pomelo will not do well as they are more susceptible to the cold than is the orange. The nurseries you mentioned are thoroughly reliable and will give you first-class treatment.

Scab on Potatoes.

Please give directions for preventing scab on potatoes.—E. T. J.

Scab is a fungous disease which appears on the tubers. For treatment, clean ground should be secured, that is, ground which has not heretofore grown scabby potatoes. The seed should be immersed a couple of hours in a solution of formalin of the strength of one pound to 30 gallons of water. This is perhaps the simplest and cheapest, although some prefer the bichloride of mercury treatment, one ounce to six gallons of water. Immerse the whole tubers in this solution for one and one-half hours.

Much winter irrigation was practiced by the Bixby Land Company at Alamitos prior to the recent storm.

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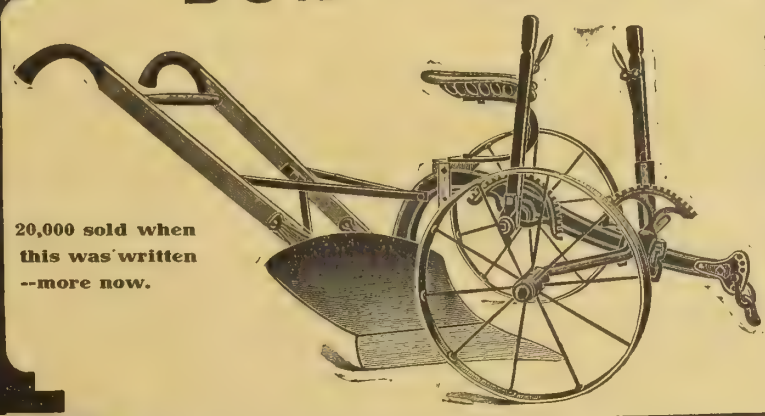

20,000 sold when this was written --more now.

Both the man who looks for thorough efficiency and the man who makes price a deciding power, is pleased with the

Banner Riding Attachment

This all-service implement converts any kind of walking plow or harrow into a perfect riding implement. A wrench is the only tool needed.

Has a high lift and turns square corners, left or right.

It will plow any depth from 1 to 12 inches. Made entirely of malleable iron and steel—there is never a breakage.

It's a busy profit-bringer for right now.

TO PROVE IT:

We will ship the Banner Riding Attachment on 30 days' trial. If you don't find it all right, send it back. We'll pay the freight both ways.

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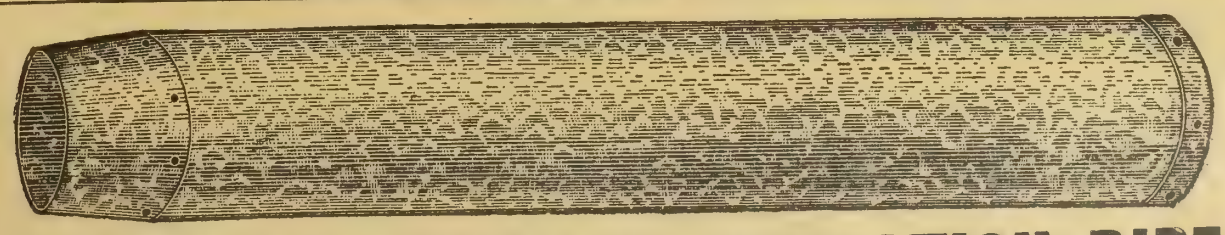

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SAVES WATER, GRADING AND TIME

The **only** way to **irrigate Alfalfa. Cheaper** than **Flumes.** This is only **one** of our **specialties. We make Riveted Water Pipe** in lengths of **ten feet** from **single sheets.** Let us **prove** to you that we make **Pipe** and **Tanks right.** WRITE FOR CATALOGUE.

AMERICAN STEEL PIPE & TANK COMPANY

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The Oldest Savings Bank in California

FOUNDED IN 1857. CAPITAL FULLY PAID $1,000,000.00

The Savings and Loan Society

101 Montgomery St., Cor. Sutter St., San Francisco

Exclusively a Savings Bank whose policy is for ***Conservatism*** and ***Safety,*** the result of ***Fifty-One Years' Experience.***

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Founded June 18, 1862 **Northwest Cor. California and Montgomery Sts., San Francisco**

Conducts a Savings Bank Business Exclusively

Capital Paid Up, $1,000,000.00 **Surplus, $1,205,846.00**

Total Assets, $26,199,496.00

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Every facility afforded for opening accounts and making deposits and withdrawals by mail. Correspondence invited.

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The Light That Never Fails

Thousands in use all over the country. A good light is the greatest pleasure and the first necessity of every home.

The only lamp on the market that is sold under an absolute guarantee.

Remember, the light from Kerosene is the light science has agreed upon as being the purest and best, because it is soft and mellow and restful to the eyes.

Here are a few of The Angle Lamp Merits:

NO UNDER SHADOW. NO SMOKE, NO ODOR, LITTLE HEAT.

GREAT ECONOMY—COST LESS TO BURN than an ordinary lamp. As easy to operate as gas or electricity, and better than either. ABSOLUTELY SAFE under all conditions. Lighted and extinguished like gas. Burned HIGH or LOW like GAS without a trace of odor. And a BRILLIANT, soft, steady, shadowless light—but this you will have to see to appreciate.

The lamp as shown in cut burns 22 hours on 3 quarts of oil.

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Established 1869 Incorporated 189

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Plumbing, Electricity, Plastering Automobiling or Bricklaying

Our graduates make $6 per day after 3 months instructions.
You can enter at any time.—No previous knowledge required.

NO BOOKS—TOOLS TAKE THEIR PLACE

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_____ 1909

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Mercer's Weed Process Foundation

If you would be successful with your bees use Mercer's Weed Process Foundation. Absolutely the best on the market. Send me your beeswax to make up.

H. J. Mercer, 948 East Second St., Los Angeles, Cal.

Dealer in All Kinds of Beekeepers' Supplies

Household Department

TWILIGHT ON THE DESERT.

'Tis twilight on the desert,
And o'er the changing sea
Of the Salton falls the shadows
On her depths of mystery.

And across her silvery surface,
The mountains, gaunt and grand,
Above the rose-tint cloudlets,
As on guard in silence stand.

The gentle breeezs from those peaks,
Across this sea sublime,
Softly whisper me their secrets
Of this warm and sunny clime.

And now above me in the skies,
The stars begin to gleam
And sparkle like diamonds
In a cool and silent stream.

But now, far off upon the night
Comes a dismal, sighing wail
Of a coyote, as he calls his mate
From out their hidden vale.

Then darkness comes and all is still,
And o'er this desert part
Of solitude and lonliness
There's naught to cheer your heart.

And as the night has quickly come,
From the glories of the day,
So does each person come on earth,
To live—then go his way.
—H. H. Ferris, in Yuma Examiner.

THE GUEST CHAMBER.

EVERY housekeeper takes pride in her guest chamber, and no matter how plainly it may be furnished it is always attractive if everything is clean and dainty-looking, and while this room should be as pretty as your means will allow, it should also be homelike and restful in every respect. When planning the room, comfort should be the first consideration, and if your means are limited, you can add many pretty homemade articles to the room that will not only please the eye but add to the comfort of your guest. Of course there should be a comfortable bed and then there should be a nice lounge or couch, and a pretty and serviceable one can be made ornamental cot, and this can be made ornamental as well as useful by covering with pretty denim or cretonne which should be put on to the top covering as a ruffle. Be sure to have a light blanket or comfort neatly folded and conveniently near ready for colder nights and mornings, and there is nothing nicer for this purpose than one of the pretty cotton blankets. There is nothing that adds so much to the appearance of the room as pretty bureau and table covers that are carefully laundered and these covers can be kept beautifully white with very little rubbing by putting them to soak for an hour before rubbing them out in a strong pearline suds and then rinsing carefully. But pieces that have colors in the embroidery should be washed and rinsed as quickly as possible. Have plenty of towels and good soap, but instead of furnishing handsome, long towels, which are really awkward to use, have a nice supply of small hand towels, as no towel should be used by anyone more than once, certainly never by two persons. On the toilet table have hair pins, pins of all sizes and a good lamp and plenty of matches, and on the small table, have pen, ink, paper, some of the late magazines and a Bible with good print. Have a brush and comb on the toilet table, as the daintest persons sometimes forget to bring their own, but be sure to clean these articles after they are used as the cleanliest head may have dandruff, which is easily carried to other heads in the same brush if used. —M. H.

WAYS OF COOKING THE APPLE.

Baked Apples, Creole Style.

Cook cored apples in a little water and lemon juice. Place in a dish and fill centers with jelly or marmalade. Add one-fourth of a cup of sugar to the liquid, boil and pour over the apples. On the top of each apple place a meringue, pressing it from a pastry bag through a star tube. Put the apples in a moderate oven for about eight or ten minutes. Serve cold.

Jellied Apples.

Peel, core and quarter two quarts of tart apples. Make a sirup of one and one-half pints of water and two cups of sugar, boil rapidly for 10 minutes. Cook the apples gently, a few at a time, until they are tender and clear. Remove them with a skimmer and spread on a platter. When the last of the fruit has been cooked add one-half package of gelatin which has been soaked in one-half cup of cold water for two hours, the juice of one lemon and stir until the gelatin is dissolved. Set the saucepan in cold water and stir until the mixture begins to thicken, drop the apples in and mix gently, turn into a mold and let harden. Serve with whipped cream.

Jellied Apples With Almonds.

Pare, core and quarter Golden Pippins, stew until soft and beat smooth. Make sirup by boiling a pound and a half of sugar and a pint of water for every two pounds of apples. Put the apple pulp and the juice of three lemons into the sirup and boil gently until stiff enough to drop heavily from the spoon. Pour into a wet mold and when cold turn onto a serving dish. Stick blanched almonds into the jelly and surround with whipped cream.

Apple and Brown Bread Pudding.

Mix two-thirds of a cup of chopped suet with two cups of Boston brown bread crumbs, add two cups of apple chopped fine, half a teaspoonful of salt a cup of raisins dredged with two tablespoons of flour and a half of a teaspoonful of ginger or mace. Beat one egg, add a cup of milk and stir into the dry ingredients. Steam in a buttered mold for two and one-half hours. Serve with creamy sauce.

Creamy Sauce.

Boil one cup of sugar and one-half cup of water to the soft ball stage; then pour the sirup in a fine stream over the well beaten white of one egg. Continue beating until cold; fold in one cup of double cream beaten dry; add one-half a teaspoon of vanilla.

Apple, Orange and Peach Salad.

Equal parts of apples, peaches and oranges are cut into cubes and mixed with cream dressing. Serve in apple shells or in the rind of the oranges.

Baked Apple Salad.

Bake Northern Spy apples until thoroughly done; remove the skin. Stuff the centers with nuts and serve with salad dressing and whipped cream.

Delmonico Apples.

Put a layer of apple sauce in a buttered pudding dish, sprinkle with crushed macaroons; add a little water and bake. Delicious when served with meat.

Apple Delight.

Put a layer of apple sauce in a buttered pudding dish, dot with butter, add a layer of chopped peaches and apricots, sprinkle with blanched almonds ground rather coarsely; repeat until the pan is full; pour the peach juice over the mixture and bake for one hour. Serve as a relish with meat course.

Fried Apples.

Quarter and core five apples without paring. Put into a frying pan one cup of sugar, one tablespoon butter and three tablespoons of water. Let this melt and lay in the apples with the skin up. Cover and fry slowly until brown.

ROAST CHICKEN.

And this is the accepted time to get rid of all the perplexities in the way of unsatisfactory breeders and hens that won't sit, or care for their families in a motherly way, and serve them up either in a fine roast or delicious chicken pie. If your own family cannot use them remember "there are others" to whom a fat chicken would be a rare treat, one which has never seen the inside of a cold storage plant, especially.

Sometimes a gift of a nice chicken like this would suit a friend far better than any dinky gift money would buy, and save hours of shopping as well.

To roast an old bird requires so much time, and the outcome is often so dry and tasteless after long hours in the oven, that a better plan is to parboil it gently until nearly done, then stuff and roast as usual, using the liquor in which it was parboiled for gravy.

To make a chicken pie, nothing is nicer than a fat old hen or two.

Cut up and cook until tender, either in a kettle or covered baking dish, then make your gravy and be sure there is plenty of it. Use a large dish, not a deep one, but wide enough across so that the crust may be all top crust and each person have enough. The under crust in a chicken pie is apt to absorb too much of the gravy to its own sogginess, and would better be omitted. A good rich biscuit dough is all right for the crust, mixed just as soft as possible to handle, indeed, I have had splendid success with crust made with a spoon, a little thicker than for dumplings, and it's quicker done.

Be sure and not kill the laying hens. If you have not the Hogan or Potter book to guide you in your selection, notice how wide she is when she walks, between her thighs, from behind. If she has the appearance of almost "straddling" she is either laying, or just going to, but if she is rather narrow between the shanks, you may be pretty sure she is not "full of eggs," worth three cents each.—Mrs. Frank Metcalf.

About the House

ARE you planning some pleasure for St. Valentine's day and Washington's birthday? Observe the day in some way—some little dainty for the table—a visit to a friend, a ride or drive, something out of the ordinary every day rut. In one house I know of, on St. Valentine's day you will always find a plate of heart-shaped cakes and candies on the table—and a little posie of some kind at every plate. And on Washington's birthday a tiny silk flag floats gaily in the centre of the dinner table, while two cherry pies guard the flag on either side.

For a valentine party a "heart hunt" will furnish amusement. Hide several hundred paper hearts about the house and at a given signal every one goes heart hunting. A few candy hearts may be hidden in various places—they will furnish refreshment during the hunt. If you want to hunt in couples, select partners by cards with the names of well known lovers of history or fiction written on them. The men who have cards with Hamlet, John Alden or Romeo written on them will look for Ophelia, Priscilla or Juliet.

When the hearts are all found the one or the couple having the largest number is given a prize—some flowers, a box of candy or a valentine.

The refreshments should carry out the "heart" idea. Heart shaped sandwiches, cakes and candies.

If you have a salad cut little hearts from pickled beets or cucumbers to use as a garnish, or have just a valentine cake and lemonade or chocolate. Bake any good cage in a shallow pan, ice all over with white icing and ornament with hearts and cupids and flowers—making it look just as much like a valentine as possible. Have a pretty table and serve the cake and lemonade or chocolate from that.

One of the jolliest valentine parties I ever attended was one where the guests were all staid married people who had long ago handed over most of their part of the frolics of St. Valentine's day to their boys and girls. So now they smiled over the dainty invitations to a "Proposal Party." and wondered just what a "Proposal Party" would prove to be.

Tied with rose colored ribbon, with tiny gold hearts—cut from gilt paper—encircling the date—February 14—the invitations were, as one silver-haired matron expressed it— "youthful and giddy enough for boys and girls of sixteen." But on the appointed evening there was a pleasant flutter of anticipation among the older people of the neighborhood and the pleasant rooms of the hostess were filled with a happy, jolly crowd.

After the greetings were over, the women were handed small cards, with the names of the men present written on them, and a blank opposite each name. And every man there made every woman just the prettiest "proposal" that he knew how to make, and after each proposal—if it pleased her, the woman placed a tiny rose colored heart after the man's name. If she did not think the proposal a good one a tiny rose colored mitten went on.

After the "proposing" was over and done with the hostess gathered up the cards, and then announced the name of the man who had won the most hearts and the one who had received the greatest number of mittens. Amid laughter, the prizes were given—tiny rose-colored pocket pincushions—a "heart" and a "mitten."

Sandwiches, rolled and tied with rose-colored ribbon—and sandwiches cut in heart shape—coffee and heart shaped cakes were served and then music. All the old songs that had not been thought of for years—and it was way in the morning hours before any one thought of going home.—Elbepe.

Mayer Leading Lady

THE CORRECT SHOE FOR STYLE, EASE AND GOOD WEAR

You could never hope to buy a more stylish or serviceable shoe than the "Leading Lady." It is right up-to-date in appearance and fits the foot perfectly from the very first. Besides being stylish and comfortable, the

Leading Lady

wears much longer than most shoes. It is so well made that it lasts twice as long as the average shoe, and will retain its shape to the end.

Why buy inferior shoes when, with the same money, you can get the "Leading Lady?" Your dealer will supply you; if not, write to us.

Look for the Mayer Trade Mark on the sole.

FREE—If you will send us the name of a dealer who *does not* handle Leading Lady Shoes, we will send you free, postpaid, a beautiful picture of Martha Washington, size 15x20.

We also make Honorbilt Shoes, Martha Washington Comfort Shoes, Yerma Cushion Shoes and Special Merit School Shoes.

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F. MAYER BOOT & SHOE CO.
MILWAUKEE, WISCONSIN

WESTERN BRANCH: Washington Shoe Mfg. Co.—Seattle.

YOUR TEAM

How About Its Uniform?

If you want your neighbors to know you're on the map, tog out your local team in a spic-span new Hoegee Uniform. Boys who take pride in their Play will take interest in their work.

We Manufacture

Baseball, Football and Tennis Suits, Shaw-duck Ulsters and Outing Suits, Tents, Awnings, Irrigating Hose, Picking Bags, and Sheets, Stack Covers, Horse Covers, Feed Bags, Wagon Sheets. Name the Goods you need. Catalogues Mailed postpaid.

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138-40-42 South Main, Los Angeles

$16.30 buys this handsome six-hole Nickle-Trimmed Cast Range direct from the Manufacturer

without high shelf. With high shelf, just as shown in the cut, $19.97; large oven, six cooking holes, best quality of iron. Burns coal or wood. Handsome nickle trimmings. OUR TERMS are the most liberal ever made. You can pay after you receive the range. You can take it into your own home and use it 30 days. If you don't find it exactly as represented, the biggest bargain you ever saw you won't have to keep it.

Write today for our beautifully illustrated Stove Catalogue No. 101-C. A postal card will do it. Don't buy until you get it.

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We have more than 100,000 satisfied customers in more than 17,000 cities, villages and towns in the United States who have each saved from $5 to $40 by buying a Kalamazoo stove or range on

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direct from our factory at actual factory prices. No stove or range has a higher reputation or gives better satisfaction. You run no risk. You save all dealers' profits. We pay the freight.

Send Postal For Catalog No. 508

and see list of towns where we have satisfied customers.

Kalamazoo Stove Company, Mfrs., Kalamazoo, Mich.

Our patent oven thermometer makes baking and roasting easy.

FREE 12 Page Catalogue, of all kinds of raw furs, cotton tanning horse and cattle hides for robes, coats, harness and lace leather. With 90 trappers aids and tricks. LARGEST DEALERS in the U. S. Write us before selling elsewhere. It will pay U.

BLACK'S HIDE & FUR CO.
413 Elm St. Durand, Wis.

Edison Phonographs, Victors, Zonophones

Records and Supplies, $10.00 orders delivered at your nearest railroad station upon receipt of full retail price. Write for catalog.

Peter Bacigalupi & Sons, 941 Market St., San Francisco

One guava producer at Santa Ana marketed this year 35 tons of guavas.

The Produce Markets

Los Angeles Markets

LOS ANGELES, Feb. 3, 1909.

Butter.

Butter stands at last week's quotation. The market semes to show no remarkable features and it is predicted that the heavy feed now coming on will lower quotations in a few days.

Produce Exchange wholesale quotations are as follows with actual selling price to the trade 2½c advance on Extras.

Creamery ex per roll	77½
Firsts	70
Eastern extra per roll	70
Cooking	23@25
"Butterine"	16@20

Cheese.

Southern California Anchor	15½
Northern fresh	15
Longhorn	18@19
Eastern singles	16½
Cheddars	17
Swiss	16½
Imported Swiss	28
Daisy	16½@17
Oregon triplets	16
Limburger	18@20
Twin	16

Eggs and Poultry.

Eggs have advanced again. This at the season when a slump was expected has surprised all. All shipments are quickly picked up and the lack of storage stock forces price higher. It is predicted that the supply will soon increase so that a heavy decline will follow.

Eggs local candled	37
Eggs case count buying price	34

Dealers pay for live stock.

Hens per pound	14@16
Young roosters per pound	18
Fryers	20
Broilers per lb	22
Roasters	18
Old roosters	8
Turkeys	16@20
Geese	15@16
Ducks	15@16
Squabs	1.25@1.75

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs from 175 to 200 pounds	6¼@6½
Prime steers	4¾@5
Heifers	4@4¼
Calves per pound	5
Sheep ewes per head	3.75@4.00
Lambs per head	3.00@3.50
Wethers	4.50@5.00

Potatoes.

Potatoes have been lowered materially during the week and a scrap is on between the large buyers which is said to be responsible for present condition. One dealer has been buying and importing large quantities at $1.50.

Wholesale prices are:

Sweets per ctl	1.50
Burbanks local	2.00
Burbanks northern	2.00
Sweets choice	1.25
White Rose	2.00
Highland fancy	1.80
Highland choice	1.50@1.75
Coast	2.10
Salinas	2.10
Idaho's	1.75

Onions.

Wholesale quotations:

Australian Browns	2.25
Globes	1.50
Nevadas	2.50
Garlic	10

Vegetables.

Artichokes per doz Northern	1.15@1.20
Asparagus per lb	15
Beets per doz	35
Bell peppers per lb	20
Beans string	16
Beans Limas per lb	8@10
Brussels sprouts per lb	10
Cabbage Red per lb	3
Cabbage sack	1.25@1.50
Celery per crate	2.85
Chili per lb	16
Chili dried	10@12
Chicory per doz	40
Cucumbers per doz hot house	40@1.75
Cauliflowers per crate	1.50@1.75
Carrots per doz	35@40
Egg plant per lb	8
Green onions per doz bunches	20@25
Horseradish per lb	12
Lettuce per crate	1.10@1.25
Lettuce choice	75
Mushrooms per lb	35
Peas sugar per lb	6@6½
Parsley doz	20
Parsnips	35@40
Rutabaga per doz	40
Rhubarb	1.00
Radishes per doz	15@20
Salsify	40
Summer squash per box	1.00@1.25
Spinach per doz	20
Turnips doz bunches	30@40
Tomatoes lug box	1.00

Citrus Fruits.

Navels fy	2.00@2.50
Navels ch	1.75
Tangerines	1.45@1.60
Grapefruit seedless	3.25@3.50
Grapefruit seedlings	2.25
Lemons fy	2.25
Lemons choice	1.75
Limes per basket	50

Fresh Fruits.

Wholesale prices on the market are:

Baldwins 4 tier	2.00
Bellflowers	1.10@1.15
Newton Pippins	1.15@1.35
Fall Pippins	1.50
Utah Jonathans	1.50
Red Pearmains	1.20
Spitzenberg	2.25@2.50
Grapes Red Emperors	1.75
Guavas per lb	4@6
Cornichons	1.50
Pears lug box	1.35@1.50
Persimmons per box	2.25
Pomegranates per box	1.75

Dried Fruits.

Wholesale prices are:

Apricots	9½
Evap. apples fy per lb	6½@7
Figs loose white	5
Figs blk	5
Peaches in boxes	7½
Peaches sacks	6
Pears	9
Nectarines	9@10
Prunes 30's to 40's boxed	8½
Prunes 40's to 50's	7½
Prunes 50's to 60's	7

Beans Dried.

Wholesale prices are:

Limas per ctl	4.50
Pink No 1	3.10
Lady Washington	4.35
Small white	5.25
Black eyes	3.50
Garvanzas	4.50
Lentils	8.00
Bayou	3.50

Nuts.

Almonds IXL per lb	13½
Almonds choice	11½
Pecans polished	12@17
Peanuts Virginia	6½
Peanuts California	5
Walnuts No 1	12@12½
Chestnuts	8@8½

Honey.

Wholesale quotations:

Extracted water white	9
Extracted Light Amber	7½
Comb W W	16
Comb white	15
Beeswax	30

Hay.

Prices paid to producers f. o. b. Los Angeles are as follows:

Barley No 1	18.00@20.00
Barley No 2	15.00@17.00
Alfalfa northern per ton	15.00@16.00
Alfalfa local	15.00@18.00
Tame oat No 1	18.00@20.00
Wheat No 1	18.00@20.00
Wheat No 2	15.00@17.00

Grains.

Wholesale selling price f. o. b., Los Angeles.

Wheat new per ctl	1.90
Kaffir corn	1.80
Corn Eastern sacked	1.80
White oats	1.85
Seed Rye	1.25

Feed Stuff.

Wholesale selling price f. o. b., Los Angeles:

Cracked corn	1.85
Shorts	1.80
Bran	1.65
Oil cake meal	2.50
Feed meal	1.90
Rolled barley	1.65

AMYGDALINA REGNANS.

(Continued from Page 115.)

"The tree endures low temperatures, but is injured by dry heat. It does best near the coast and at moderate elevations in well-watered mountain regions. In no part of the Southwest do the requirements seem fully met.

"The timber is not so valuable as that of many other Eucalypts, but is said to be useful for shingles, rails, and for planking in ships. It is comparatively light, floating on water. It does not usually last well underground, nor does it furnish fuel of good quality. The leaves are a source of Eucalyptus oil. Baron von Mueller states that the fallen leaves of this and some other species deodorize the soil. He recommends the planting of it in swampy fever regions, where climatic conditions are suitable."

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

San Francisco Markets

SAN FRANCISCO, Feb. 2, 1909.

Butter.

Butter has declined heavily during the week now standing at 33 for fresh extras, a decline of 13 cents within the week.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras per lb	33
California firsts	32½
California seconds	28
Ladles extra	23½
Storage Cal ex	31

Cheese.

California flats fy	13
Firsts	12½
California flats fy	13½
Firsts	13½
Seconds	11½
Young American Oregon fy	16
Eastern N. Y. Cheddars fy	17
Oregon flat fy	14

Eggs and Poultry.

Eggs advanced again during the week but at this writing are again declining though now standing one cent higher than last week.

Official quotations of the S. F. Wholesale Dairy & Produce Ex. are:

Fresh ranch extras	40
Eggs first per doz	39
Eggs second	38½
Pullets selected	37

Hens per doz	5.00@6.50
Hens extra	7.00@9.00
Young roosters	7.00@7.50
Old roosters	4.00@5.00
Fryers per doz	6.50@7.00
Broilers per doz	4.50@6.50
Geese per pair	2.00@3.00
Goslings per pair	1.75@2.00
Ducks young	5.00@9.00
Live Turkeys	20@25
Dressed Turkeys	20@26
Pigeons young	2.00@3.00

Live Stock.

San Francisco prices gross weight:

Steers No 1	4½@4¾
Do second quality	4@4¼
No 1 cow and heifers	3½@3¾
Second quality	3¼
Hogs 100 to 130	5¾
Hogs 130 to 250	6@6¼
Rough heavy	4½@5
Calves per lb	4@5
Lambs spring	5¼@5½
Wethers No 1	4½
Ewes No 1	4

Potatoes.

The storm has given strength to the potato market and strong advance has been made.

Wholesale market quotations:

River white fy sacks	1.40@1.65
Early Rose	1.75@1.85
Salinas Burbanks	1.65@1.75
Sweets per crate	1.75
Lompoc Burbanks	1.90@2.00
Early Rose seed	1.25@1.30

Vegetables.

Wholesale quotations:

Asparagus per lb	15@25
Bell peppers per lb	25
Brussels Sprouts per lb	2@4
Celery per doz	40@50
Celery per crate	2.50@3.00
Cucumbers per doz	75@1.25
Chili peppers per lb	20
Egg plant per lb	25@30
Green peas per lb	4@7
Mushrooms per lb	5@8
Marrowfat squash per ton	20.00@22.50
Squash per box Southern	1.00@1.50
Onions green per box	75@90
Okra per box	1.25@1.50
Rhubarb per box	1.75@2.25
Tomatoes box Los Angeles	1.25@1.75
String beans	12½
Wax Beans	10@12½
Garlic new	8@10

Onions.

Oregons	2.25
California's	2.00
Nevada's	2.50

Citrus Fruits.

Navels fy & large sizes	1.50@2.50
Tangerines crates	1.25@1.75
Mandarins	1.35@1.60
Grapefruit seedless	3.00@3.50
Grapefruit seedlings	75@1.25
Lemons ch	2.00@2.50
Lemons fy	2.50@3.25
Limes	6.50@7.00

Fresh Fruits.

Bellflowers	85@1.00
Bellflowers No 2	50@65
Spitzenberg	1.25@2.00
Newton Pippins	85@1.15
Ben Davis	1.25@1.50
Winter Nellis	75@1.25
Persimmons	75@1.00

Dried Fruits.

Prunes 4-size basis	3@3¼
Santa Clara	3¼@3¾

½c premium for larger sizes

Apricots per lb; Choice 8½; fancy 9@10.

PEACHES—Choice 5; fancy 6@6½

Apples Evap	5¾@7
Pears	5½@8

RAISINS—1908 crop, f. o. b.: Clusters and Layers, 20-lb bxs—Imperial Clusters, 6-crown, $2; Dehesa Clusters, 5-crown, $1.75; Fancy Clusters, 4-crown, $1.40; London Layers, 3-crown, $1.15; do, 2-crown, $1.05. Seeded, 25-lb bxs—Fancy bulk per lb, 5¼c; Choice bulk, 5c. Loose Muscatels, 50-lb bxs—Standard, 4-crown, 4c; do, 3-crown, 3¼c; do, 2-crown, 2¾c; Seedless, 3½c. Seedless Sultanas—Unbleached, 4¼c. Thompson Seedless—Unbleached, 4¾c. Dried Grapes, 2½c.

Nuts.

Walnuts S S No 1 new crop	8@12½
Walnuts No 2	6
No 1 Standard	8½
No 2 Standard	4½@5
Almonds Nonp	11½
Almonds IXL	10½@11
Ne Plus Ultra	9½
Drakes	8½@9
Chestnuts, Cal	9½@14
Peanuts, Cal	5@6

Beans Dried.

Limas	3.80@3.90
Pink	2.40@2.60
Small white	4.75@5.25
Large white	3.80@4.15
Black eyes	2.80@3.00
Red Kidneys	3.50@3.60
Garvanzas	3.00@4.00
Bayo	3.10@3.25
Horse beans	2.00@2.25

Hops.

Hops new crop	6@10

Honey.

White comb	12@14
Light Amber	10@11
Extracted W W	6½@7½
Extracted light amber	5½@6
Beeswax No 1 per lb	28@30
Beeswax No 2 per lb	23@25

Hay.

Country business which was very heavy up to the time of the recent storms has slacked off very materially, due only to the fact that it is difficult for consignees to receive and handle hay both on account of the possibility of it being damaged and the difficulty in hauling it over the roads which are in very bad condition. We anticipate that as soon as the weather clears and the roads become better that this country demand will be revived again, for none of the country districts have laid in sufficient feed for their season's supply.

Alfalfa has been arriving very sparingly and all receipts have been steadily absorbed here at top prices.

Choice wheat hay	21.00@23.50
Good wheat hay	19.00@21.00
Other grades same	17.00@18.00
Wheat and oat	16.00@21.50
Tame oat	16.00@21.00
Wild oat	15.00@17.00
Stock hay	12.00@14.00
Alfalfa	14.50@18.50
Straw per bale	50@85

Grains.

Wheat No 1	1.72½@1.77½
Barley	1.37½@1.40
Corn large yellow	1.60@1.65
Oats, white	1.85@1.90
Oats gray	1.80@1.90
Rye new crop	1.45@1.50
Corn Egyptain	1.60@1.65

Feed Stuff.

Bran per ton	29.00@30.00
Feed cornmeal per ton	37.00@38.00
Cracked corn per ton	38.00@39.00
Rolled barley per ton	27.50@30.00
Oil cake meal per ton	38.00@39.50
Cocoanut cake per ton	25.50@26.50
Middlings	33.50@36.00

Citrus Market

LOS ANGELES, Feb. 3, 1909.

Oranges have gone forward heavily since the big storm and as a rule have found good market conditions. A slightly easier tone prevails, however, and returns are not quite equal to those of a week or more ago.

Lemons are rather weak and the importations are very large which affects the market unfavorably. There are at this time only few shipments from California.

Shipments:

Shipments to date this season aggregate, oranges 4180, lemons 1078 cars.

NEW YORK, Feb. 2.—Eighteen cars navels sold. Firm on good stock. Weak on frozen light weight fruit. Clear and cold.

NAVELS—	Average.
Orchard Imp National Or Co	3.20
Standard do	2.60
Champion fy A C Denman & Sons	2.90
Champion ch do	2.65
Rialto Girl fy Imp Growers' F Co	2.60
Rialto Girl ch do	2.45
Rialto Girl Growers' Ft Co	2.40
Rialto Girl ch do	2.45
Golden Flower xf Red C O Assn	2.55
Trail st Ft Ex	2.30
Mtn Lion fy Speich & Co	2.20
Our Popular xc do	1.90
Blue Diamond	2.10
Poppy xf Haight Bethel Co	2.45
Dos Palmos xc San Marino G A	2.45
Dos Palmos xs do	2.50
Gold Buckle RH Ft Ex	2.80
Lochinvar RH Ft Ex	2.55
Blue Seal ACG Ft Ex	2.80
Red Shield do	2.35
Iris DM Ft Ex	2.65
Jameson QC Ft Ex	2.15

Cream Separators, all sizes, all prices. O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

Royal Knight RH Ft Ex 2.60
Mt Whitney TCC Ft Ex 2.10
Valley do 1.75
Pointer Imp ACG Ft Ex 2.55
Pointer do 2.45
Rainbow 2.20

TANGERINE HALVES— Average.
Blue Seal ACG Ft Ex 1.45

BLOODS—HALVES— Average.
Southland Beauties QC Ft Ex 1.15

LEMONS— Average.
Southland Beauties QC Ft Ex 2.75
Just Rite do 2.50

THREE CULTIVATOR 13 ems non AL

NEW YORK, Feb. 1.—Owing to the extreme cold weather no auction sales of California citrus fruits were held here today.

ST. LOUIS, Feb 1.—Weather freezing. Market firm on good stock navels. Three cars cold. Five cars navels and one car lemons sold.

NAVELS— Average.
Goddess SA Ft Ex Pomona.....2.40
Mtn Crest do 1.85
Orchard National Orange Co 2.80
Standard do 2.70

LEMONS— Average.
Olla 1.85
Don Strachan FtF Co 1.10
Redskin 2.05

BOSTON, Feb. 1.—Thirteen cars sold. Weather cold. The market is easier. There are 22 cars on track.

NAVELS— Average.
Orchard National Orange Co 2.95
Standard do 2.60
Rose Red OG Assn 2.65
Clover do 2.45
Hillcrest 2.45
Preferred Stock 2.45
W. Highland Cleghorn Bros 2.35
Canna SB Ft Ex Yerkes Spur.....2.40
Alhambra ST Ft Ex E. Alhambra..2.15
Mt Whitney TCC Ft Ex Portervle 1.85
Valley do 1.75
Tulip do 1.60
Canna SB Ft Ex Yerkes Spur 2.40

LEMONS— Average.
Mission ST Ft Ex Santa Barbara..2.40
Festival do 1.95
Gold Finch SS Ft Ex El Modena..2.35
El Modena do 2.25
Protection Ohio Lemon Co 1.15

PHILADELPHIA, Feb. 1.—Five cars navels and two cars lemons sold. Weather very cold. Market is lower. Three cars on track. Fifteen cars Florida oranges sold. Market remains unchanged on good stock.

NAVELS— Average.
Independent Growers' Ft Co 2.03
Independent Imp do 2.22
Suburban 2.13
Wedding Bells 1.89
Squirrel AH Ft Ex Prenda 2.15
Fairview Riv Ft Ex Riverside....2.40
Martha Washington do 2.42
Beulah do 2.08
Blue Cross do 2.02
Goddess SA Ft Ex Pomona 2.27

LEMONS— Average.
Coyote OK Ft Ex 2.42
Blue Jay do 2.02
Bridal Veil do 2.23
White Cross do 1.89

CLEVELAND, Feb. 1.—Weather colder. Market is higher on navels. Four cars sold, three on track. Floridas offered, but withdrawn.

NAVELS— Average.
Choice Stk Label St F E Rossmye 2.00
Goddess, SA Ft Ex Pomona 2.20
Matador AH Ft Ex Arlington ...2.25
Palm Tree do 2.30
Gold Buckle RH Ft Ex E. Highlds 2.90
Lochinvar do 2.65

PITTSBURG, Feb. 1.—Eight cars sold, nine cars on track. Market is steady on navels and lemons. Eight cars Florida oranges sold, average $1.65. Market is easier on Floridas. Weather cold, thermometer registering 10 above zero.

EUCALPTS.

(Continued from Page 136.)

sun will soon injure them. Too much or too little watering injures equally It is preferable to water in the forenoon.

By following these simple directions you will have hardy trees and get a surprise at their rapid growth. By having your trees in cans they may be safely moved at any time.

Gullying is a method of land-washing that ruins land quicker than any other form. Owners of hilly or very rolling land must be continually on the lookout for little gullies and take means to prevent their enlargement. In dealing with this subject the Illinois station says the common practice is to scatter straw in the draws or build dams across them at frequent intervals. A coarser material used with the straw gives better results. A better plan is to keep the draws in sod even when the rest of the fields are cultivated. Almost any grass that forms a tough sod will answer the purpose, timothy and red-top being quite satisfactory.

FEEDING STOCK.

Concentrated foods should be fed in proportion to their percentage of protein, guided, of course, by prevailing market values. The prosperous feeder is the one who mixes his rations so that with the least cost the animal receives the greatest nutriment.

It is not the cheapest food per ton that can be purchased that is the most economical, but rather the food that is richest in digestible protein.

Feed Liberally.

If sufficient protein, fat and carbohydrates are not contained in the food, the cow supplies this deficiency for a time by drawing from her own body, and the quality and quantity of the milk will gradually begin to shrink. The stingy feeder cheats himself as well as the cow. Unusual excitement of any kind reduces the quantity and quality of the milk. Sudden changes of feed also affect the richness of the milk, but only temporarily. Regularity of milking is also of utmost importance.

Get the Most for Your Money.

By carefully comparing the composition of the many foods upon the market with the cost of the same it will be seen that there is often a wide disparity between the real value and market value of the different foodstuffs.

Balanced Rations.

By a balanced ration is meant a combination of foodstuffs that with the least waste will fulfill the animal's needs for 24 hours. This ratio of nutriments is often expressed as nutritive ratio, being the ratio which exists between the amount of digestible protein and carbohydrates and fat. To obtain this ratio multiply the amount of fat by 2.25 (fat having this heat value as compared with carbohydrates), plus carbohydrates divided by protein. For ordinary feeding a ratio of from 1.5 to 1.6 is considered economical.

A cow in full flow of milk, weighing 1000 pounds, should consume 24 pounds of organic substance daily containing approximately 2.5 pounds of digestible protein.

Cocoa Cake and Meal.

We particularly wish to call attention to cocoa cake and meal. This food contains 16.4 per cent digestible protein—is easily digested and possesses an agreeable flavor that is greatly relished by stock. It is especially recommended for swine and chickens. As cccoa meal is a highly concentrated food, possessing strong affinity for water, it should be stored in as dry a place as possible. If kept in a dry place cocoa meal can be kept indefinitely.

For chickens we suggest the following ration:

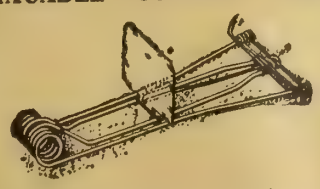
Food	Lbs.	Dry Matter	Protein	Carbohydrates	Fat
Wheat	5	4.58	.66	2.87	.09
Barley	4	3.60	.37	2.38	.09
Middlings ...	2	1.76	.24	1.07	.08
Bran	2	1.76	.22	.84	.05
Corn Meal ...	2	1.76	.13	1.32	.07
Cocoa Meal ..	4	3.44	.66	1.70	.40
Linseed Meal.	1	.90	.24	.24	.17
	20	17.80	2.52	10.42	.95

Nutritive Ratio—1:5 .

If the fowls are confined it is well to add a small quantity of meat meal to take the place of worms, etc. As few rations contain enough mineral matter, it is advisable to supply lime separately.

Farmers at Cucamonga are in trouble over the construction of the dam across the stretch of land which was built to prevent the flooding of the orchards below it, but it in turn deflected the waters of the recent rain so that other orchards were seriously damaged.

MACABEE GOPHER TRAP



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Z. A. MACABEE, LOS GATOS, CAL.

Eucalyptus Trees

And how to grow them, with or without irrigation. A new system of planting and protection **Write for Booklet.**

The Southard Nurseries
Redlands, California.

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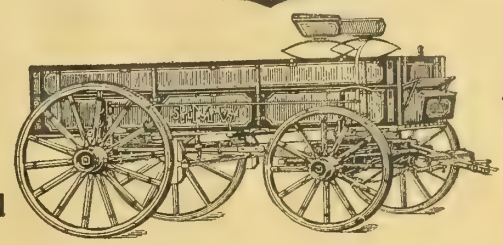
It is a Studebaker

Easy Running Well Balanced



Will Out Wear Two "Cheap" Wagons

See the Studebaker Agent
Mention this paper and send us two cents in postage and we will mail you **FREE** Studebaker 1909 Farmer's Almanac.

Newell Mathews Co.
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200-202 No. Los Angeles St. Los Angeles, Cal.

Just Write Me a Postal for My Price and My Free Book

If you do, I will quote you a special factory price on an Incubator and brooder that will surprise you. I want every man or woman who raises chickens or who thinks of going into poultry for profit, to get my 1909 offer and book and learn the remarkable value I am giving in my

SUCCESS INCUBATOR

Fire-Proof--Freight Prepaid--30 Days' Free Trial

It has every **real** improvement—many exclusive points of merit. Is the result of years of practical experience of one of the oldest incubator inventors and operators in the country.

This practical experience of this practical man is yours free with the Success Incubators and Brooders, insurable, for **your** safety and protection. Guaranteed to hatch more and healthier chicks, under same conditions than any other machine made. I also make the best Hot Water Brooder—priced proportionately low.

But write today for my "Book About Incubators" and special factory prices.

Write me personally

E. E. McClanahan
Los Angeles, - Cal.
112 East 8th Street

Compare Prices and Results

Analysis (from Bulletin 161, Jan. 1905—University of California.)

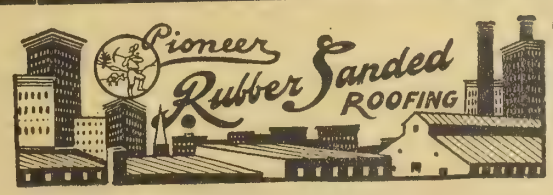
Digestible Protein in

Linseed Oil Cake Meal	**24.4 per cent**	Shorts	12.2 per cent
Cocoa Cake or Meal	**16.4** "	Mixed Feed	9.6 "
Wheat Middlings	12.2 "	Corn Meal	6.4 "
Wheat Bran	11.2 "	Wheat Hay	3.6 "

If you Feed for Protein you get Results

Ask your jobber for prices, or write

Pacific Oil and Lead Works, San Francisco, Cal.
Portland Linseed Oil Works, Portland, Ore.



The roof that proves: sun-proof and rain-proof; needs no paint or repairs.

Pioneer Rubber Sanded Roofing is its own best advertisement—answers every need, where a sun-proof, rain-proof roof is required. Write for samples—and beautifully illustrated booklet.

Pioneer Roll Paper Co. Department 11 Los Angeles, California

Water Pumped by 50 H.P. Western

THE WESTERN

"From Our Shops—Straight to Your Crops"

The SATISFACTORY Engine For Irrigation

See our exhibit at "Made in Southern California" Exposition, Exposition Bldg., 316-318-320 So. Main St., Los Angeles

Western Gas Engine Co.

Factory and Main Office: 908-932 N. Main St., Los Angeles
Northern Branch: 22 First St., San Francisco, Cal.

The New Pomona Deep Well Pump

A reliable pump built by a responsible Company.
Being built with machine cut gearing and adjustable bearings, they run as smooth and noiseless as a watch.
You cannot afford to buy a Pump before investigating ours.
Send for Catalogue or what is better—COME TO POMONA.

Pomona Manufacturing Co.

Pomona, Cal.

THE

Latest Deep Well

Guaranteed to deliver from 100 gallons per minute upwards, depending on the diameter and capacity of well, from a depth of 50 to 300 feet below the surface. Can be either belt driven or direct connected to electric motor as occasion requires.

Write for Catalogue 46B.

Byron Jackson Iron Works

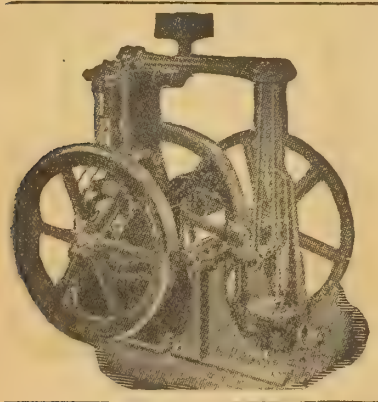
Turbine Pump

A deep well pump that has no valves or plungers to wear or get out of order, no gears, consequently no noise or breaking of teeth.

Compact, durable, always primed and ready to operate, constant flow, hence increased capacity of well.

This type of pump is fast taking the place of Vertical Steam, Deep well Plunger and Propeller Pumps.

Main Office and Works:
Carlton Station
West Berkeley, Cal.



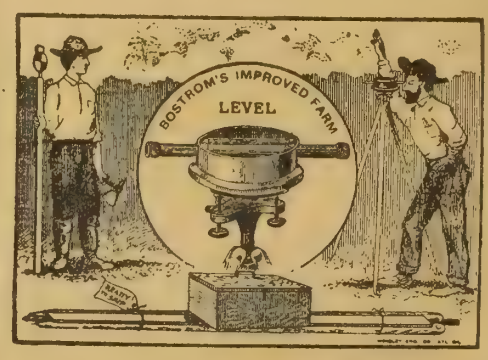
A Handy Little Engine

Just the thing to run the feed cutter, the pump, the churn, the grinder, or anything on the ranch. It's well named

The Little Wonder

Write or call on

Wm. Gregory
602 No. Main St. Los Angeles, Cal.



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Used for irrigation and drainage work. Cheapest and best level yet invented for farm use. Has the latest patented improvements in simplicity and usefulness. Can be operated by any one. Price including telescope tripod and target rod $15.00.

PALACE HARDWARE COMPANY
581 Market Street, San Francisco.

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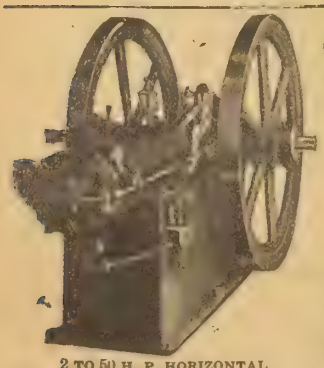

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STOVER GAS ENGINES

The simplest and the best. We have had long experience installing pumping plants. We know our business. See us before you buy. 2 to 50 H. P.

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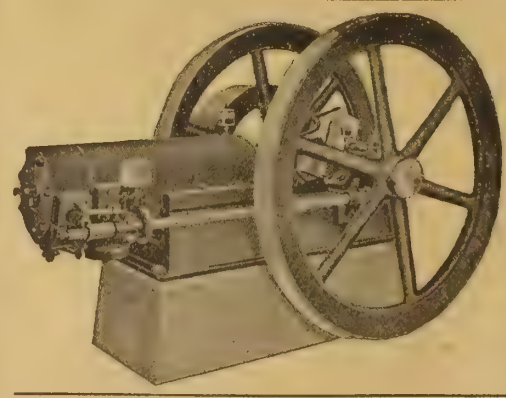
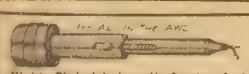


HERCULES ENGINES

At Less Than Agents Prices

Save money by purchasing a **Hercules** during the month of February, for cash. Strictly high-grade, latest improvements, vertical or horizontal. Great big discount **during February only.** Get our circulars and prices.

The Hercules Gas Engine Works
351 Market St., San Francisco



REPAIR YOUR OWN HARNESS

Nickle Plated Automatic Sewing Awl

Carries waxed thread [illegible] Unbreakable, and does not get out of order [illegible] Makes lock stitch, and sews anything from a belt [illegible] Carry it in too box, ready for instant use. Sent prepaid for $1.50. Reliable Agents wanted.

THE E. L. YOUNG COMPANY
530 Copp Building, Los Angeles, Cal.

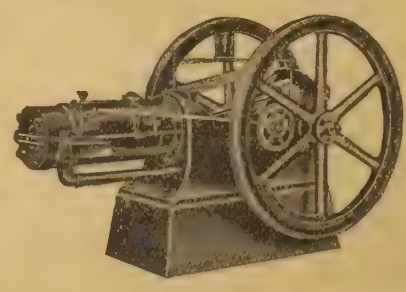
Crimson Winter RHUBARB

$1.50 a dozen, $6.00 per 100, $40.00 per 1000. Now is a good time to plant. Pedigreed Stock. Fruit Trees and Berry Plants of all kinds.

J. B. Wagner, Pasadena, Cal., 'Barb Specialist.

Commercial Gas Engines

Pump More Water



a given height with one gallon of No. 2 distillate than our competitors. Send for Bulletin No. 12 and see how we do it.

Commercial Engine Co.
953-955 No. Main St. Los Angeles, Cal.

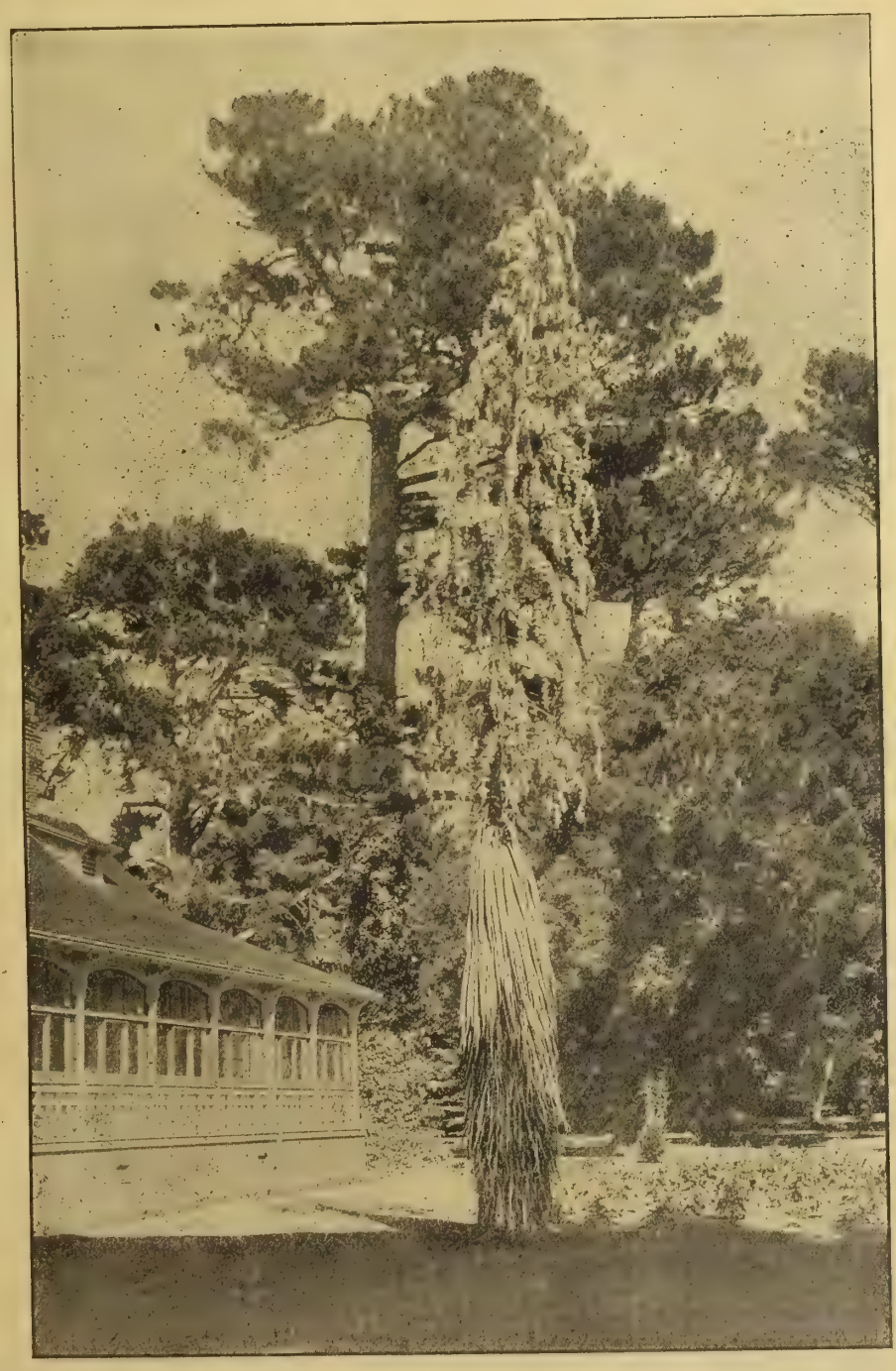
California Cultivator

Published Weekly — One Dollar a Year

Los Angeles — February 11, 1909 — San Francisco

A Monterey Pine at Home

A Scene Near the Town of Monterey



COURTESY OUT WEST MAGAZINE.

THE GREATEST CREAM SEPARATOR Money Can Buy

Sharples Dairy Tubulars have the finest known method of oiling. The driving gears, and the ball bearing which supports the bowl, are enclosed in the head of the machine. A spoonful of oil is simply poured into the gear case once or twice a week. The lower gear wheel dips into this oil and throws it in a spray over all the gears and the ball bearing. The oiling is perfect, is never forgotten, causes no trouble. All running parts are easily reached simply by lifting the gear case lid.

Sharples 1909 Tubular "A" Cream Separators are positively unequaled. Money can not buy, nor experience recommend, any other as good.

We have manufactured cream separators for 29 years. After making common "bucket bowl" separators for 20 years—the kind **all other** separator manufacturers **still** make—**we discovered that no "bucket bowl" separator can ever prove entirely satisfactory.** The bowls in all common "bucket bowl" separators are built and run up-side-down, exactly contrary to the law of gravity and every law of mechanics.

To overcome this fault; **still found in all other separators,** we invented, patented and manufactured the

Suspended Bowl Sharples Tubular

The Tubular has been on the market about ten years, is built in the biggest, finest separator factory in existence and is sold in great numbers all over the world. We also have Tubular factories in Canada and Germany.

Sharples 1909 Dairy Tubular "A" Separator has handsome, one piece frame equipped with plumb bob for quickly leveling the separator and keeping it level. It has waist low supply can; enclosed, dust proof, self-oiling gears; light, bottom fed bowl, hung below a single ball bearing. The bowl has no complicated inside parts. The Tubular is extremely simple and practical, is washed in 5 minutes, is approved by all women as easiest cleaned, turns easiest, skims fastest and best, wears longest. Look at the pictures, then write for Catalog No. 260.

The unequalled simplicity and perfect construction of Sharples Dairy Tubulars make them wonderfully light running, surprisingly convenient, remarkably durable, surpassingly efficient. Every Tubular is guaranteed forever against all defects in material or workmanship. Medium size Tubulars can be turned by one who is seated.

The Sharples Separator Co.

Toronto, Can. **WEST CHESTER, PENNA.** Portland, Ore.
Winnipeg, Can. Chicago, Ill. San Francisco, Cal.

HIMALAYA BERRY

Send for Descriptive Catalogue

500,000 Berry Plants Ready to Ship

San Martin, Cal., Dec. 16, 1908.
A. Mitting, Santa Cruz, Cal.
Dear Sir :
Enclosed find check for $240.00. Please ship me the following Berry Plants :
750 Texas Exergreen Blackberry
1200 Superlative Raspberries
2000 Burbank's Phenomenal
400 Mammoth Blackberries
Yours truly,
C. B. Chrysler.

San Martin, Cal., Jan. 12, 1909.
A. Mitting, Santa Cruz, Cal.
Dear Sir :
The Berry Plants arrived in A No. 1 shape and planted. I wish to thank you very much.
Yours truly,
C. B. Chrysler.

A. MITTING
Santa Cruz, California

California Cultivator

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Cantaloupes Under Arid Conditions

An Instructive Article by Prof. R. A. Forbes of the Arizona Experiment Station

CANTALOUPE growing, as developed since its origin near Rockyford, in 1885, requires unusual judgment and cultural skill on the part of the farmer. Cooperative organization and good business management are also essential, for only by these means can the crop be properly timed and prepared for shipment, and necessary arrangements made with transportation and selling agencies.

In Arizona the first noteworthy acreage of cantaloupes was grown in Salt River Valley in 1899. Since that time the industry has steadily expanded until, in 1908, 368 cars of melons from about 1250 acres were shipped through five growers' associations, principally to markets east of the Mississippi.

Climate for Cantaloupes.

The most important prerequisite to successful cantaloupe culture seems to be an arid or semi-arid climate. In such a climate, in Colorado, under irrigation, melons from Eastern seed developed the superiority which gave rise to a new industry. An early growing season is an added advantage in that it gives the producer a wider range, in point of time, of markets for which to calculate his plantings. Dry, sunny climate, early seasons, fertile irrigated soils, and necessary commercial facilities are all to be found combined to excellent advantage in the irrigated valleys of the arid Southwest.

Soil.

Cantaloupes are grown to excellent advantage on light warm loams properly fertilized by the addition of the organic matter and nitrogen in which our desert soils are usually deficient. Heavy soils may also be used for cantaloupe culture, but are less easily prepared and tilled during the progress of the crop. Old alfalfa ground is most excellent for canteloupe culture; and well rotted barnyard manure is effective. Bermuda sod plowed up and exposed to the sun without irrigation the preceding summer makes excellent cantaloupe ground, the intensive cultivation necessary serving both to benefit the crop and to restrain this formidable weed.

Alkaline lands should be avoided, since soluble salts in excess, even though insufficient to kill the plants, are commonly believed to be detrimental to the quality of the melons.

Layout of the Ground.

The soil should be so arranged that the rows may be irrigated without submerging the vines and the fruit. One good way to accomplish this, and also to fertilize the soil, is as follows: The field is first irrigated, plowed, and harrowed to a condition of fine tilth. With a twelve-inch plow, at intervals of six feet, double furrows are then broken out, going and returning along the same lines. In the deep, wide furrows thus formed well rotted barnyard manure is distributed to a depth of three or four inches, then plowed in and the field again harrowed level. By this plowing towards the middles of the spaces between the fertilized furrows the soil is finally left in oval ridges separated by back furrows for irrigation. The rough furrows and ridges are then finished with a harrow and the newly prepared ground irrigated to establish the water line for guidance in planting.

Seed.

Seed should be most carefully selected with reference to flavor and appearance of the fruit; to good shipping characters, including small cavities and heavy netting; and to a tendency to produce melons of standard size. Early strains are desired for some situations; but in Arizona rust resistance is not a necessary character as this class of diseases is little to be feared under our arid conditions.

Seed should be purchased only from most reliable sources. Rockyford growers are at present the principal means of supply. Some associations go so far as to send a representative to Colorado to select in person the seed melons from which to supply their members. Home-grown seed in Arizona is sometimes sprouted and inferior, due to the heat to which the mature melons are oftentimes subjected in the field.

About one pound of seed is required for an acre. Cantaloupe seed improves to some extent with time, and is stated by experienced growers to give more satisfactory results at two years of age than at one.

Planting.

With irrigating furrows six feet apart, rows may be planted one on each side of each furrow. The hills should be ten feet apart in the rows, "breaking spaces" between rows. On this plan the ground will be quite uniformly occupied, with a distance of about six feet between adjacent hills.

With a hoe each hill is planted by making a small furrow a foot long just above the water line. About ten seeds are dropped in this furrow, covered an inch deep, and the soil pressed down lightly with the blade of the hoe. After early plantings, when frosts are feared, a second set of hills may be planted alongside the first, ten days or two weeks later. When danger from frost is past, while the plants are still small they are thinned to one or two of the strongest to each hill. Care must be taken not to overcrowd the ground with vines, as a high percentage of pony melons will follow. Under Arizona conditions the six foot spacing of hills recommended above, with not more than two plants in the hill, gives best results.

Irrigation and Cultivation.

A dependable supply of irrigating water is essential to successful cantaloupe culture. Early in the season when the plants are small and the irrigating supply is cold, water should be applied sparingly. But between the setting of the crop and the ripening of the first fruits, when both vines and melons are developing rapidly and when the weather is usually hot and dry, frequent and copious irrigation is necessary, for if water is stinted at this time a large percentage of small or pony melons is likely to follow. During the picking season water should again be sparingly applied—just enough to prevent the vines from wilting. This procedure gives quality and solidity to the melons, and incidentally maintains the field in convenient condition for picking.

As long as the vines will permit, the middles should be kept free of weeds by means of a one-horse cultivator, and the furrows run through with a small plow after each irrigation. The young plants should also be hoed by hand two or three times. When the ground is once well covered with vines weeds will make but little headway, even Bermuda grass being effectually checked by the dense cover.

Marketing the Crop.

The first shipment of melons from Arizona in 1908 was made at Yuma, June 13, about 130 days after planting. The season closed August 17 in Salt River Valley.

The critical operations of picking, packing, and shipping are usually under the supervision of the receiving company's agent. Riper grades are sent to local and coast markets; but for more distant Eastern markets the melons must be picked considerably before full maturity, when they part easily from the stem. In favorable weather the melons ripen so rapidly as to require picking two or three times daily. At the packing shed, which must be provided with padded benches to prevent bruising, the cantaloupes are sorted into three sizes—Ponies, Standards, and Jumbos, which are packed each in its own sized crate. The wrapped and crated melons are then hauled in spring wagons to the Association shed, where they are inspected and received usually by a representative of the commission firm handling the crop. The accepted melons are shipped in refrigerator cars, for the most part to Eastern markets.

Enemies.

The two principal enemies to cantaloupes thus far known in Arizona are the melon aphis and nematode worms. The aphis is especially favored by the mild climatic conditions of the Southwest, and is always to be expected even in new districts. It is much affected by extremes of temperature, being repressed by cold or wet weather and also by extreme heat. In southern Arizona the aphis is usually in evidence early in June, increasing rapidly until the crop is harvested and the vines destroyed. Kerosene emulsion checks but does not usually exterminate the aphis, which is difficult to reach with spraying apparatus on the under sides of the leaves where it is chiefly to be found. Preventive measures are more satisfactory than curative ones in the case of the aphis, which is first established at comparatively few points in a field by means of old females which have wintered over in protected situations. These pioneers colonize on the young vines early in the season, at which time, when the plants are small and easily treated, the grower would do well to assume the presence of aphids and spray the whole of his planting thoroughly with kerosene emulsion, diluted thirty times. Professor C. P. Gillette, of the Colorado Experiment Station, recommends fumigation with hydrocyanic acid gas, which he accomplishes by means of washtubs and potassium cyanide at the rate, to each three cubic feet of space, of one gram of cyanide dissolved in sulphuric acid and in the usual manner. The fumigations are continued five to eight minutes and, by means of several tubs used in rotation, may be rapidly operated. It is common practice, also, among growers to burn or bury infested plants early in the season. These are discovered by the wet or greasy appearance of the infested leaves due to the excretion of honey dew by the aphids or by the presence of a species of ladybird which preys upon them. It is important at the end of the season to burn all the old vines, thus lessening the number of possible hold-overs for the following year.

Nematode worms occasionally damage or destroy the roots of cantaloupe vines, especially when grown after crops favoring the development of these organisms, such as tomatoes, chili, egg plant, peas, and preceding crops of melons. Affected roots maye be recognized by their characteristic swollen, knotty appearance.

No satisfactory method is known for the eradication of nematodes, but infested ground may be sown to unaffected crops, such as alfalfa, and new ground employed for cantaloupes.—R. A Forbes, University of Arizona.

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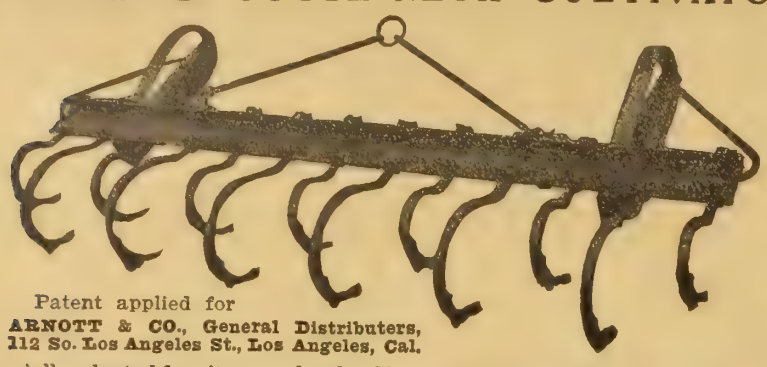

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METHODS OF CONTROL OF GUMMOSIS.

FROM Bulletin 200 of the California Experiment Station we quote as follows from Prof. R. E. Smith's observation on control of Gummosis:

Avoid Unfavorable Conditions.

The most important consideration in regard to the control of gummosis is the fact that since the disease is brought about solely by unfavorable conditions it can be more easily prevented by avoiding those conditions than it can be cured after once started. By the same reasoning, the cure of the disease lies chiefly along the line of improvement of the conditions which have produced it rather than any treatment of the tree itself. The avoidance of gum disease should be one of the chief considerations of the grower starting a citrus grove, particularly with lemons.

In the choice of location heavy, wet ground should be avoided, unless it can be drained or improved in some manner.

Sour Orange Root.

On land which is otherwise desirable for planting, but has some qualities which would make it liable to gum disease, considerable immunity can be obtained by planting trees budded upon the Florida sour-stock root. We have made careful inquiry as to the success of trees upon this root in California, and find that there is ample experience to justify its use in heavy soils. The root has no advantage over the ordinary sweet seedling, except for the much greater freedom from gum disease which it imparts. Trees grown on the sour-stock are rather slow of development during the first few years, but bear abundant crops of fruit, and as time goes on they overtake those of the same age on sweet-stock, so that in mature trees there is practically no difference on the two roots. We strongly recommend the use of the sour-stock root for all citrus trees to be planted on heavy soil which is liable to gum disease.

High Budding.

Another important consideration for avoiding gum disease is high budding of the nursery stock. As we have previously shown, trees which are affected in the orchard usually have the point of budding deeply buried in the soil, and this condition contributes greatly to the disease. This may be easily avoided by budding the trees a foot from the ground, a practice which has no disadvantage except the somewhat longer time required to produce such a tree. Possibly an extra season may be necessary to get the young seedlings up to sufficient size to bud them at the desired height. The advantage gained, however, is much greater than this slight objection. Whether the trees are high-budded or not care should be taken not to plant them too deeply in the ground. Gum disease is induced in a great many young trees the first year in the orchard by planting them with the bud union below the surface, where they become covered with soil. This is extremely undesirable.

Cultural Prevention.

The prevention of gummosis in the orchard is entirely a matter of the avoidance of the conditions which have been shown to be the cause of the disease. The accumulation of soil or water about the trunks, allowing the same soil to become hardened, lack of drainage or cultivation, or the accumulation of surface water, either from irrigation or rain, must be carefully avoided. All these precautions are particularly necessary in places where the soil conditions are such as to favor the disease. In such places special care must be taken to keep the ground thoroughly stirred close up about the trunk of the trees and prevent either soil or water from accumulating about them. If this is accomplished one need have little fear of gummosis.

Improvement of Soil Conditions.

The treatment of affected trees must consist first of all in an improvement of soil conditions. It is idle to work upon the trees themselves or to look for any remedy for application to the affected parts until the original conditions which produce the trouble have been corrected. If this is not done, the work done upon the trees will be thrown away, since gummosis will begin again at the first favorable time. In treatment of affected trees, one should therefore begin with a thorough stirring of the soil about the trees clear up to the trunks. It will, no doubt, be necessary to do much of this by hand with a mattock, but there is no other method of accomplishing the desired result. After thoroughly loosening up the soil a space of at least two feet in diameter must be cleared about the trunk, removing the accumulated soil down to the roots, exposing the bud union. In many cases a foot or more of washed-in soil will be found at this point.

Cutting the Bark.

After this has been done, work may commence upon the tree itself to improve its condition. The bark of the tree where gumming has occurred may be cut out to some extent to relieve the pressure and permit the escape of the accumulated gum. In some cases the whole bark has been stripped off over all the affected portion, while in others only narrow strips of bark have been taken out, running from the crown up to the main fork on several sides of the tree. The latter process, on the whole, is thought to be the better method.

Stripping.

If the bark is stripped off entirely a large area is exposed on badly affected trees, and in some cases it is necessary to entirely girdle the tree. Under improved soil conditions much of this bark would be likely to recover and remain alive, or if it dies it serves to protect the trees and cover the new growth of bark, which often comes beneath it. Many cases, however, have been successfully treated by stripping off all the bark which showed discoloration beneath it, cutting out cleanly about the edges and painting over the exposed surface with some protective covering. In such treatment the bark should be peeled off without scraping the surface of the wood, as often much of the cambium layer is still alive and will form a new layer of bark.

Treatment of Wounds.

For covering the exposed surface, a form of grafting wax has been found most satisfactory. This is prepared

by melting together 4 pounds of resin, 1 pound of beeswax, and 1 pound of raw linseed oil. After thoroughly mixing, the wax is painted on with a brush while still warm and liquid. In many cases a considerable amount of new bark can be seen forming under this transparent wax, and the tree makes a decided recovery. A great variety of other materials have been used for covering the wound, but none of them appear to be as satisfactory as the wax.

Slitting.

The method of slitting the bark, taking out one-eighth inch strips on four or five sides of the tree, through both the affected and the healthy parts, is usually most advisable. A special knife can be made for this work with which the slitting can be done quite rapidly.

Surface Applications.

After cutting the bark in this manner some application may be made to the surface, and for this purpose many different substances have been tried. The application of neat's-foot oil, recently recommended by Judge A. F. Call, of Corona, appears quite effective, the oil tending to soften the bark and gum and keeping the latter from collecting in hard masses on the bark. A one-tenth solution of caustic potash in water has also been used with good results. Others have used crude carbolic acid, sheep dip, and a great variety of other materials. The liquid substance recommended should be painted over the whole trunk of the tree, making a thorough application.

Soil Improvement Most Important.

The whole matter of the treatment of the tree itself is entirely of secondary importance. If proper soil-conditions can be obtained and maintained, the tree will heal itself, if not too far gone. The only benefit to be derived from any method of bark cutting and surface application is to promote the healing of the wounds caused by the disease.

Pruning.

After treating the trunk of the tree it is well to cut back the top to some extent, reducing the amount of branches in proportion to the amount of bark lost from the trunk.

After the treatment of the soil and trees has been accomplished, measures must be taken to prevent as far as possible the recurrence of the conditions which brought about the trouble. When possible to do so, the general level of the soil about the tree should be cut down so that the point of bud union will be well above ground.

Use of Sand About Trunk.

If it is possible to do this, the hole which was dug out about the trunk must be kept open so that the soil will not accumulate again at that point, and at the same time this hole must not be allowed to become a receptacle for irrigation and rain water, thus making the conditions worse than ever. In such cases the practice of filling the space with coarse sand has been resorted to quite successfully, thus preventing the accumulation of water to quite an extent, and at the same time not producing a layer of hard soil about the trunk.

WATER IN THE MOHAVE DESERT.

The southern part of the Mohave Desert, the last strictly arid region crossed by tourists who enter Southern California by the Santa Fe or the Salt Lake route, contains small areas in which underground waters have been more or less developed. In a few of these areas the waters are sufficient in volume to serve as important sources of supply for irrigation. Although the climate of this desert, which lies about 3000 feet above sea level, is more severe than that of the valley of Southern California just to the south, it is nevertheless so mild that splendid crops of fruits, alfalfa, and grain can be raised wherever sufficient water for irrigation can be procured. The extensive mining and railroad development that has taken place in this part of the desert within the last few years has resulted in a local demand for all the agricultural products that can be raised, and even more. Hence the United States Geological Survey is constantly receiving inquiries for definite information not only as to meager supply of surface waters that flow from the San Gabriel and San Bernardino mountains to this desert, but also as to the quantity and availability of the ground waters that may exist beneath its surface. The desirability of preparing a report which would serve as a response to these inquiries has long been recognized by the Survey, but demands for work in other more important fields have been so urgent that an investigation of the Mohave Desert has not been possible until the present year.

This work has now been assigned to H. R. Johnson, a Stanford graduate and a geologist who has had varied experience in California problems. Mr. Johnson expects to spend two or three months collecting data in the field and will then return to the Washington office, where the information obtained will be compiled and published in a report that will be useful to all who are interested in the development of this region.

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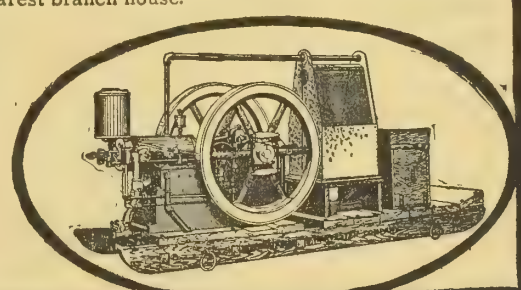

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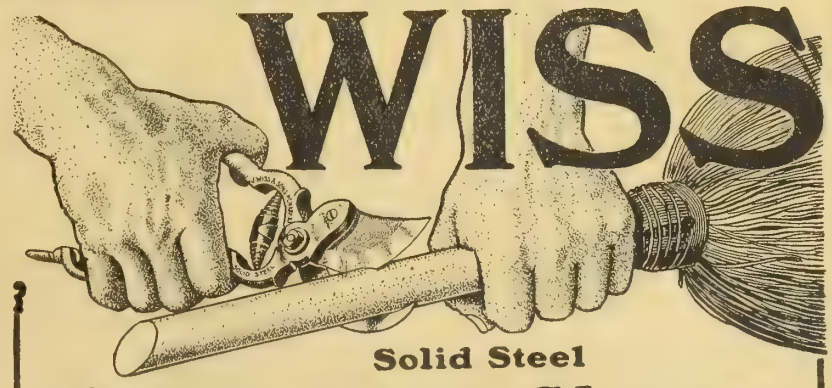

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Spraying for the Scab

The following was written by W. H. Volck entomologist for Santa Cruz and Monterey counties for a small bulletin which he issued to fruit growers of those counties.

SPRAYING with the Bordeaux mixture is a perfect remedy for the scab. Results from Bordeaux are certain provided the application is made in time. That is, the spray must be on the trees before the spores of the fungus have germinated. Under the conditions prevailing in 1906 Bordeaux applied in May along with the first coddling moth sprayings entirely prevented the disease, but this time of spraying was in many cases too late in 1907. The experience of that year has shown that in order to be sure of the scab the early attack must be sprayed for.

The early attack of the scab is prevented by spraying just before the blossoms open. If for any reason the trees cannot be sprayed just previous to the opening of the blossoms, apply the Bordeaux while they are in bloom. A few blossoms may be injured, but not to a serious extent.

The time alloted to the first scab spraying is short, and the orchardists should be ready to take advantage of it. A few of the blossoms will have opened and the great majority will be just ready to burst into bloom.

The Bordeaux Formula.

For the first scab spraying use 5 pounds of bluestone and 6 pounds of lime to 50 gallons of water.

Second Scab Spraying.

Two sprayings with the Bordeaux mixture should be given to insure good control of the scab, and then the apples should be carefully watched to determine the result. If any scabbing is noted a third application should be given.

The second spraying is applied along with the first application for the coddling moth, and the Bordeaux formula should be 3 pounds of bluestone and 4 pounds of lime to 50 gallons of water. If the first spraying has not been applied use the 5-6-50 formula.

The two sprayings above mentioned will control the scab on the Newtowns and most other apples. Pears and White Winter Pearmain apples should receive three applications—one when the fruit has attained the size of marbles. The Winter Nellis pear is very subject to the scab, and has not fruited well for several years, largely on this account. With this variety it may be well to give two sprayings with the Bordeaux mixture before the blossoms open. The first spraying should be just as the blossom clusters are unfolding, and the second as with other varieties, just before the blossoms open.

All applications for the scab, as indeed for any other kind of spraying, should be thorough. Spray the tops of the trees well.

Lime-Sulphur Solution and the Apple Scab.

There is considerable discussion concerning the possibility of controlling the scab with the lime-sulphur spray, and there is good evidence to show that it will prove effective. Perhaps one spraying just before the blossoms open might entirely control the disease. It must be remembered, however, that the use of this spray as a scab remedy is in the experimental stage, and the orchardists should go slow for the present.

For the purpose of scab control the solution should be used at a much reduced strength, from 1 gallon in 15 to 1 in 20 gallons of water. The lime-sulphur solution will do no injury to the trees when applied just before the blossoms open, but is likely to cause the falling of leaves if used after the fruit sets.

Caution.

The lime-sulphur solution should never be mixed with arsenate of lead. Such a mixture results in the decomposition of the arsenate of lead, making it very injurious to the trees.

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Uusigned communications receive no attention.

Care of Orchard.

Kindly inform me proper way to care for young orchard, peach, apple and pear trees. It has just been planted this month. When should I spray? What ingredients should I use? Also give other information regarding general care. I am a beginner in this work in California.—Z., Nestor.

The best information to give the inquirer is to observe closely the methods of work amongst neighbors who have had experience with like fruits. The next step should be to buy the best book procurable touching upon the subject of orchard care. There will continually be questions coming up which cannot be anticipated in space at command to give the extended information requested. As to pruning the young trees we would refer the inquirer to the article which appeared in the Cultivator of January 14. But in addition to that there is sufficient to be learned to make a good sized book upon the subject of pruning. Spraying is done to subdue insect pests or as a preventive of fungous diseases. To mention each of these and give a remedy is to write another small book. First let the pruning of the young trees be thorough and intelligently done, then give the ground thorough culture in order to preserve the abundance of moisture which has been given us this year. If the trees were bought from a clean nursery, fungous and insect diseases should not be a factor with the first year's work.

San Jose Scale.

What is the matter with my apple trees? In cutting the bark I find brown spots running almost to the wood. I enclose sample of wood and bark.—J. H. S., Santa Ana.

The brown spots underneath the outer bark are simply caused by San Jose scale which have covered the

trees and inserted their sucking tubes through the outer bark. If you will make close examination of the bark, especially of the younger and tenderer twigs you will find them covered with little specks which are the mature insects of the San Jose scale. Spray at once with the sulphur and lime solution.

Flats—Whitewash.

The Q. A. L. article on planting tomato seeds was just what I wanted but what does he mean by flats? Please give formula for applying whitewash to fence posts. The Cultivator is a paper I cannot get along without. Have taken it now for six or seven years.—C. J. Barclay, Uplands.

By "flats," seedsmen refer to a small box the sides of which are made of 1x3 stuff, usually 18 inches long, and the bottom often of redwood shake. This makes the inside measure of the box or "flat" about 16x18x3 inches deep. A good whitewash is made by adding a fairly strong brine of simple salt and water to the whitewash made of lime and water. The salt "sets" the lime and prevents the rain from washing off and makes a very cheap and durable covering. The famous government whitewash of which so much is spoken, is made as follows: 2 pecks unslaked lime, 1 peck common salt, 3 pounds rice flour, ½ pound Spanish whiting, 1 pound clean and white glue, a sufficient quantity water. Slake the lime in a vessel of about 10 gallons capacity; cover it, strain, and add the salt previously dissolved in warm water. Boil the rice flour in water; soak the glue in water and dissolve on a water bath, and add both, together with the whiting and 5 gallons of hot water to the mixture, stirring all well together. Cover to protect from dirt and let it stand for a few days, when it will be ready for use. It is to be applied hot, and for that reason should be used from a kettle over a portable furnace.

Control of Sex.

I wish to learn how to select breeding pens of thoroughbred chickens to produce more cockerels from one pen and in another to produce more pullets.—H. L., Covina.

Our inquirer is asking what the scientific world has asked many times, a question which has never yet been satisfactorily answered. The controlling of the sex by various plans of mating has been attempted also by selection of different shaped eggs, but every such theory which has ever been tried has failed to work out when careful observations were made. There is no known way of determining or controlling the sex.

Value of Old Bones.

What is the value as fertilizer of old bleached bones ground into meal? What value as a fertilizer have the ground bones which have been covered for a long time with drainage from slaughter house, ground into meal? Would a green bone cutter make it fine enough for fertilizing purposes? —Subscriber, Corning.

The only way to get exact value where one has sufficient quantity to justify is to have analysis made. They are however without question well worth using if they can be pulverized. We doubt not, even buried at roots of newly planted trees, they would all be absorbed and taken up by the roots before many years. Many tons of valuable fertilizer have been made from old and bleached bones. Those which are saturated with the drainage from slaughter house would possibly have a little added value from saturation with blood and matter which carries a large percentage of nitrogen. As to using a green bone cutter, however, to accomplish results, we imagine one's time, if of any value whatever, could be better used to other purposes.

Cutting Tops after Budding.

In citrus nursery stock do you advise cutting the seedling back say four inches above the bud when it starts to grow, thus leaving the trees without any leaves; or would you only cut off the lateral branches, allowing much of the seedling stock to remain until the bud is well grown. Will not the root system develop better and the vitality of the tree be better preserved if part of the foliage is allowed to remain?—D. E. F., Riverside.

The theory which you advance is one of very common belief and is practised by some. Many nurserymen have followed the plan, instead of cutting off the entire top four or six inches above the bud, of making a slight cut on one side, then bending or breaking the tree over, allowing the entire top to remain but broken over so as to retard the greater flow of sap. The theory, as you advance, is that it encourages larger root growth. But these tops being in the way of cultivation, being such a trouble maker in handling the fu-

(Continued on Page 167.)

PREPAID

Raspberries, Surprise, Superlative, Kansas Blackcap, 75c doz.
Blackberries, Mammoth and Rathburn, 75c doz.
Phenomenal Berry, London Red, Golden Queen, 75c doz.
Cuthbert, Gardena and Lucretia Dewberry, Logan, 50c doz.
Asparagus Roots, Barrs, Palmetto, Columbia, 1 yr., 30c doz.
Walnuts, Fruit Trees, Flowers.

Pioneer Nursery, Monrovia, Cal.

Trees French Prunes on Peach, and Apricots, Muirs and Tuscan Clings, and many other varieties of Peach Trees; all fine budded stock. Large stock of all the leading varieties of Apples, grafted on whole roots and free from all pests. Also a fine stock of Cherries, Pears, Plums, etc. Send for price list.

A. E. SCHEIDECKER **SEBASTOPOL, CAL**
Prop. Pleasant View Nursery.

TREES

The New Fruits

Santa Rosa Plum
The Rutland Plumcot
The Opulent Peach

And the usual full and complete assortment of citrus, deciduous and small fruits, all of which are graphically described in our new

Twentieth Anniversary Catalogue

a copy of which we want every one to have who is interested in planting trees; it is free.

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ONTARIO, CAL.

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Pioneer Rubber Sanded Roofing is its own best advertisement—answers every need, where a sun-proof, rain-proof roof is required. Write for samples—and beautifully illustrated booklet.

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SPECIALTIES: Franquette Walnut, grafted on Black Walnut root. Absolutely genuine.

Wonder Walnut.—New: The largest, most prolific, and youngest bearer known. Twelve nuts grown on a **one year graft** in nursery row, placed side by side, measure 22 inches; each measuring 5½ to 6½ inches in circumference. Thin shell, blight resistant. Fully tested for years. Limited stock of grafting wood and trees for sale.

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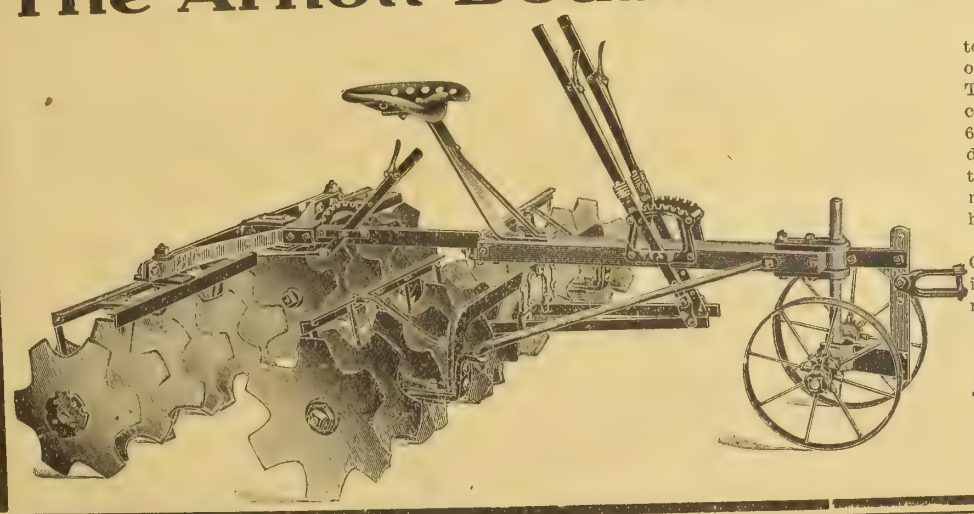

Illustration is given above of a new tool designed especially for California orchards and general field work. This consists of a combination of two cutaway pattern disc harrows, each 6 feet in width, each having 12-16 in. discs. The rear harrow can be detached by removing one pin. All harrows furnished with foretruck and 4-horse tripletrees.

Price f. o. b. Los Angeles $60.00. Complete descriptive circular showing several views of the harrow mailed on application.

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112-18 So. Los Angeles St.
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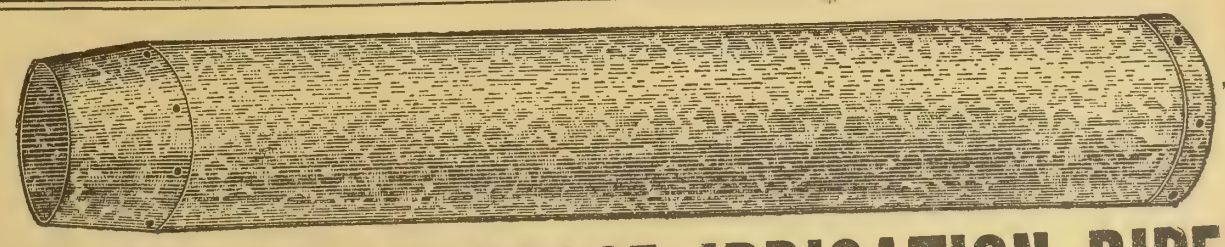

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LIME & SULPHUR SOLUTION

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It is the best known insecticide and fungicide; is a tonic to the tree; is prepared on scientific principles; is absolutely uniform; every barrel that is made at the factory being of just the same strength, namely, 33% solution, Baume test; is free from sediment; is ready for use in the orchard without having to be boiled; one barrel of 50 gallons makes 600 gallons of the strongest spray, and is by far cheaper, at the reduced price at which it is offered this year, than any farmer can afford to make a home-made, imperfect solution.

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THE TOLEDO REX SPRAY CO., Toledo, Ohio.
THE REX COMPANY, Omaha, Neb.

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25,000 Grafted and Seedling Walnuts from best selected seed and grafts. 25 kinds of Peaches, clean and well rooted; 20 varieties Apples; a choice stock of Royal 'Cots; 4000 Satsuma and all other leading Plums; Oranges, Lemons, Grapes, Palms, Roses and Ornamentals. Anything in the nursery line. A fine, well assorted, clean and thrifty stock. My personal attention is given to selecting best buds, grafts, seeds and cuttings to propagate from.

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Box 64 Sales Yard Cor. 3rd and Main Sts., Santa Ana, Cal.

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Full Line of Commercial Sorts

Grown on Virgin Soil, True to Name, and Healthy. Nineteen years of fair and square dealing makes us the most popular nursery in the West. Wilson's Trees and Grape Vines long noted as the very best. Catalog and Price List for the asking. Address

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75 varieties of Sweet Peas Separate Colors, 5c per Pkt. 15 Leading Varieties, post paid, 50c. 4 Varieties, that bloom in 45 days, 25c. This is the best time to plant.

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ROSE BUSHES, ORNAMENTAL, SHADE AND STREET TREES.

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Chas. Winsel, Seedsman
251 So. Main St. Los Angeles, Cal.

Small Fruits and Vegetables

THIS MONTH.

EXTENSIVE plantings of early potatoes made this month in many sections. Early rose, early Ohio or other early kinds should be selected. Plant rhubarb, horseradish, asparagus and onion sets. Make liberal sowing of peas, beets, lettuce, turnips, carrots, radishes and spinach. Raspberries, strawberries and all other small fruits should be planted at once. Grapes and in fact all deciduous fruits can not be planted too soon.

Ground should be plowed or spaded for the later plantings of things of the more tender sorts. In making ready this ground a liberal spreading of well rotted manure will prove profitable.

ORIGIN OF THE TOMATO.

THERE are people now living who remember when the tomato was thought to be poisonous. It was called the Jerusalem apple and was kept on the mantel as an ornament. Boys in those days were warned against eating tomatoes, but seeing the birds eat them they soon found the birds knew what was good. The tomato is a native of Peru, but grows spontaneously throughout Mexico and as far north as Texas and California in a form closely approaching the cherry tomato of our gardens. It was introduced in Europe as early as 1561, and was eaten there dressed with pepper, salt and oil, much as many people eat it today. In 1597 it was grown in England, but used only for ornament for many years. In 1700 there is mention of seven varieties—one pale red, one striped, two yellow, one white and one red—but its culture was neglected, for in 1819 only four red varieties were mentioned. It was introduced in Philadelphia in 1789 and in Salem, Mass., about 1802. Its cultivation for the market began in 1829, but it did not find a place in the premium lists of horticulturist societies until 1839. In the earlier catalogues mention is made of a type called the "large red," which was followed in 1862 by the "Fiji Island;" in 1869 by the "Cook's Favorite," and in 1866 by the "Tilden."

Bulletin 117 of the agricultural experiment station of West Virginia gives the following information:

A. W. Livingston of Columbus, O., originated a great many good varieties, the first of which was the "Paragon." In 1880 he produced the "Perfection," and during the next ten years a number of other varieties. We had a call from Mr. Livingston in 1880 and were very greatly interested in his methods. He appeared to rely entirely upon sports. He bought seeds from the canneries by the tens of thousands, planted them and studied them, and when he found a sport that had the shape and color that he desired it was carefully preserved and propagated.

The wisdom of his methods has been shown by the experience of the various experiment stations. None of them have succeeded in making any great improvement through hybridizing. Both the Maine experiment station and Cornell university have endeavored to produce hybrids by crossing two species, but the result is that the hybrids are unstable and the fruit too small to be of any commercial value. As varieties run out, which they will do in the course of time, the quality can be kept up mainly by adopting Mr. Livingston's method of hunting sports. It is a rather humiliating fact that nature does in her off-hand way what man with all his science and skill is unable to do. A number of our best varieties of wheat are sports. The same rule seems to govern both in the wheat field and in the tomato patch.—H. M. Daly.

GARDEN PEAS.

From February till summer all kinds of peas do best. The complaint is general—we don't get enough. Your own fault. People who plant a handful of one or two kinds must expect only to get a few messes which will be tantalizingly as skimp as sweet. The way to get enough is to sow the kind you prefer every fortnight during February, March, April and May, or else to sow in February at the same time the three best early, medium and late sorts and as each in turn gets beyond maturity, replace the first to mature by sowing a late sort, the next by sowing a medium sort, and the last by sowing an early kind.

How to prevent the peas from rotting in the ground, you say? Don't soak them before planting, and don't put manure close to them.

A good time to plant them is several days after a rain has soaked the ground deeply. In lieu of rain, let the hose trickle down a furrow till its whole length is saturated. Make the ground loose and level with plow and cultivator or spade and rake.

Dig a shallow trench 3 or 4 inches deep, spade-wide, rake in a little of the loose dirt, scatter the peas all over the trench, on the average 2 or 3 inches apart, throw in a couple of inches of dirt and tread it down, rake the surface, and dust it liberally with wood ashes; the latter is to keep the birds at bay.

There should be no more need of attention till, if rain holds off, an irrigation is necessary, in which case a furrow should be drawn 6 inches away on each side of the stems and a trickle from the hose allowed to gradually soak the entire ground, the surface afterwards being broken up and raked or cultivated lightly to retain the moisture. If green fly (aphis) is troublesome, dust the young shoots with tobacco dust. If mildew threatens, spray or dust with Bordeaux mixture.—Pacific Garden.

"QUIT YOUR KNOCKING."

Put your hammer in the locker;
Hide your sounding board likewise.
Any one can be a knocker;
Any one can criticize.
Cultivate a manner willing,
Though it hurts your face to smile
And seems awkward in beginning—
Be a booster for a while.
—Oil Mill Gazetter.

New Aunt—So you are six years old, Edith. How old do you think I am?

Edith—I don't know. We haven't got that far in 'rithmetic yet—Harper's Bazar.

Mother—What's the baby crying for now?"

Elsie—Freddy was trying to make him smile with the glove-stretcher."

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There is scarcely any limit to the possible improvement in seeds, but it takes time and money. We have been improving flower and vegetable seeds for over 50 years. More than 2000 people are working to make Ferry's Seeds suit you. Buy the best—Ferry's. For sale everywhere.
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All the Best Hybrids, all the Colors. 5c per oz.; 50c per pound postpaid.
Hopkins Tested Seeds
Everything for the Flower and Kitchen Garden. Generous packages 6 for 25c, 13 for 50c, 30 for $1.00, postpaid.
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Strawberry, Raspberry, Blackberry, Dewberry, Loganberry, Phenomenal berry and Mammoth Blackberry plants.
Be sure and send for Catalogs.
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February is the best month of the year for setting *Strawberry Plants.*
GROWER OF STRAWBERRY PLANTS ONLY
I have the *Best.* Price $2.50 per 1000. Write for *my* price on lots of 50,000 or more.
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18 Years in business.

Generally fruits over the valley will be two weeks in advance over last year from present indications.

The Ornamental Garden

THIS MONTH.

FERTILIZE the lawn. If manure is used see that it is thoroughly rotted so that it will carry no weed pests into the lawn. Bone meal is fine for a lawn. True up the edges and seed in with blue grass or clover where bare or where weeds have choked out the finer grass.

Plant such bulbs as amaryllis, agapanthus, cannas, dahlias, iris, tuberoses and even the early gladiolus may be set. From now on gladiolus may be planted every two or three weeks for continuous bloom through the summer.

Pansies, stocks, verbenas, and salvia can be transplanted from seed boxes to the open beds.

All deciduous shrubs and trees should be planted at once.

Bear in mind spring is fully on us and perfection of bloom next summer demands early attention to the garden this month.

GOPHER AND SQUIRREL PROOF BULBS.

Many are the blessings that Nature has bestowed upon this privileged land of California, but, against them there are a few which we may politely call "the reverse."

Gophers and Ground Squirrels are at the head of the list, as everybody who has done any gardening in California will be ready to testify. And in many cases it will happen that the most petted and cherished plants are likely to fall prey to the rodents.

"Eternal vigilance" is the only effective treatment to be recommended, but, unfortunately, it is not always within the possibilities of everybody. In order to mitigate the evil I believe in making known to the public that there exist some plants which will never be touched by ground squirrels or by gophers, not even in the driest seasons when food for them is quite scarce. The statements which follow are based on my own personal experience on my grounds at Montarioso, which, being entirely surrounded by pastures and wild brush, offered an ideal abode to those pests, now diminished in numbers but far from being exterminated.

To speak only of "bulbous plants," a favorite food for squirrels, I have found to be entirely immune from them and from gophers:

Amaryllis Belladona, the "belladona lily."

Chlidanthus Fragrans, the "Peruvian daffodil."

Hemerocallis Aurantiaca Major, the "everblooming Japanese day lily."

Hippeastrum Aulicum and other kinds, known under the name of "scarlet amaryllis or lilies."

Hymenocallis Calathina, the "large Peruvian spider lily."

Hymenocallis Caribaea, the ordinary "southern spider lily."

Narcissus Orientalis, the "Chinese sacred lily."

Pancratium Maritimum, the "Southern Europe spider lily."

Further experience is sure to add to this list of "immunes,' and I shall be most grateful for kind information of other people's experience, which will also make possible to compile a list of gopher and squirrel proof plants other than bulbs.—Dr. F. Franceschi, in Pacific Garden.

General Frederick D. Grant tells this story: "I was booked to speak at a large dinner in a town, and the toastmaster felt it incumbent upon him to make my path as smooth as possible. He therefore spoke of my father and said that I strongly resembled him. This had the desired effect on the people present and they gave me their best attention. Although I spoke as well as I could, I felt that every one was disappointed in me, and I sat down with relief that it was over. The toastmaster rose and smiled at me. Then he said to the guests: "Ddn't I tell you he was just like his father? He can't speak worth a cent.' "

IN THE CALLA LILY GARDEN.

DIAGNOSIS.

Into a general store of a town in Arkansas there recently came a darky complaining that a ham which he had purchased there was not good.

"The ham is all right, Zeph," insisted the storekeeper.

"No, it ain't, boss," insisted the negro. "Dat ham is shore bad!"

"How can that be," continued the storekeeper, "when it was cured only last week?"

The darky scratched his head reflectively, and finally suggested:

"Den, mebbe it's had a relapse."—Harper's Weekly.

Minister's wife:—"Wake up! There are burglars in the house, John."

Minister:—"Well, what of it? Let them find out their mistake themselves."

Onion Seed 60 cts. a lb.
As per Salzer's Catalog page 129.
Largest growers of onion and vegetable seeds in the world. Big catalog free: or, send 16c in stamps and receive catalog and 1000 kernels each of onions, carrots, celery, radishes, 1500 each lettuce, rutabaga, turnips, 100 parsley, 100 tomatoes, 100 melons, 1200 charming flower seeds, in all 10,000 kernels, easily worth $1.00 of any man's money. Or, send 20c and we will add one pkg. of Earliest Peep O'Day Sweet Corn.
THE SALZER SEED CO., LaCrosse, Wis.

New Crop Seed
Plant Good Seed
Reap Good Crops
We carry everything in good new
Grass Field Vegetable SEEDS
Don't fail to plant our celebrated
Big Leaf Jersey Kale
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Shade Trees
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And everything that you need for your ranch or garden. Send for free catalogue
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$1.50 a Dozen, $6.00 per 100, $40.00 per 1000
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Fruit Trees and Berry Plants of All Kinds.
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Colorado Grown Trees
Because your order gets our personal attention, whether evergreen, or forest, ornamental or fruit tree; whether small fruit, shrub or rose bush, we guarantee it to be grown in Colorado; healthful, well-rooted, true to name. We give premiums to club-makers. We pay freight on $10 orders. Agents wanted. Send for free catalog today to
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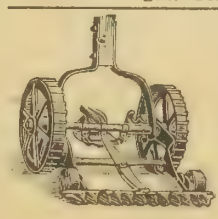
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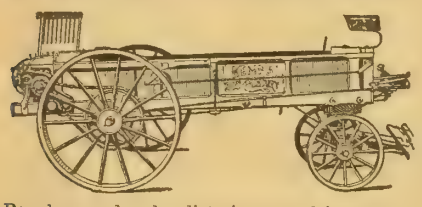
Clipper Lawn Mower
Dixon, Illinois.

MANURE SPREADERS



Ranchers and orchardists interested in Manure Spreaders will receive valuable information and catalogues by addressing us on this subject. We carry these spreaders in stock ready for immediate delivery.

Arnott & Company
112-118 So. Los Angeles St., Los Angeles

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Balled in moss and leaf mould. Need less water and can be planted later. Uniform size and being balled have fine roots. Fine to grow. Boxes of 100, sample lot, in flats and protected tops, only $1.60. Try them and you will use no other. Write for circular and special prices on large lots.

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320 River St., - - - Santa Cruz, Cal.

GROWING
Eucalyptus Trees
Without Irrigation
Good protection for your young trees is provided by the
NEW SYSTEM OF PLANTING
A postal card will bring you our Booklet.
The Expan Co.
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5000 Grafted Walnuts
1 and 2 year old grafts
On California black and English walnut roots. The stock of the California black are all from northern grown seed from large trees.
Prices very reasonable.
Eucalyptus in variety.
GEO. S. WEINSHANK
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EUCALYPTUS TREES
Large Assortment. All Varieties.
MONTEREY CYPRESS
Transplanted in flats 100 each. Write for prices, giving amount wanted.
W. A. REINHOLDLT
Main Street Nursery, Petaluma, Cal.

Stewart Bros. Nursery
First-class Fruit and Ornamental Trees. A large assortment on hand. Order early while we have plenty of select stock.
712 So. Spring Street, Los Angeles

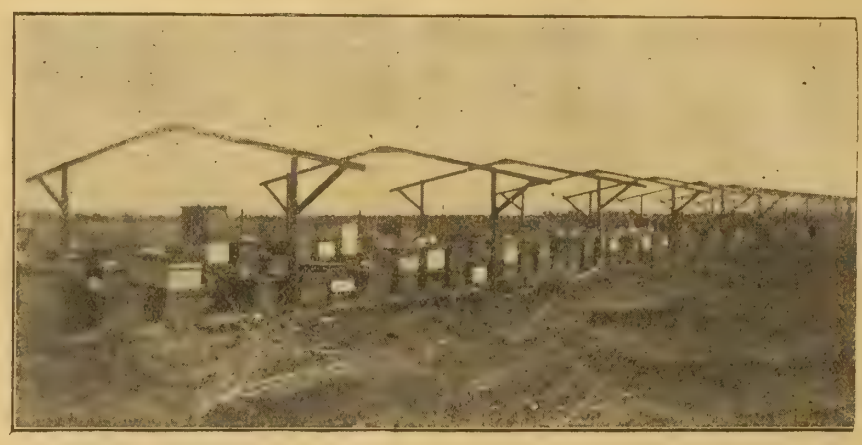
Orange growers of Lindsay are organizing a new association.

Bees and Their Care

THE APICULTURAL SITUATION OF IMPERIAL VALLEY.

SOME six months ago a certain fruit growers' journal of this coast reported that the season's honey crop of the Imperial valley would total up to about—well, so and so many cars, an enormous figure. I had visited the section in question at the close of the previous season, and from inquiries and observations made knew that that statement was largely overdrawn. But to make sure about it, I wrote out to a friend to let me have the truth about this thing. His answer was, that after everything would be gathered up into shipping shape, the total quantitative amount would just about come up to one-half of that reported. As the gentleman holds an official position in the Imperial Valley Bee Keepers Association his statement is reliable.

In 1907, and as many years previous to that as professional beekeeping had been carried on there, the output per colony of pure extracted honey of nectar in alfalfa blossoms is not as evident as in black sage, for instance, or better yet, the orange. Though, for some mysterious reasons a bee will visit perhaps a dozen orange blossoms before she loads herself down, when yet each single one held a good beeload of nectar. But the thing is different with the alfalfa proposition. Here a bee must needs visit a large number of cups to get a load at all. Still, if the alfalfa blossoms would keep pace numerically with the number of bees visiting them the thing would work out gaily enough on the principle of the more the merrier. But it's just here where the bronco balks. Alfalfa planting didn't keep up with bee planting, and, besides, the ratio of honey gathered altogether to honey available for the market undergoes a decided change with the more or less of colonies to the visible sources of nectar supply. If 100 colonies give a surplus of 5 tons on a given range 200 colonies may give 10 tons. But the probability is that they will fall short of giving 5 tons. For the constant brood-rearing going on, the large number of consuming youngsters in the hive, who do not, as yet, do any fieldwork, besides a thousand or two of gentlemen of leisure to each colony—all this swells the demand for home consumption enormously, reducing directly by that much the possible surplus for the market. And so the 2 case yield of '07 dropped in the Imperial valley in '08 to just 1 case.



Typical arrangement of Apiaries in Imperial Valley, 290 stands near El Centro. Two long rows facing opposite directions with 6 or 8 feet gangway. In summer the overhead racks are covered to shade hives and prevent melting of comb. This arrangement is not used anywhere else in the world.

was about 2 cases—240 pounds of amber honey. One man spoke of 2½ cases, and another of 3. There were not many bees there, then. The country was new, isolated and uninviting. Some enterprising man from the coast, seeking a sunnier clime than the San Diego hills usually afford during the spring months, happened to hear of the Imperial alfalfa fields and, thinking there might be a show there for his enchanting pursuit, ventured to ship a small lot of bees down. He located them in the alfalfa near Imperial town, and then awaited developments. And he didn't have long to wait. In fact, it wasn't a waiting game at all, but a most decidedly hustling one. The way those combs began to swell and grow, virginally white and clean, their precious contents glistening to the very edges of the miraculous cellwork, made—but what is the use describing the delicious thrill, none but your true beekeeper can ever hope to feel at that sight. Like a prudent man he kept the thing quiet. However, since there was plenty room for more, he gave the tip to a friend or two, still on the "outside." And those friends in turn tipped their friends. And so it came to pass that in 1907 the honey shipments of Imperial figured large in the section's agricultural statistics. And with that the cat was out of the bag. In 1907 the colonies of bees kept there numbered about 1000. And in '08 about 5000.

There are about 40,000 bees in a normal colony (so they say) during the working season. 40,000 multiplied by 5000 is 200 millions. The supply

Visiting El Centro last December, the officer of the Imperial Valley Bee Keepers Association spoken of above, informed me that in some localities the valley was greatly overstocked, while everywhere else there were as many bees as the situation could support. I was also told that several carloads of bees would be shipped out, back to the mountains of the coast, this winter.

I take this opportunity to clear up the apicultural situation of Imperial valley, as far as I can speak from personal observation and true report. It may save intending locators much trouble and expense, and, also, protect those already there from unwelcome incursions of strangers.—Henry E. Horn, Riverside.

BEE NOTES.

Honey should be stored in a cool, dry place.

Actual experience is the only way in which success can be attained in bee keeping.

It is said that Germany produces more honey than any other European country. She furnishes 20,000 tons annually.

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Nitrate Sold in Original Bags
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Just received, one carload of **Eastern-grown Seed Corn,** and our **Colorado-grown Cantaloupe seed.** We have three strains, the **Eden Gem, Netted Rock,** and **Solid Net.** All of these have been tried, and proved more satisfactory than any other strains of the **Rocky Ford.** Dealers and Associations are requested to write for special prices.
Our carload of **Corn** consists of the several varieties best suited to the different sections of the Southwest. See page 112 of our catalog for description, and write for prices on large quantities.
Aggeler & Musser Seed Co.
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FRUIT TREES
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The San Diego Seed House
High Grade Farm, Garden and Flower Seeds
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Grafted or grown from carefully selected seed. Postal gets prices.
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J. B. Wagner, Pasadena, Cal., 'Barb Specialist.

When writing advertisers, mention Cultivator.

Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

By Mrs. Minna E. Sherman

ALFALFA AND OTHER SILAGE.

THE spread of general information is very slow, or it would not be possible for any one to doubt the usefulness of silage or the ease with which the first crop of alfalfa and foxtail can be converted into valuable feed. This winter has been a tryout with us of silage as never before; during the long rain storms of the past month everything has had silage, pigs, mares, colts, as well as the calves and cows. The colts show great fondness for it and it does not seem to hurt them. The commoner ones were given it first and now the best colt on the ranch, Don McKenney, receives his share. Don has a celebrated father and a mother with a good track record and is to take the place, if he matures all right, of the present stallion Alan that heads the fast string. This silage is Indian corn as we have fed down to that in the silo. The top of the silo was sorghum this year, which also gave good satisfaction.

Cost of Filling.

The cost of filling the silo is governed in a measure by the size of the tools used. The larger cutter we had for the large silo had been sold during the years when we did not have enough cows to use the three hundred and fifty ton silo. The present cutter is good for the smaller silos but must be replaced if the large silo is used next year. The cutter is necessary if the silage is to be good, for without it is cut up the packing cannot be complete enough to exclude all air. Then in removing the silage for feeding, it is not possible to take it off smoothly in regular form. This is one of the hardest things at present to get men to do in any silo; they do love to dig it out in holes, and this is wasteful. The surface must be kept level or the loss from moulding is greatly increased.

Crops for the Silo.

The foxtail alfalfa in the spring and oats and peas to complete the filling comes in useful for summer feeding. Then plant a corn crop and it does not matter in the least if the silo still has some feed in the bottom. Put in the new stuff right on top of it. The only rule I know is not to put in less than five feet at a filling or it may not keep. Where labor is hired, it is best to make silage and feed it out, rather than to grow beets or other crops. The more the men can be bunched on a ranch, the greater the economy of operation, for then it is not necessary to watch them all over a large area. The cost of filling the silo varies greatly. The length of haul of the material and number of teams at work makes it figure out on the ranch all the way from the small cost of fifty cents a ton up to as much as two dollars a ton. Still when one is using foxtail alfalfa, which is something that must be cut and disposed of any way, the cost of making it into silage makes it pay well.

Foxtail.

This is the best grass in California for milk production, yet it is very harmful in hay. The horsemen around here rather prefer the alfalfa hay that has some foxtail in it, if it is cut early enough before the beards harden. This is very difficult to do, and as to what the horses think of the owner who gives them foxtail hay, deponent says not further.

Barley hay also has beards, and as horses cannot use tooth picks, the men should clean out their mouths every morning, particularly looking to the under part of the tongue. The best use of foxtail alfalfa hay is not to use it for hay making but to put it into the silo before the barbs harden. The importance of putting it in early is that the foxtail seeds are not dropped but go in green or in the dough stage. This then secures the full nutritive value of the seeds as grain in the feed. The mowers have the gatherer put on and the alfalfa and foxtail is discharged in a long continuous line across the field. Sometimes it is heavy enough not to require raking and can be loaded directly on to the wagons. If it is light, bunch it with the horse rake and haul at once to the silo. Cut the stuff into not less than two inch lengths.

Blowers.

In buying a machine for alfalfa, make the manufacturer give you a stiff guarantee that the blower will handle alfalfa and that the traveling table of the cutter will feed it. There are some makes that are fine for corn that will not handle alfalfa at all, other cutters that handle it too slowly for profit. Ask a guarantee with quick replacement if the machine does not cut and elevate the required tonnage per hour. We are running the elevator with our cutter and it does good work but will have to be replaced with a larger machine to meet the requirement of the increased herd of cattle. Alfalfa silage needs to be made very wet. A constant flow of water from a three quarter inch pipe is not too much to be constantly falling on the cut stuff as it goes up into the silo. Then tramp it well and make it firm all around the edges.

Experience.

Since 1896 we have been making alfalfa silage of the first crop of hay. It is a success and not an experiment, have no fear of trying it. Precautions to be taken are plenty of water on the stuff, tramping it well and filling six to ten feet at a time, leaving an interval long enough for the silage to cool down to a hundred degrees. While it does not hurt the nutritive value of the silage to heat up and turn black, as it will do if filled up at once, the cows do not relish it and though they do eat it, I do not like them to be dissatisfied with their food. Contented stomachs help milk flow. The use of salt in alfalfa silage is not good, as it does not add to its keeping qualities, and gives it a disagreeable taste. There is no use in salting any silage in the San Joaquin Valley, as the animals do not care for it. We do believe in having salt at convenient places

HONEST CAPACITY CREAM SEPARATORS

Capacity is an important consideration in the purchase of a cream separator. It enters largely into the cost and value of the machine, and there is no way of properly gauging either without reference to it.

A large capacity machine separates the same amount of milk in just so much less time. This saving of time means something in dollars-and-cents every time the machine is used. It means a great deal in the course of a month or a year. Moreover the wear of the machine is just so much less and it lasts that much longer.

But capacity must always be determined with CLEAN SKIMMING under the PRACTICAL, EVERY-DAY USE CONDITIONS,—with ordinary separator speed, cows old as well as fresh in lactation, milk cool as well as warm, and thick as well as thin cream. Capacity means nothing if any of these conditions have to be sacrificed to obtain it.

Hence capacity marks one of the BIG DIFFERENCES between the "ALPHA-DISC" DE LAVAL and other cream separators. The DE LAVAL machines fully meet these conditions. All other machines either lack the capacity "claimed" for them or can only reach it through sacrifice of one or other of the important practical use considerations named.

A DE LAVAL catalogue makes plain the reasons for this difference and is to be had for the asking.

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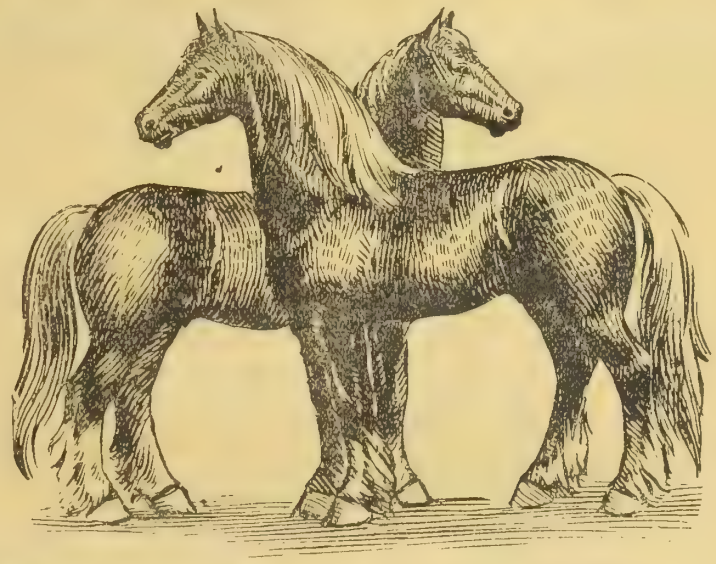

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February 16, 1909

20 Handsome Blacks from 1150 to 1500.
20 Handsome Bays from 1150 to 1400.
50 Broke Wagon Horses from 1050 to 1250.
All Double Square Brand, finest ever landed here now on exhibition.
100 All-Purpose City Broke Mares and Geldings, from 1000 to 1600 lbs. in weight.

If you miss this sale you miss the best opportunity of this season, to get what you want at your price.

Western Horse Market

E. Stewart & Co., Auctioneers & Live Stock Dealers.

Remember the date, rain or shine. February 16 at 1 p. m. and 8 p. m.

527 Tenth Street at Bryant, San Francisco, Ca

All consigned horses must arrive not later than Saturday, February 13th.

IN THE LEAD

For **1909**

The 1909 Model U. S. Cream Separators

retain *all* features that have given them their great reputation for durability and efficiency, and have several improvements that make them even to a greater extent than ever before, the ideal machine for dairymen who are posted and who **demand the best.** And by intensifying the circuitous and tortuous currents of the milk in its passage through the separator bowl, we have been able to

Greatly Reduce the Diameter of the Bowls

which makes them operate easier than ever and still retain their great milk capacity.

Notwithstanding most manufacturers were complaining all last year of dull times and small sales the UNITED STATES SEPARATOR had one of the **largest sales** in its history and since this fall season began, sales are larger than last year.

Do not forget that the *United States* has *beaten* every separator in *endurance tests* and holds the WORLD'S RECORD.

No dairyman can afford to purchase a cream separator until he has first examined the construction and operation of the

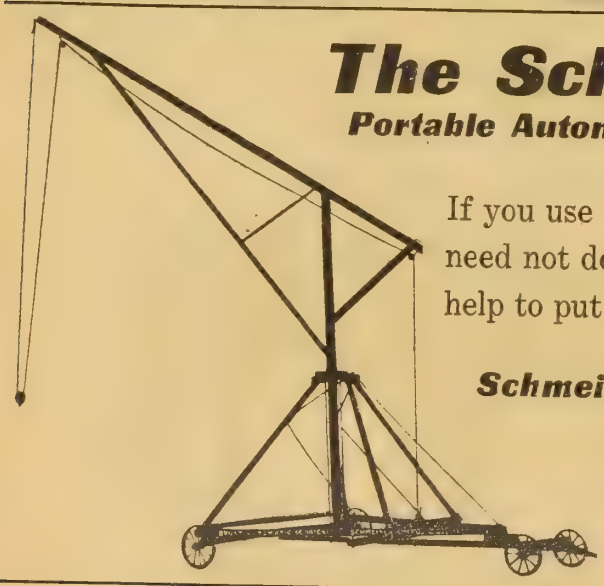
1909 Model

Sales agents in nearly every dairy section. If no agent in your town, **write direct to us for Catalog No. 20** and we will also quote prices.
We have distributing warehouses in every dairy section in the United States and Canada.

VERMONT FARM MACHINE CO., Bellows Falls, Vt.

The Schmeiser

Portable Automatic Derrick



If you use one of them you need not depend upon hired help to put up your Hay.

Schmeiser Mfg. Co.

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The Lafayette Stock Farm

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Stallions
and Mares

Our last importation of Percheron, Belgian and German Coach stallions and mares arrived in our barns August 1st, among them the prize winners of France, Belgium and Germany, and we can show buyers over 200 head of high class stallions, which we will price as low as any reliable importer can, and give liberal guarantee and terms. If your locality needs a stallion write us.

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LOS ANGELES AND RETURN AT OUR EXPENSE

WE PAY YOU TO INSPECT THESE HAY PRESSES.

Instead of paying a salesman's fare to show you a small model of a hay press, we will pay your fare to Los Angeles and return, not exceeding $15.00, to examine our California Special New Century, full circle, all steel, self feed Hay Press and all others on sale there. It makes no difference which hay press you buy, we pay your railroad fare just the same.

When you see for yourself how this machine has been built expressly for heavy baling on the coast, how strong it is, how easy it is on horses, what smooth bales it turns out, you will understand why we make such an offer. It has 7 in step-over, pull power, high baling chamber, positive plunger rebound; it stands up to its work, no taking off of wheels. Has record of 30 tons per day. We will ship you one to try. If you don't want it we will pay freight both ways. Write now.

ARNOTT & CO., 118 South Los Angeles St., LOS ANGELES, CALIF.

in the corrals for the cows to eat if they desire it, but do not force them to take it.

The foxtail silage is usually fed out in the summer time while the flies are bad and the heat is great. It is quite a saving to have the cows in a shaded pasture or lot and not out in the sun, tramping the young alfalfa to death. In the summer, if we can keep the cows quiet and cool, the milk does not drop down. The saving of the alfalfa field for another crop of hay is made possible while the cows are being fed the first crop preserved green in the silo.—M. E. Sherman.

PARALYSIS OF THE HIND PART OR AZOTURIA IN HORSES.

This is a disease which comes on suddenly and is due to an acid in the blood. It sometimes affects the front parts as well as the hind parts, and the animal may come out of the barn feeling fine, ambitious, willing to go, and often goes faster than usual, but before it has gone very far it begins to lose its speed, hangs back, sweats profusely, breathes hard, and begins to knuckle over behind, gets lame in one or both hind limbs and in a short time is unable to go any further, and often falls helpless on the road in a paralyzed condition.

The proper thing to do is to place him on a stone boat and haul him into the nearest barn, place him in a large, well bedded box stall or a barn floor where he can be turned over often until he is able to get up. Medicines should be given of a laxative nature and that will allay pain and counteract the acid condition of the blood. An injection of warm water should be given to unload the rectum of its faeces so that the animal can if possible urinate. If unable to do so, the urine should be drawn. A stimulating liniment or a mustard plaster should be placed over the hips and the body should be kept comfortably warm. The animal should be given plenty of drinking water with the chill taken from it, a very little, if any, feed should be given before he gets up, and he should be fed on bran mashes and a very little hay after he is up until a full recovery has been brought about.—By Dr. David Roberts, Wisconsin State Veterinarian.

A recent dispatch from Omaha announces that fifty thousand dollars was appropriated there by the American Hereford Cattle Breeders' Association to advance the interests of that particular breed of animals in the United States and a board consisting of three members was named to expend this sum in whatever manner they may see fit.

THE GREATEST JERSEY.

Adelaide of Beechlands 168699 is granted the head of the Jersey column as to production of milk and butter fat. This remarkable cow is the property of the Ladd Estate, Portland, Oregon. She was dropped March 16, 1902, and for the 12 months ending Nov. 24, 1908, she produced 15,572.1 pounds of milk.

Her average percentage of fat for the year was 5.456, and the fat is equivalent to 999 pounds, 8.9 ounces butter, 85 per cent fat. Her yield averages per month 1297.7 pounds milk, 70.8 pounds fat, and 83.66 pounds, 83 per cent butter, and averages per day 42.55 pounds milk, 2.32 pounds fat, and 2.74 pounds, 83 per cent butter, for the entire year.

DIPPING SHEEP IN ARIZONA.

DRINKING MILK.

There is a right way and a wrong way to drink milk, and the great majority of people drink it in the latter way, says a writer in Dairy of London in a recent issue. That is the real reason why milk disagrees with so many people; at least it is one of the chief reasons. Milk contains all the elements necessary for maintaining the physical health of those who know how to use it properly. Indeed (says a writer in "Health") most people would be better off physically if milk and entire wheat bread formed their ordinary diet. Especially is this true of delicate persons whose powers of digestion have become enfeebled. Persons suffering from nervous prostration are not able to digest meat, and will find great benefit from a purely milk diet, but the milk must not be imbibed

Shoe Boils, Capped Hock, Bursitis are hard to cure, yet

ABSORBINE

will remove them and leave no blemish. Does not blister or remove the hair. Cures any puff or swelling. Horse can be worked. $2.00 per bottle, delivered. Book 6 D free.

ABSORBINE, JR., (mankind, $1.00 bottle.) For Boils, Bruises, Old Sores, Swellings, Goitre, Varicose Veins, Varicosities. Allays Pain.

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For Sale by Langley & Michaels, San Francisco, Cal.; Woodward, Clark & Co., Portland, Ore.; F. W. Braun Co., Los Angeles, Cal.; Western Wholesale Drug Co., Los Angeles, Cal.; Kirk, Ceary & Co., Sacramento, Cal.; Pacific Drug Co., Seattle, Wash.; Spokane Drug Co., Spokane, Wash

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Are given the preference by 80% of California stockmen because they give better results than others do.

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Three Stroke Self Feed Hay Press

Two men can run it. All steel and iron. Smooth bales. Easy draft. Satisfaction guaranteed. Free trial. Ask for Catalogue 28.

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We Have For Sale a Number of Registered Young Bulls and Heifers **$100**

All our stock comes from the celebrated herd formerly owned by the Pierce Land and Stock Co., the premium herd of Holstein Friesians in California. Oakwoods Stock Farm Co., Lathrop, Cal

VENADERA HERD
OF REGISTERED JERSEYS

I have for sale a number of richly bred young bulls, some of them from cows that have high official yearly records.

GUY H. MILLER,
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Pure Bred and Registered

Jersey Cattle, Poland China Hogs
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Large selection. All ages and grades. Correspondence solicited. Prices reasonable. Satisfaction guaranteed.

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The Whiting Jersey Stock Farm Company

Is making the very best strains of blood fresh from the island of Jersey a specialty.
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Hay For Sale. Buy your hay in car lots. Special attention given to supplying alfalfa to dairies.
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Thoroughbred Poland China Swine
Black Minorca and Barred Rock Poultry
High Grade Stock of Best Strains.
Young Stock For Sale
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John Lynch Breeder of Registered **Shorthorns**
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My Berkshires took 9 First, 6 Second and 4 Third Prizes and both Gold Medals. 50 Head For Sale.
G. A. MURPHY, PERKINS, CAL.

PURE BRED BERKSHIRES

Young Stock For Sale

Wm. H. Bird Box 6, Compton Cal.

like draughts of water—it must be sipped slowly, a teaspoonful at a time. There is a scientific reason for drinking milk very slowly, and in very small quantities. It is this: Milk curdles as soon as it comes in contact with the juice of the stomach. If a long draught of milk is taken into the stomach, the result is a large curd through which the gastric juices cannot readily penetrate and act with solvent power.

A small sip of milk makes a tiny curd, so if a tumbler of milk is taken sip by sip, it will readily be seen that the results will be a number of little curds, each one of which can speedily be acted upon and digested by the gastric juices of the stomach.

Where special nourishment is desirable, as in the case of very weak persons, or convalescents from wasting diseases, beef and wheat peptones may be added, or some one of the infant foods which are known to be absolutely free from starch.

It is unwise to add starch foods like farina or arrowroot or cornstarch to the milk for weak people or invalids, under the impression that the foods are very delicate and easily digestible, for they are, on the contrary, very difficult of digestion. Milk alone is far better for persons who have weak digestive powers, but the one great need which must be impressed on everyone is the need of drinking slowly and in very small sips with intervals between the sips. In nine cases out of ten, milk taken in this manner will agree with people unless there is some fault in the milk.

Water may be taken in long draughts without danger, provided the system is not weak and overheated by running or other exercise, but milk should always be imbibed slowly.

CONTAGIOUS ABORTION IN COWS.

A radical change has been brought about concerning contagious abortion in cattle. The time has been when stock owners whose herds were afflicted with contagious abortion did everything in their power to keep the fact from becoming known to the public and in order to be successful in doing so they would avoid conversing with other stock raisers on this subject, and I dare say in this way were handicapped in obtaining valuable information as to how to positively wipe contagious abortion out of their herds.

Their reasons for keeping this disease in their herd a secret was that they knew very well that no intelligent or well posted stockman would think of buying stock from a herd afflicted with contagious abortion, and I want to say that the stock raisers of this country are becoming so well posted and well educated along this line that they are protecting themselves with this knowledge and will not consider the purchase of animals from a diseased or afflicted herd.

The time has now come when bright, well posted and successful stock raisers discuss the subject of contagious abortion in cattle freely for the reason that most of them have already had experience with this dreadful disease and have obtained information and have learned that it can positively be wiped out, consequently they have no fear of the disease, nor have they any fear of telling their friends that they have had it in their herd, but have wiped it out and are perfectly willing to advise those who desire to obtain information as to how this can be done.

The knowledge concerning contagious abortion in cattle has been spread throughout this country by the successful stock raisers. They have not only done this in the past, but are doing so at the present time and by so doing, they are building up the reputation of our live stock industry, thus increasing the value of each animal, as it is reasonable to expect that a strong, healthy, money making cow ought to be worth more than two ordinary afflicted or suspicious ones. I am sure that if this offer were made to any well posted stock man that he would prefer the one cow with the clean bill of health attached, to the two suspicious cows unaccompanied by the bill of health.

I feel that it is a privilege and it should be the duty of every stock owner in this great progressive country, to at least see that his animals are free from contagious or infectious diseases, such as tuberculosis and contagious abortion.

The moment that these two diseases are wiped out of our herds, the more valuable our stock will become, the more saleable they will become. They will be sought for by other people who are less careful concerning the health of their stock. It matters not so much as to what breed of stock but it matters much as to how free they are from disease and as it has been said before, it is within the power of every stock owner in the world to own healthy stock. This being true I will close by asking the question, which is the most profitable, healthy or diseased stock? Be fair with yourself and instead of answering me answer yourself.—Dr. David Roberts, Wisconsin State Veterinarian

COMPARATIVE VALUE OF BEEF BREEDS.

If the values obtained at such representative sales as those of the various beef breeds which have been recently held at the Chicago International are indicative of their relative value as producers—and no impartial judge can say that such is not the case, as it is claimed for these sales, both by the management and the breeders themselves, that the individuals offered are good representatives of the respective breeds—then there can be no doubt but that the Short-horn breed of cattle, animal for animal, is the best investment, as well as the most popular of all the beef breeds.

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Riverside and Santa Ana are somewhat concerned over the building of a reservoir at Fillarie Flats which is to be used for impounding storm waters. Riverside has appealed for the privilege of distributing this water over waste land which is a feeder for the water systems of both Riverside and Santa Ana and does not desire the impounding of the storm water before it reaches these flats.

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Contents

MONTEREY PINE AT HOME, Cover.
CANTALOUPES UNDER ARID CONDITIONS, 147.
CITRUS.—Methods of Control of Gummosis; Water in the Mohave Desert, 148, 149.
DECIDUOUS.—Spraying for Scab, 150.
QUERIES AND REPLIES.—Care of Orchard; San Jose Scale; Flats—Whitewash; Control of Sex; Value of Old Bones; Cutting Tops After Budding; Seed for Orange Stock; Cannibals; Asparagus Culture; Half Breeds; Hot beds; Government Land; Tiling to Remove Alkali; Guinea Fowls; Lemon Seedlings; Alkali; Fig Cuttings; Chickens Dying; Gypsum; Leaky Flume; Transplanting—Three Horse Evener; Sunflower Seed; China Trees; Sweet Pea Seed; Lentils, 150, 151, 167, 168, 169.
VETERINARY.—Swelling on Horse; Diseased Ovaries; Sweeny; To Correct Looseness; Sore Ear, 170.
SMALL FRUITS AND VEGETABLES.—This Month; Origin of the Tomato; Garden Peas, 152.
ORNAMENTAL GARDEN.—This Month; Gopher and Squirrel Proof Bulbs, 153.
BEES AND THEIR CARE.—Apicultural Situation of Imperial; Bee Notes, 154.
LIVE STOCK.—Alfalfa and Other Silage; Paralysis of the Hind Parts in Horses; The Greatest Jersey; Drinking Milk; Contagious Abortion; Comparative Value of Beef Breeds, 155, 156, 157.
EDITORIAL.—Educate Toward Agriculture; Value of an Exposition; Key to the Situation; Arizona; Melon Culture, 158.
AGRICULTURAL NOTES OF THE PACIFIC COAST.—Northern, Central, Southern, The Coast, 159.
POULTRY.—The First Incubator, 160, 161, 162, 163.
GENERAL AGRICULTURE.—Disk Harrowing Alfalfa; Value of Fertilizers; Anthrax in Man, 164, 165.
HOUSEHOLD DEPARTMENT.—Why Should the Spirit of Mortal Be Proud; Lincoln's Gettysburg Address: About the Hair; Beds and Bedding; Housekeeping; About the House, 171, 172, 173.
PRODUCE MARKETS.—Los Angeles Market; San Francisco Market; Citrus Markets, 174, 175.

EDUCATE TOWARD AGRICULTURE.

In a personal letter to the office regarding her accompanying a committee to the State Capitol to urge the passage of a bill for the establishment of the normal or teacher training school at Fresno, Mrs. Sherman referred to the fact that many of the teachers in that section of the state are not fully trained teachers, many of them having only county certificates with most meagre preparation for actual training of young minds. Especially is the lack of knowledge of the science of agriculture noticeable by its absence in these teachers.

Mrs. Sherman's plea was for the education of more teachers along agricultural lines and used as one of her arguments that the State School at Davis of which so much has been hoped has been able to draw to itself only 25 pupils at its opening session. It is possible this indicates the desire of the state as being away from rather than toward agricultural education. If it really does this, then early steps should be taken to correct it, for we believe the welfare of the race and especially of this state, will depend largely on qualified workers who have to do with its agricultural life. If the desires of our young people lead them away from the farm, should the matter not be treated as we treat the matter of morals? Their desires sometimes seem to be in another direction or at least enough perverseness appears in their make-up to make it so appear. Regardless of their desires they are trained along lines so far as is possible which may be contrary to their inclinations. This should be true as to agricultural training. For surely it is recognized that in this state there are openings for our young people in agricultural lines if they will but fit themselves for such work.

This may best be done not in special agricultural schools but in the public schools in which they start as little fellows, which should in every year of its course train their minds to observe the various processes and growths which are taking place about them on all sides. This education surely cannot be given without we have qualified teachers. The Normal School we have in Los Angeles, and possibly others in the state, is giving a limited amount of agricultural training to the young people who are taking the normal work. Bear in mind we say limited, for according to our needs it is exceedingly limited.

Regarding this matter of education the Country Life Commission when in California recently were asking questions of those who appeared before them, and Prof. Bailey asked a leading educator, "What is the aim of the ordinary teacher of the country school?" The question quickly brought the answer, "Either to secure advancement to the city school or more often to get married." Our country schools must offer better inducements as to salaries so that teachers will fit themselves to be country school teachers instead of making it a stepping stone to the city schools.

VALUE OF AN EXPOSITION.

Nothing could have attracted so much attention to the great Inland Empire which centers at Spokane in eastern Washington, as did the magnificent apple show which was held there the last fall. At that exhibition, premiums were offered aggregating $35,000 and the entire cost was something over $85,000. But this liberal handling of such an exposition, one of the items of which was the offering of $1,000 for the best single apple exhibited there, has succeeded in attracting much attention to that industry. Much, not only in an advertising way, but in the way of compelling the asking of the question, "What are the requirements for perfect fruit and how may we produce fruit which will command a premium either at such an exposition or in the open market?"

California needs just such an awakening as would come from a similar exposition. For instance, if the citrus growers of the state would combine and offer large premiums and bring together the best fruit which can possibly be produced along citrus lines there would be such an awakening of a determination to produce just such fruit as would immensely increase the wealth of the future output. Citrus fairs of the past have more largely catered to general display and to emphasizing the fact that fruit could be produced in large quantities, and great taste could be shown in its arrangement. Now let us have a display of fruits which are placed in competition with each other purely on the merit of individual fruits or of collections of fruits, on a quality basis.

This is not addressed to citrus growers only but to many other producers in the state who may be equally in need of encouragement. We believe that with Watsonville as a center an apple show could be put up in California which would be the equal of the famous apple show of Washington.

The grain growers are learning that there is grain and grain. Samples of wheat grown by Prof. Shaw at Davis show great variation in quality and quantity. Let us get together and learn which is best and why it's best.

KEY TO THE SITUATION.

As a lesson for the orange growers of Florida the Jacksonville Semi-Weekly Times Union in a recent issue taught a good lesson on co-operation in a cartoon as to the situation in Florida and in California. The main part of the picture was a closed door, which was labeled "Prosperity." Before it stood three Florida orange growers, hands in pockets, all with very downcast expressions. The large key to the door of prosperity which was labeled "Organization," hung on a nail out of reach of the three orange growers. In the upper corner before a reproduction of the same door stand three California orange growers. But these three California growers have climbed on each other's backs, one supporting the other, the top one taking down the key labeled "Organization," and they are ready to unlock the door of "Prosperity." This is labeled "California's method." "United we stand, divided we fall." The Californians are saying "We got it," while Florida is mourning, "How did California get it?"

Now this is not mentioned to make comparison between the two states. Florida is making strides along the same line but may well learn of the California orange growers who have stood together for many years and are winning as a result of their co-operative efforts. But we may use it as an argument with some of our other producers in this state. Prune, raisin and other producers have attempted organization but too often have thrown down the whole proposition because of some fault or fancied fault in the plan. This lesson of standing together or being united in the effort to maintain a common interest is the only way success will be secured. If such an immense industry as is the citrus can be held together, certainly the others will find no greater difficulty if they will but observe the same wisdom which citrus growers have.

ARIZONA.

Arizona has long been considered as being strictly a frontier country. For an expression for anything wild and wooly, Arizona seemed to be sufficient. And indeed there are thousands of acres within its border of such a rugged and forbidding aspect that one traveling through the territory over the ordinary lines of travel is possibly justified in the impression that within its borders there is little of worth and much that is crude. But more and more the news columns and market reports force upon us the truth that with all that she has of a forbidding aspect Arizona is still at the same time producing wonderful results in some of the little nooks and corners where conditions are right to prove her productiveness. The earliest of oranges, amongst the earliest of the melons and some other garden truck, have been sent to the Eastern markets. There have been many failures like the endeavor to produce strawberries, but these failures are gradually weeding out those things which they prove are not suited to climatic and soil conditions. The best part of it is that those things which are proving productive are proving wonderfully productive and profitable.

This material advancement coupled with the dignity of statehood which will probably soon be given her will bring this section more and more to the front and prove her to be one of the great factors in the development of our rich country.

MELON CULTURE.

The wonderful profits which have been made from culture of cantaloupes in Arizona and in many sections of California, and the interest created in the industry make the article on first page of this week's Cultivator, by Prof. Forbes on that industry of particular interest at this time. It relates more particularly to the growth of this product under the extremely arid conditions which prevail in Arizona, but there are points in it which will be instructive to cantaloupe growers in all sections. The article has been in hand for some time but has been held until this time, when we feel the greatest interest will be conserved by its publication.

There was a wisdom and a culture in the spirit of Lincoln higher than any outward education could have bestowed. It was this inner beauty, not the outer homeliness, that was the real Lincoln.

The Lincoln Farm Association has already gathered $200,000 from a hundred thousand people for the purpose of purchasing and preserving for all time the birthplace of Lincoln.

Agricultural Notes of the Pacific Coast

Northern California

Butte county paid $845 for coyote scalps last year.

Much bottom land about Chico will be injured by the deposit of sands from the recent floods.

The town of Knights Landing in Yolo county, was well under water during the highest part of the recent flood.

The Sacramento Valley Sugar Company at Hamilton anticipates the longest run on sugar beets it has ever had.

Two bills appropriating $88,000 for the new agricultural high school at Davis have been introduced in the State Assembly.

State Master Griffith of the State Grange has returned to his home in Santa Rosa after attendance at the National Grange.

Railroad communication between Sacramento and many points of the North has been resumed after long interruption due to the flood.

An officer of the Alameda Sugar Company reports that the outlook for an extensive planting of sugar beets and of excellent quality is good.

When the Iron canyon irrigation scheme is carried to completion 100,000 acres of additional land of the Sacramento Valley will be brought under cultivation.

The Humboldt Creamery Exchange protested in vigorous resolutions against the passing of a bill requiring the pasteurization of cream before its manufacture into butter.

The Ukiah Times is making a strong fight for growing better apples in that section, maintaining that some of the best apples in the world can be grown in Mendocino county.

To correct the abuse which has sprung up by so many milk dealers claiming that they have "certified milk," a bill has been introduced in the State Legislature providing that no milk shall be sold as certified unless approved by a county milk commission.

The present effort to secure a big appropriation for the building of a pavilion on the State Fair ground at Sacramento has stirred up Marysville and she proposes to donate land for a state fair ground if the legislature will authorize its removal to that city.

A new scheme of protecting the levees in some of the flooded sections this year was to string the sacks in which the sand was placed on a stout wire to prevent their being washed away by the current. As many as forty sacks were threaded on one string of wire.

Progressive Grange of Healdsburg recently elected officers for the coming year as follows: Master, J. T. Donald; overseer, G. H. Brigham; lecturer, A. E. Burnham; steward, George Mackey; assistant steward, Edwin Kent; chaplain, Mrs. W. E. Foster; treasurer, Sarah E. Keyes; secretary, Emily L. Burnham; gatekeeper, H. M. Keyes; Pomona, Mrs. Alice Goddard; Flora, Della Miller; Ceres, Helen Mackey; lady assistant steward, Mamie Foreman; organist, Julia C. Brown.

Central California

Hanford has a new industry in the shape of a pumpkin flour factory.

Berries and cherries at Prunedale, Monterey county, are beginning to blossom.

Twelve hundred dollars per acre is the latest sale price made by Porterville orange groves.

Several packing houses at Hanford are running full force on stemming and packing raisins.

The Miller & Lux lands in San Joaquin valley are to be subdivided and sold off to actual residents.

The Orchard Irrigation Company at Campbell, Santa Clara county, has reduced its charges on water from 75 to 25 cents per hour.

A new eucalyptus company has been organized at Visalia with a capital stock of $50,000, of which $3 has actually been subscribed.

The promoters of the Los Gatos flower festival are making an effort to secure the Liberty Bell for exhibition at the time of the festival.

Fresno county fruit growers are taking notice that the New York Dried Fruit Association is endeavoring to secure lower duties on dried fruit.

Since the storm and the recent cold weather the price of potatoes has been advanced. It is reported that one Jap in Fresno holds over 200,000 sacks.

Planting of new grain for next year's output over the San Joaquin valley is reported to be probably 25 per cent larger than that of last year's planting.

Orange county cabbage will be ready for shipment by February 15.

The organization of the Farmers Union is spreading all over the San Joaquin valley.

One raisin grower has secured a room in Sacramento and disposed of his raisin crop direct to the consumers, selling so as to bring to him five cents per pound.

Farmers of San Joaquin are watching the efforts in the State Legislature to secure an amendment to the Cartwright law more favorable to farmers' associations.

The raisin growers of Fresno are contemplating the introducing of a large number of Italian workers in the vineyards, one contractor agreeing to supply 500 husky men at $25 per month and found.

Messrs. Stubenrauch and Pomeroy of the Department of Agriculture have made observations this season in the Tulare county citrus shipping section which will aid in the future shipping and better keeping of fruit.

A resident of Fresno investigating the raisin condition in Kansas City stores, found California raisins in only six out of 36. The high prices of the raisins were the grocers' reasons for not handling them.

John Fairweather, who was at the head of the recent raisin growers combination which failed owing to running up against the Cartwright law now favors a regular corporation of raisin growers, the producers to hold at least 65 per cent of the stock of the company.

Southern California

Some Imperial winter-cut alfalfa hay totaled over a ton to the acre.

A $20,000 packing house is planned for Bryn Mawr, San Bernardino county.

It is thought the total shipment of celery from Orange county this year will not exceed 1500 cars.

Beaumont has had the greatest boom in orchard planting this season of any year in its history.

Imperial has begun its shipments of celery. It is estimated the crop from the valley this year will net $90,000.

Riverside Chamber of Commerce has a committee investigating encouragement to a proposition to manufacture orange wine.

A new walnut growers association has been formed at Orange and will be known as the Richmond Orange Association of Orange county.

Bee Inspector Pleasants of Orange county says the recent rains give almost positive assurance of a good honey crop in Southern California.

The celery growers have been pleased with the absence of blight this year, because with as much rain as has been given much concern was felt.

It is now predicted that the shortage of planted peanuts this year in Orange county will cause the closing of the peanut cleaning plant at Tustin.

First car of cabbage out this year from the Fullerton section commanded $34 per ton. That looks different than the $5 price which prevailed last year.

The present prices of potatoes will place the fortunate grower who held his spuds in the class of the "predatory rich" but unfortunately the Japs seem to be the principal holders.

Report from Washington says that California citurus producers must face a reduction on the tariff on oranges and lemons. Rumor has it that this reduction will be ten per cent.

The shipment of oranges after the recent storm was so heavy that prices eased off somewhat, but the rains coming again have held up shipments so that present indications are good.

A settler who had filed upon land in Imperial valley which is now covered by waters of the Salton sea has been denied entry because land covered by water cannot be granted to be desert land.

C. E. Utt, the peanut king of Southern California, says he has had all the experience he wants in competition with Japan for he has found peanut growing in face of such competition unprofitable.

A large number of quail captured in the Coachella valley will be released in Griffith Park, Los Angeles, and other sections of the country to stock them up with this game. The work is under the control of the State Game and Fish Commission.

"Sunkist oranges and lemons" is the latest catch phrase adopted by the California Fruit Exchange. It sounds good but the looks of it should induce some Cultivator subscribers to send in some more euphonious and catchy-looking title for the Exchange to use.

The Coast

Farmers at Morgan, Utah, are planning for the establishing of a cheese factory.

Northern Colorado territory shipped more than 12,000 carloads of potatoes last year.

The Oregon short line will furnish a Farmers Institute train for farmers in southern Idaho.

Yakima onions are now quoted at Seattle at 3½ cents per pound, with potatoes commanding $25 per ton.

A wool sale of 1,500,000 pounds recently was made at Helena, Montana, for 20 cents per pound, or a total of $300,000.

Utah State Agricultural College has over 800 students registered, of whom 300 are taking the regular agricultural course.

A company has formed at Le Grand, Oregon, with a capital of $600,000, which will irrigate 20,000 acres of land.

The Lynn County Fair Association at Scio, Oregon, plans an extensive enlargement of its grounds before next fall's fair.

An effort is being made in the State Legislature of Oregon to remove the state fair from Marion county to Portland.

A new irrigation project at White Bluffs, Washington, will bring nearly a thousand acres of sage brush under intensive farming.

Lands on the Sunnyside Canal in the Yakima valley, Washington, are promising the heaviest crop the coming season they have ever given.

The storm which covered California in the last few weeks gave an immense fall of rain to the western parts of Washington and Oregon.

Quite a bunch of hops has been sold at Salem, Oregon, at eight cents a pound. Other and larger lots at Portland have been sold at 7½ cents.

At the annual meeting of the grange at Albany, Oregon, recently, an election of officers and hearing of reports was followed by a banquet.

Weiser, Idaho, claims to have the largest sheep company in the United States in the Butterfield Live Stock Company with a capital of $150,000.

Apple growers of Oregon are continuing their emphatic campaign against the change in the size of apple boxes as proposed by a bill introduced in the National Congress.

Coyotes near Gresham, Oregon, are destroying large quantities of young stock and farmers maintain that unless relief is given stock farming will have to be discontinued.

China pheasants which were released at Albany, Oregon, have been found to be unable to stand the severe weather, many having been killed during the recent cold snap.

Gov. Mead of Washington recommends that a horticultural law be passed calling for the election of county horticultural inspectors instead of their appointment as at present.

An immense delegation with special train will go from Colorado farms to the Dry Farming Congress at Cheyenne, Wyoming. The governor of Colorado will accompany the train.

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Profit in the Poultry Yard

By Mrs. Frank Metcalf

We solicit short articles of a practical nature from the fancier and utility breeder, giving their experience with poultry. All inquiries pertaining to feed, management, disease and its prevention will be answered through these columns.

THE FIRST INCUBATOR.

It is ready to work at any and all seasons; the oil to run it costs less than the food for hens doing the same amount of work; there is no trouble from vermin; broilers can be produced early without interrupting biddy when laying her highest-priced eggs; the care of the incubator is less work than that of the hens to do its work, especially during the inclement season, and is more agreeable. These are some of the arguments in favor of the incubator.

On the other hand, a reliable hen will produce fewer cripples, and perhaps have better success if the eggs happen to not be perfectly fresh; yet on this point science is making rapid strides.

Notice that I say a reliable hen. But these are rare. The average hen will not be better than the incubator while many fall far below the machine in results.

If you contemplate placing it in the barn, or some other out-of-the-way place where it will be subjected to extremes of weather and little care—don't get it.

But if you have a dry and well-ventilated room with a temperature of preferably 60 degrees and not lower than 50 degrees at any time, and are willing to give it a reasonable amount of care, the investment will pay, even if you do not want to raise more than a hundred chicks in a season.

A cold room necessitates running the lamp at the highest notch and doubling the expense of oil; besides when the eggs are aired they become chilled too suddenly and too much. If there are extremes of temperature the regulator and lamp will require very close watching.

While it should not be necessary to sit up nights with the incubator, neither is it wise to treat it like a clock—to be wound up once a day and left to itself for the remainder of the time.

A cellar is apt to be damp and lack ventilation. A chamber, makes too much running up and down stairs. If possible have it in a room adjoining the one where the work is done.

Good results come, if the kitchen is large enough, by placing the machine in one corner. Many successful poultry women give it a place in the living-room; and even the parlor may be used, as there is nothing unsightly or untidy about the work save the day or two during the hatching process; and then the interest makes amends for the temporary disorder.

Before buying, secure catalogues from several reliable dealers, study carefully the claims of the manufacturers, and your own requirements.

Avoid the cheapest machine of any make. As a rule it is so small that it is difficult to secure uniformity of temperature in the egg chamber.

The nursery—an important adjunct, is usually lacking in the smallest machines. If one of the largest size is chosen, it will be found cumbersome; it requires too long time for filling if your own eggs are used; if the hatch happens to be a poor one your loss is that much greater.

A machine of about 100-egg capacity is large enough for the beginner, contains all essential conveniences, and one can later increase the capacity if success attends the humbler effort.

Study both directions and machine thoroughly before starting the incubator. Have it on a firm, level foundation, and remember that good ventilation and avoidance of draughts are as necessary to the chick in embryo as to the human being.

The experienced hand always runs an incubator a day before filling, to make sure that the parts are working properly. The novice with a new machine should not feel it time lost to wait until three days after she has learned to control the heat at or about the required notch. The germs are especially sensitive during the first few days, and undue heating will ruin the entire hatch.

The fresher the eggs, the larger the percentage of chicks. Never use those over two weeks old, and two days is much better.

Gather often enough to avoid chill, keep in a room with the temperature never lower than 45 degrees nor higher than 60 degrees. Pack firmly in a box, using regular egg filler or wrapping each egg in paper. Turn the box carefully over every day, to prevent the yolk adhering to the shell.

A specialist says that twelve hours before filling the machine the eggs should be stood on the small end, balancing the yolk and locating the air cell in this way.

Fill the incubator in the morning. Putting in cold eggs will run the thermometer down so that it will be several hours before the heat is up again, and you want time before night to be sure that all is properly adjusted.

Select medium-sized, shapely eggs. Avoid all the abnormal forms, of thin shell. Do not crowd or pile one on top of another.

If you desire to replace the infertile ones which will probably be tested out, give eggs to a sitting hen at the same time. As many of these can be used after the first testing as are necessary to fill the tray.

Follow the directions closely as to temperature. If the heat should run too high, take the tray out and air the eggs, seeing that the egg chamber is cooled down to the normal temperature.

An excessive temperature and absence of moisture are doubtless responsible for chicks dead in the shell, the shell being rendered harder and the membrane tougher.

But this subject is not yet fully understood, and the novice can only adhere to directions, remembering that each manufacturer knows better what is the best way to manage his machine than any one else.

When the first test is made, there are some eggs about which the beginner will be doubtful. Mark each with a question mark and return them for later examination; but be sure to

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keep the bulb of the thermometer on one strongly fertile.

The internal heat is so much that if the bulb happens to rest on a weak or dead germ the others will be raised to an extreme temperature before the deficient one registers properly.

Sometimes these doubtful eggs turn out all right. An expert would know their value at once; a second test will make it manifest to any one. Reject all clear ones.

Sometimes the air cell is on the side instead of the end, and not at first located. An expert can tell by handling them, which are the fertile eggs; you must expect to use the tester.

Use a good quality of oil. There is less danger from gas, and as it lasts longer it really costs no more in the end, giving always better results.

Trim the wicks every day, and attend to the lamp with as scrupulous care as though it were to grace the parlor table. Much depends upon its

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perfect work. Give it the best possible chance.

It is better to fill in the afternoon; then one is sure that through the night all will be well.

Authorities differ as to how often eggs should be turned. It is safe to follow the rules which accompany your machine. Assume that any reliable manufacturer will know and tell you how his machine does the best work. He wants it to succeed.

Many who have used both, prefer the hand system of turning the eggs. It certainly requires little work to take the tray out and place one end slightly higher than the rest.

Then remove the row of eggs on the lower side, gently turn the rest half over, to fill in the space just vacated, and last put those taken out into the upper side of the tray. They will be aired during the process, yet there is no rude jarring or danger of breakage.

An electric attachment for warning when the temperature runs beyond the danger limit gives good results and removes much care.

March eggs are less fertile than those laid later; but the chicks are vigorous, and do not have the hot weather and lice which often prove a menace to the later flocks.

Though you fill the incubator with fear and trembling at the thought of taking so many little lives into your hands, regular care and common sense will reward the efforts.

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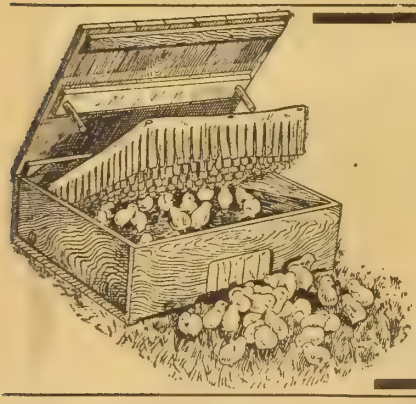

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THE CORNISH FOWL.

WE are glad to give a brief description of the Cornish Fowl, an old breed with a new name, one of the most practical and handsome of all our standard breeds of poultry. Something like 35 or 40 years ago, this breed was imported into this country by a number of eastern breeders and bred very extensively for a number of year. In fact at that time they became very popular and many predicted they would lead the old stand-by, the Plymouth Rock, in popularity, but for some unknown reason, these birds were allowed to go unnoticed and were bred by less careful and painstaking breeders until they were very leggy and on the game order. This prejudiced many people against them and they gradually lost their popularity, not from the fact that they were not practical as they were bred, but many being prejudiced against a bird with a gamy appearance. At that time they were called the Cornish Indian Game. This name also prejudiced many against them, but during the past ten years, a number of careful and painstaking breeders have taken up this breed and have been breeding for utility and practical points as well as fancy. They have bred them broader with shorter legs, in fact, as they are bred today, they are the most practical or what is known as the best all-purpose fowl of any of our standard varieties. A well-developed bird of this breed carries more white meat than can be found on any other breed.

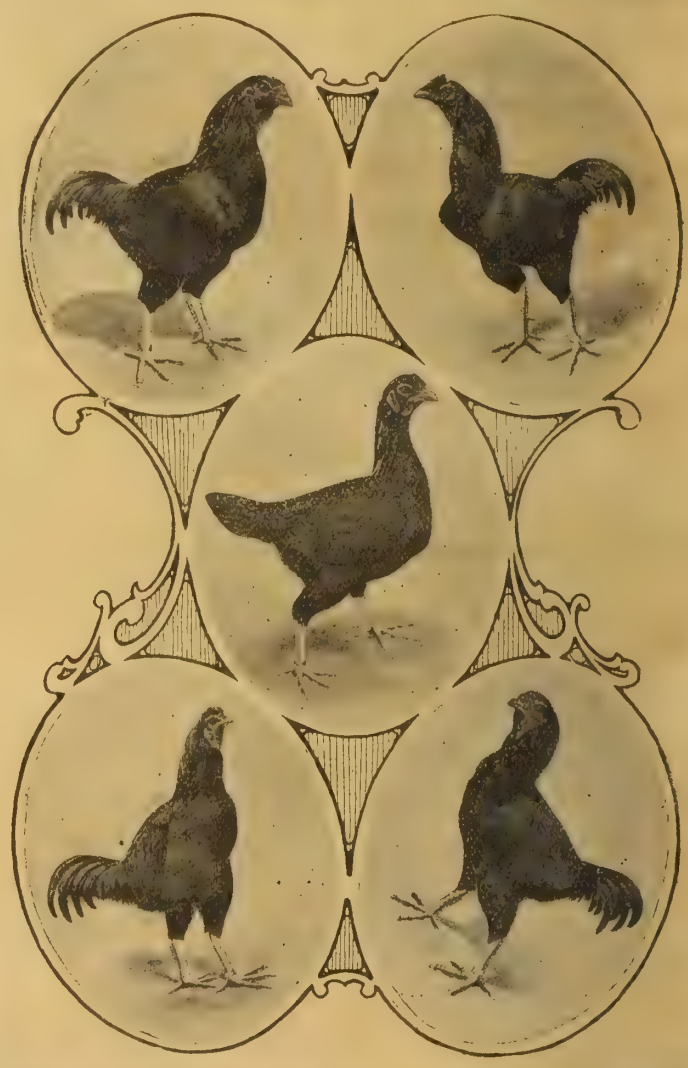
During the last ten years, in England, in competition with all breeds as a table fowl, they have won more prizes than all other breeds combined. They with the cross with the Dorking are about the only bird that has been able to carry off prizes as a table fowl.

During the past few years, if you care to look up the record of the large eastern shows, you will find this breed much in evidence. Also this season, the popularity of the Cornish fowl on the Coast has been a surprise, even to their fondest admirers. The Cornish Club of America was organized some years ago with the determination to bring this breed into prominence and put them again into the front rank where they belong. One of the first things this Club did was to change the name, dropping the word "Game" and the bird is now known as the Cornish Fowl and is bred in two varieties, the white and the dark. The standard for this bird is, Cocks, 9 lbs.; Cockerels, 8 lbs.; Hens, 6½, and Pullets, 5½, yet we have seen many of these birds weighing eight to ten pounds in the females and ten to twelve in the males.

When birds can be grown of this size, with as rapid growth as they make, there is no reason why the farmer should not take hold of them for the practical as well as a fancy fowl. We have known cockerels to weigh nine pounds at eight months of age. This, we believe, is ahead of any other breed. They are great foragers and if given an opportunity, will find most of their own feed. They are very hardy and the meat is very firm and any one must see this bird to appreciate the good qualities.

Last year was the first year that the Cornish was much in evidence at Coast shows. Again this year they proved to be our largest and strongest class, at such shows as Oakland, San Jose, Santa Barbara and Los Angeles. Among the more successful breeders and exhibitors of the Cornish Fowl, not only on the coast, but in America, is Mr. Alex. Aikman of Los Angeles. This gentleman has been a breeder of this variety for several years. His attention was first called to them as a practical fowl for the fancier and the utility breeder. At that time he purchased a pen of the best he could buy in this country, but after breeding them several years very successfully and giving close study of their characteristics, he decided he did not have just the proper thing in the Cornish. He therefore imported from Wm. Brent, of Cornwall, England, the best birds that he would sell. This importation consisted of 24 birds and included birds that had won prizes at England's largest shows and were pronounced by many competent to judge, as being the best collection of Cornish fowl ever imported by any breeder into America.

Perhaps no importation created more talk among the breeders than these 24 birds. Many predicted that Mr. Aikman could not breed birds that would be as good as the original



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or parent stock and claimed that they would be a disappointment as breeders. The writer has had the pleasure of a visit to his yard several times, has handled his young as well as old, and he can say that he never handled a better lot of young birds than is in Mr. Aikman's yard today. He has yards of pullets that are as much alike as "peas in a pod." They are broad, low and blocky and are double-laced in every section. His cockerels are also a fine lot and he has young birds that are fit to show and win in any show. To look at his flock, one would think that Mr. Aikman did not look after utility points, but only bred for fancy, but he is careful to go after the utility as well as fancy; in fact, he makes it a point to breed his stock to standard size and as for egg production, they are all that could be desired, and we are satisfied that if any one wanting either stock or eggs should buy from him, they will get more than their money's worth.

Another very noticeable feature in this particular strain of fowl, is the fact that they are hardy, having been in his yards a number of times during the winter and the rainy season, we have failed, so far, to find a single case of roup. We are glad to present, to the readers of the Cultivator, cuts of some of Mr. Aikman's international prize winners. These cuts do not do the birds justice, as one has to see the birds before he can appreciate the beautiful color in them. The male birds are a greenish black with rich yellow legs. The females have bright red combs, the ground color and their body being a nut brown with two narrow lacings of greenish black. This gives the bird a very handsome appearance. Their appearance is that of a powerful and strong bird, and being very alert they command the attention and admiration of any lover of fine birds.

The single hen shown herewith is a winner in England and America's largest shows. She is very short-legged and heavy body. In fact she is a typical specimen of the breed and weighs about eight pounds; is double-laced in every section and is what we consider a true color for the exhibition female.

Mr. Aikman's initial exhibition of this breed was in Los Angeles during the season of 1907 and 1908. He exhibited at both of the Los Angeles shows in the best class of Cornish fowl ever brought together on the coast and won every first and second prize. This fall he exhibited at San Jose, Oakland, Santa Barbara, Pomona and Los Angeles, and won practically every prize that he showed for. At the last Los Angeles show, in what was considered one of the largest and strongest classes of the season, he won every first and second prize, also a silver cup for the best 25 table fowl, competing with all breeds. His show record is unequaled by any breeder of any variety on the coast for the past five years. Mr. Aikman has spared neither money or energy in building up his strain of Cornish Fowl and we believe he has the best in this country, either east or west and his success is due to a careful and painstaking breeder. Any one desiring either stock or eggs of this variety, should write him asking for his illustrated catalogue and price list. During the last show, Mr. Aikman exhibited a fine silver cup which he expects to offer next season for the best exhibit of birds hatched from his eggs or raised from stock which he sells, so any one wanting to get a strain of practical and fancy birds that cannot be surpassed by anything on this continent, can feel sure, in breeding this strain, of getting all that can be desired. His address is 1134 E. First St., Los Angeles, Cal.

Plow up the chicken yard, spread lime on it, and thickly sow with clover seed. The latter may not do so well about the coops, but farther away it will grow sufficiently to make a green covering for the chicks to pick at. Turning the ground destroys the gape worm and guards against other diseases, the germs of which, as well as the eggs of the worms, often find lodging in the surface of the soil where fowls congregate.

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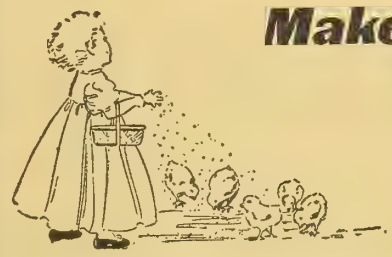

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FOR YOU TO BUY the many different articles composing Coulson's Special Dry Chick Food is quite impracticable; you could not be certain as to their quality for one thing, and the high cost of certain of them when purchased in small lots might lead to their being left out to the detriment of the chick.

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General Agriculture

DISK-HARROWING ALFALFA.

THE disking of alfalfa is a common practice, and seems to be an especially effective in destroying weeds and breaking up the silt blanket deposited in cases where muddy water is used for irrigation. The ordinary disk harrow is widely used for this purpose, but R. H. Forbes, in a bulletin of the Arizona Station, states that a special machine "for the cultivation of alfalfa has been devised on the principle of the disk harrow, but with rows of strong spikes or digging teeth in place of the continuous edges of disks. These machines are stated to be in successful operation in Australia and South Africa, and one form was introduced into Arizona in 1907.

"One man with an 8-foot machine and four horses will get over 8 to 10 acres of alfalfa in a day. This work may be done in winter when teams are more at leisure; but it is probable that in summer also, after cutting and before irrigating, an occasional disking, to break up the sediment blanket, may be well worth while, especially on the upper ends of alfalfa fields."

In South Africa the necessity of disk cultivation is recognized to the extent of having contests in which prizes are given for the machine most closely meeting the requirements.

A. M. Ten Eyck, of the Kansas Station, considers the cultivation of alfalfa desirable, and recommends disking in the early spring. He found "that less injury was done the alfalfa and the best work accomplished by setting the disks rather straight and weighting the harrow so as to make it cut 2 or 3 inches deep;" then cross-disking the field and harrowing it with the common straight-tooth harrow. He states that "the common disk-harrow is more generally used than any other implement to cultivate alfalfa, and when properly adjusted does good work. The spike-tooth disk, known as the 'alfalfa harrow' was used on the alfalfa fields at the experiment station farm during the seasons of 1907 and 1908. This harrow does good work when properly adjusted, and is perhaps a better implement for this purpose than the common disk-harrow."

IN THE MOUNTAINS.

The ends attained by disking alfalfa are thus concisely stated by Professor Forbes:

At a trifling cost, varying according to individual circumstances, the disk-harrow splits and spreads the crowns of alfalfa plants, causing them to develop additional tops; it destroys the egg deposits and larvae of certain injurious insects; it destroys weeds; it breaks up the silt blanket resulting from the use of muddy irrigating water, allowing better penetration of

water and air to the roots of the crop; it loosens up certain dense soils; and to some extent it incorporates beneficial sediments and fallen alfalfa leaves with the soil.

As one of the most serious obstacles to the successful culture of alfalfa, particularly in the Eastern United States, is the crowding out of the plants in the earlier stages of growth by weeds, the introduction of implements and methods which will destroy or control the weeds is of great importance. The use of the disk harrow as described above seems to offer an efficient and practical means of securing this result.

VALUE OF FERTILIZER.

THE CULTIVATOR recently had inquiry as to computing value of commercial fertilizers. We give herewith a table of values accepted by the experiment stations of Massachusetts, Rhode Island, Connecticut, New York, New Jersey and Vermont of prices actually prevailing on the open retail market there in the form of raw unmixed material. Here they may vary somewhat, but the comparison will be valuable. The figures are furnished by the New York Experiment Station.

	Cts. per pound.
Nitrogen in ammonia salts	17½
" in nitrates	18½
Organic nitrogen in dry and fine-ground fish, meat and blood and mixed fertilizers	20½
" in fine-ground bone and tankage	20½
" in coarse bone and tankage	15.0
Phosphoric acid, water-soluble	5.0
" citrate-soluble (reverted)	4½
" in fine-ground fish, bone and tankage	4.0
" in cottonseed meal, castor-pomace and ashes	4.0
" in coarse fish, bone and tankage	3.0
" in mixed fertilizers, insoluble in ammonium citrate or water	2.0
Potash as high-grade sulphate, in forms free from muriates (chlorides), in ashes, etc.,	5.0
Potash in muriate	4¼

Valuation and Cost of Fertilizers.

The total cost (to the farmer) of a ton of commercial fertilizer may be regarded as consisting of the following elements: (1) Retail cash cost, in the market, of unmixed trade materials; (2) cost of mixing; (3) cost of transportation; (4) storage, commissions to agents and dealers, selling on long credit, bad debts, etc. While the total cost of a fertilizer is made up of several different elements, a commercial valuation includes only the first of the elements entering into the total cost, that is, the retail cash cost in the market of unmixed raw materials.

Valuation and Agricultural Value.

The agricultural value of a fertilizer depends upon its crop-producing power. A commercial valuation does not necessarily have any relation to crop-producing value on a given farm. For a particular soil and crop, a fertilizer of comparatively low commercial valuation may have a higher agricultural value; while, for another crop on the same soil or the same crop on another soil, the reverse might be true.

Simple Rule For Calculating Approximate Commercial Valuation.

Multiply the percentage of nitrogen by 4 and add to the product the figures representing the percentage of available phosphoric acid and of potash. The sum expresses in dollars and cents the approximate commercial valuation of the fertilizer. For example, take a sample which will analyze Nit. 2.52 per cent, available Phos. Acid 6.31 per cent, Potash 6.64 per cent.

2.52 (per ct. of nit.) multiplied by 4, equals	$10.08
6.31 (per ct. of available phos. acid) equals	6.31
6.64 (per ct. of potash) equals	6.64
Total, per ton equals	$23.03

If a fertilizer contains only one or two of the three essential fertilizing ingredients, the rule can be applied equally well.

While the results given by this rule are not exact, they are fairly accurate and the rule has the great advantage of simplicity. It does not take the insoluble phosphoric acid into consideration at all.

A somewhat more accurate valuation would be made if the following rule is followed:

Multiply 4.1 by the percentage of nitrogen.

Multiply 0.9 by the percentage of available phosphoric acid.

Multiply 0.4 by the percentage of insoluble phosphoric acid (total minus available).

Multiply 1.0 by the percentage of potash.

The sum of these 4 products will be the commercial valuation per ton on the basis taken.

Illustration.

An analysis which shows a certain fertilizer to have the following composition: Nitrogen 2.52 per ct.; available phosphoric acid 6.31 per ct.; insoluble phosphoric acid .89 per ct.; potash 6.64 per ct. Following this method of valuation, the computation would be,

Nitrogen	4.1 x 2.52	$10.31
Available phosphoric acid	0.9 x 6.31	5.68
Insoluble phosphoric acid	0.4 x .89	.35
Potash	1.0 x 6.64	6.64
		$22.98

This latter rule assumes all the nitrogen to be organic and all the potash to be in the form of the sulphate. If a considerable portion of the nitrogen exists in the fertilizer as the nitrate of soda or as sulphate of ammonia, and the potash is present as the muriate, the valuation should be somewhat less.

Farmers should be warned against judging fertilizers by their valuations. A fertilizer, the cost of which comes chiefly from the phosphoric acid present, would value much lower commercially than a fertilizer with a high percentage of nitrogen, and yet the former might be the more profitable one for a given farmer to purchase.

ANTHRAX IN MAN.

Anthrax may be transmitted to man in handling the carcasses and hides of animals which have succumbed to the disease. The infection usually takes place through some abrasion or slight wound of the skin into which the anthrax spores, or bacilli, find their way. The point of inoculation appears at first as a dark point or patch, compared by some writers to the sting of a flea. After a few hours this is changed into a reddened pimple, which bears on its summit, usually around a hair, a yellowish blister, or vesicle, which later on becomes red or bluish in color. The burning sensation in this stage is very great. Later on this pimple enlarges, its center becomes dry, gangrenous, and is surrounded by an elevated discolored swelling. The center becomes drier and more leather-like and sinks in as the whole increases in size. The skin around this swelling or carbuncle is stained yellow or bluish and is not infrequently swollen and doughy to the touch. The carbuncle itself rarely grows larger than a pea or a small nut and is but slightly painful.

Anthrax swellings, or edemas, already described as occurring in cattle, may also be found in man, and they are at times so extensive as to produce distortion in the appearance of the part of the body on which they are located. The color of the skin over these swellings varies according to the situation and thickness of the skin and the stage of the disease, and may be white, red, bluish or blackish.

As these carbuncles and swellings may lead, sooner or later, to an infection of the entire body, and thus be fatal, surgical assistance should at once be called if there is well-grounded suspicion that any swellings resembling those above have been due to inoculation with anthrax virus. Inasmuch as physicians differ as to treatment of such accidents in man, it would be out of place to make any suggestions in this connection.

To show that the transmission of anthrax to man is not so very uncommon, we take the following figures from the report of the German government for 1890: One hundred and eleven cases were brought to the notice of the authorities, of which eleven terminated fatally. The largest number of inoculations were due to the slaughtering, opening and skinning of animals infected with anthrax. Hence the butchers suffered most extensively. Of the 111 thus affected, thirty-six belonged to this craft.

In addition to anthrax of the skin (known as malignant pustule), human beings are subject, though very rarely, to the disease of the lungs and of the digestive organs. In the former case the spores are inhaled by workmen in establishments in which wool, hides, and rags are worked over, and it is therefore known as wool-sorter's disease. These forms of the disease are more fatal than those in which the disease starts from the skin.—The Veterinarian.

GARDEN ALMANAC.

An excellent publication for the reading table is the Garden & Farm Almanac for 1909, not only an almanac but a reference book for the home farm and garden. Its planting tables may not be absolutely fitted to the general run of California's conditions but many other points are so valuable that it is well worth the two-bit price which is placed upon it by the Doubleday, Page & Company of New York, who are its publishers.

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THE question most generally asked regarding the planting of Crimson Winter Rhubarb has been, "But will we be able to dispose of it at a fair price?" This question is now being answered and very satisfactorily by the Phalanx Company of Los Angeles. This concern is a distributor of California fruits, but was organized primarily to supply the east with this product for which there is such keen demand in that market. Some cars have already been shipped to Eastern markets, principally Philadelphia, and the reception which it has received there justifies the company in holding out inducements to planters in this state to plant this luscious product. One member of this company, about whose ranch devoted to the culture of rhubarb at Pomona this paper has had former articles, is Mr. D. D. Bryant, though his principal concern is in the growing of rhubarb. The President of the company is Mr. Comly Shoemaker, while Mr. Harry A. Jamison is secretary and treasurer. The office in Los Angeles is at Room 513 Chamber of Commerce building, and the Eastern distributing office is at 2nd and Dock, Philadelphia. The shipments so far made by this concern this year are developing more and more the proof that Crimson Winter Rhubarb can be laid down in Eastern markets at great profits to producers.

J. B. Wagner.

These promising developments call attention again to a character whom this paper has often referred to as a man who is proving of great benefit to this state in insistently bringing forth to public attention the famous Crimson Winter Rhubarb with which he has worked in such a tireless way to produce a better plant by selection and hybridizing. This man is Mr. J. B. Wagner, the rhubarb king of California.

Small Beginnings.

From a beginning of a hundred plants bought of Luther Burbank seven years ago, for which the sum of $35 was paid, Mr. Wagner has produced millions of plants and forwarded to all sections of the world. This $35, Mr. Wagner admits, looked exceedingly big to him at that time. But the energy and ability which he has thrown into his campaign for a better and more productive plant have succeeded in producing such satisfactory results that the demand for them has constantly increased and today Mr. Wagner is on vastly different ground than he was seven years ago. This rhubarb which is the Crimson Winter variety first brought out by Mr Burbank, and more recently vastly improved by Mr. Wagner has won in all sections where it has been planted under right conditions. In general, we may say that one principal condition required is shown by the answer to the question, "Will the orange trees thrive and do well here?" Wherever that tree does well the rhubarb has been found to do its best and to produce its crop at a time when it commands the best price in the East.

J. B. WAGNER STANDING BY A HILL OF HIS FAMOUS CRIMSON WINTER RHUBARB.

Seeking Something Better.

The simple reproduction of a large quantity of this remarkable "fruit" was not sufficient to satisfy the ambition of Mr. Wagner, but, good as was the original product, he demanded in some particulars a greater degree of perfection.

One fault which has been found with Crimson Winter has been the smallness and shortness of the stalks of the original plants. To overcome this, Mr. Wagner has introduced from all sections of the world, by the aid of the Department of Agriculture, a large number of seedlings which he used in hybridizing or crossing with the Crimson Winter, hoping to secure equally as fine a quality as is produced by the small stalks of the Crimson Winter and at the same time the larger size of some of the so-called Giant variety. It is easy enough to secure by this hybridizing the larger size and this has often been done; more lately Mr. Wagner has succeeded in combining the quality and size together with the ever-bearing disposition. In this way, and by selection of seed from the finest plants remarkable results have been secured.

Not Large but Important in Results.

In the experimental garden which Mr. Wagner uses in his work, he has 14 acres. Not so large as some of the ranches of this state but large in its influence and especially in the betterment of this product which is now bringing many dollars to the Coast and the sending of many carloads and eventually train loads across the continent. A part of the 14 acres which Mr. Wagner owns in the outskirts of the city of Pasadena is given over to his cosy and comfortable home, where with his wife and two daughters and son, he lives his unostentatious life in the enjoyment of music and art, and studies the problems which confront him. The growing of the rhubarb for commercial purposes is but a small factor in this man's work. His main effort and endeavor is to center on reproducing more perfect plants which will benefit the actual producer.

Big Profits.

Besides the large plantation of Mr. Bryant at Pomona, which is spoken of at the beginning of this article and which now amounts to considerably more than 100 acres, there are many others in Southern California which are coming into bearing. We may refer to that of Mr. Loftus at Monrovia, who has become an enthusiastic planter. Mr. Wagner now has growing over a quarter of a million plants and expecting to have at least 100 acres to market next winter his gardens will add materially to supplying the eastern market. One reason why these gardens have increased so materially is the fact that they have proved so exceedingly profitable. Mr. Wagner asserts that every one which is given intelligent attention at all will give an income of $600 to $800 the first year after planting. It is predicted that the car load shipments which are now being made will soon extend so that train-load shipments will become a common sight through the main shipping points of California.

Information Demanded.

Other articles will appear during the coming season regarding Mr. Wagner and his work, and in them will be given more particular information regarding details of planting and of care. This is because the requirements of this plant as to soil and the limited amount of water are such that its more extended planting should be encouraged. But meantime, any one wishing for instruction as to location and care and how the plants may be procured would best write to Mr. J. B. Wagner, the Rhubarb King, of Pasadena, California.

Regarding its care Mr. Wagner says: Rhubarb is as easily and cheaply gathered as apricots or peaches; hence at same rate per ton is a much better paying proposition, even the first year than any deciduous orchard in its prime. It delights in any good vegetable soil that produces good crops of onions, sweet potatoes, melons, etc. Excessive heat seems to have no ill effect on it once it is established, if properly cared for.

Plants should be set same depth as they originally grew, watered immediately, followed in a couple of days with another irrigation, then keep soil in well-tilled and moist condition. Irrigate as often as is necessary to keep from drying out.

A liberal use of well-rotted manure, thoroughly mixed with the soil is greatly beneficial and sure to repay many fold for trouble and money invested. Repeat application every two years. Barn-yard manure or blood fertilizer or ammonia preferred.

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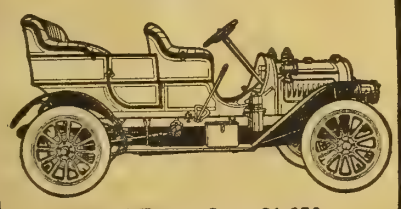

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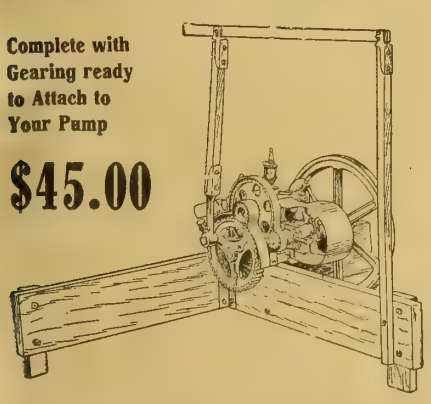

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QUERIES.

(Continued from Page 151.)

ture growth of the young stock, and further the experiments made showing practically no difference in the thrift of the two trees, we think the general custom now is to remove the entire top except about six inches of the young tree above the bud. This removal is made as soon as it is assured the young bud has taken in the springtime, even if it has not started to grow. Then later when the bud has grown high enough to be tied to a stake and the young bud is thrifty, the entire stump is removed with a slanting cut just above the bud.

Seed for Orange Stock.

When is the proper time for planting orange seed? From what variety of oranges are they secured? Is grape fruit stock satisfactory to bud Valencias on?—J. G. R., Fullerton.

Plant seed in April or May. The ordinary seedling orange is used more generally though many planters secure the sour orange seed from the Florida wild trees. These can be had of the seedmen. Grape-fruit stock is all right for Valencias and even preferred by some because of its giving strong, thrifty trees.

Cannibals.

What is the cause of recently hatched chicks eating each other, especially picking each other's feet till they are all raw? What is cause and how can I prevent the trouble?—G. C., Lakeview.

This question was fully answered by Mrs. Metcalf in issue of January 28, page 103. It is a case of lack of some element in the food, presumably meat and bone, which the youngsters require. But the habit once started is very hard to break up, even if the food is corrected. Hereafter, prevent the starting of the habit by properly balanced ration.

Asparagus Culture.

Please give method of field culture of asparagus.—Subscriber, Lompoc.

Plant in rows 4 feet apart, 18 inches to 2 feet apart in the row. The furrows should be 6 to 8 inches deep and the plants covered with but an inch or two of soil at first. Gradually fill up with soil and old manure if you can get it. Give clear culture the first season. Where the winters are severe, it is the custom with the best growers to cover the entire surface with a heavy coat of manure and allow it to lie until spring. Unless you live near a large city it is difficult to get manure and still more difficult to handle the land during our winter—although it can be done. Asparagus is a gross feeder and it is useless to attempt to grow a paying crop on ordinary land without heavy fertilizing.

Unless you have an exceptionally rich piece of land, be sure of results before you risk as much as one acre. An acre set in rows four feet apart and plants two feet in the row will require about 5500 plants. Most dealers advise to set two year plants and I never could understand why unless it was because they become wholly unsalable after two years. I should always prefer strong selected one year plants. Do not attempt to cut any asparagus the first year after setting out as the object is to get a well established root system before you begin to cut, and this demands that the plant be allowed to make abundant foliage. Cut sparingly—that is, not too late in the season—the second year. After that the bed can be cropped to its full capacity. A visit to the delta lands of the San Joaquin or Sacramento rivers where so much asparagus is grown would well repay any one who thinks of embarking in the work to the extent of even one acre.

If you wish to grow your own plants, an ounce of seed will give you about 200 good plants. Sow in rows about 15 inches apart in good mellow soil, about the last week in February. Thin the plants so that they stand two or three inches apart, give thorough care through the season. Sow at least one-fourth more than you think necessary for your needs so that when you come to plant your permanent field you can reject all weak and inferior plants.—Q. A. L.

Half Breeds.

I have some well bred Barred Rocks which do not lay very good, though they are well fed and run at large. They seem to be very fat and heavy. Do you think if I were to cross them with a Brown Leghorn rooster, would it help the laying qualities? I don't think well bred Barred Rocks are good layers, though I like them.—A subscriber.

Well bred Barred Rocks are sometimes the best of layers, although very apt to take on too much fat and become lazy about it, if given all they will eat. If a cross is made with a good laying strain of Brown Leghorn or any other lively breed, the pullets should make excellent layers, but the question would be how to mate them the following year to keep these good qualities. I have known Eastern farmers to keep up the laying qualities of their flocks by introducing a new male every year, of an entirely different breed. Of course their flocks were as varied as Jacob's coat, but so long as the egg yield kept up, they cared very little for that.

The R. I. Red people claim that by this very out-crossing, they have built up the good laying qualities of their breed, although they no longer practice it. Personally, I would prefer a male of either R. I. Red or Buckeye to mate with the Rocks, as the out-cross would give a better market fowl, and quite as good layers, while the sitting habit would not be lost.—Mrs. Frank Metcalf.

Hotbeds.

I would like to get information about hotbeds. At the present time I am unable to get any dry horse manure; everywhere it got too wet. If I take wet horse manure, spread it out to dry, could I, after it gets dry, add ammonia and bring manure to heating through this? If this can be done, what are the proportions and does it require a certain liquid?—L. D., Anaheim.

It does not matter if the horse manure got wet, provided it is fresh and put together on a heap. It will heat and that very violently if there is considerable quantity of it. If you could get some that is fresh from the stables to mix with that that got wet it would greatly aid in heating. I never tried the method suggested and would think it very much cheaper to get some fresh manure. I have in preparation an article on hotbeds that will appear soon in the Cultivator.—Q. A. L.

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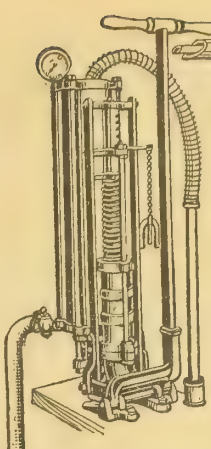

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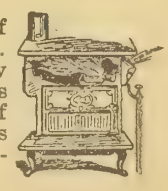

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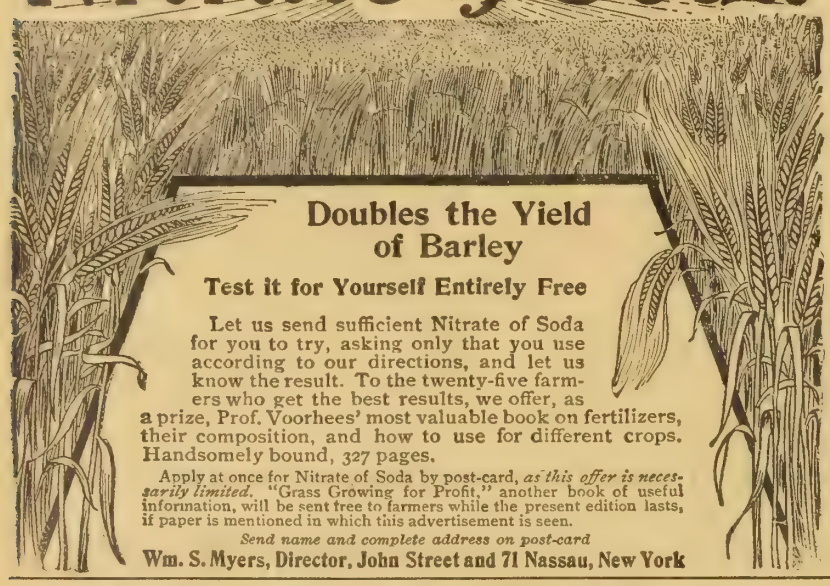

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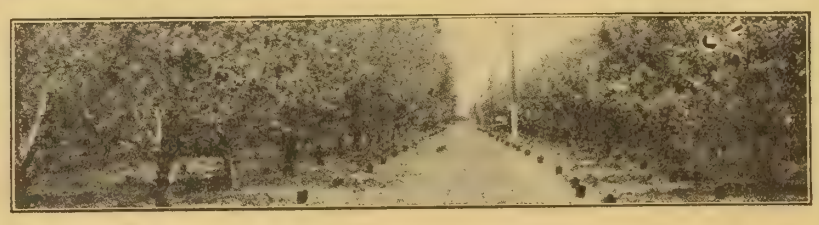

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Protect your orchards from frost damage.
Write us for particulars.

The Frost Prevention Co.

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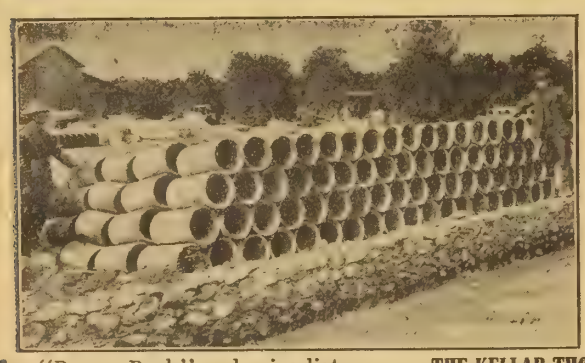

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made by four men from 10 bbls. of cement in 9 hours — 280 two-foot joints, or 560 feet. This pipe was made with the

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An equal amount can not be made with any other tools in the same period of time. Write for "Brown Book" and price list.

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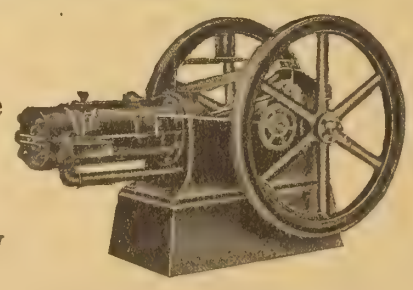

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Transplanted in flats of 100 each. We prefer orders of 1000 rather than 10,000; outside limit 20,000. Our trees are of the highest standard in quality. Correspondence invited. Our Booklet telling when, how, and what to plant free to our patrons only. Address

W. A. T. STRATTON, Nurseryman, Petaluma, Cal.

When writing advertisers, mention Cultivator.

Government Land.

Will you inform me if there is any government land to be had in Imperial county? Also when is the government land under the Laguna Dam near Yuma to be thrown open?—Subscriber, Healdsburg.

The more desirable land has been taken up in Imperial valley, but there is yet much on the outskirts open to entry. We have been told of excellent land which is about 20 miles from Imperial, but have not been informed as to the possibility of getting water on the land. We cannot inform you when the Yuma land will be thrown open to entry.

Tiling to Remove Alkali.

Kindly tell me how deep and how far apart tiles should be placed for removing alkali?—F. C. Toyoshima, Santa Ana.

Thirty feet apart and three feet deep is probably a fair average of the requirements and the tiles should have all the fall possible in order to secure perfect drainage. By digging the ditches deeper and placing the tile down farther the ditches may be farther separated, but about the above figures is usually preferred.

Guinea Fowls.

A subscriber of the Cultivator is desirous of getting in touch with some one who can supply him with Guinea fowls—a cock and five hens. Also as to whether they will stand the climate of Imperial valley. Can any subscriber give information along these lines?

Lemon Seedlings.

I wish you would give through your columns directions for growing lemon seedlings, how to select the fruit for the seed, how ripe the fruit should be and other information about raising it. Also how are they budded?—Subscriber, La Mesa.

If your aim is to grow lemon trees, they are not budded upon lemon roots. The lemon root is too susceptible to gum disease to be tolerated. The sweet seedling; or in case of heavier soils, the sour seedling orange, is to be preferred. The latter especially is more free from the gum disease. This seed may be secured from seedmen who get it from Florida. If you prefer to grow from the sweet seedling seeds, then get large plump seed from the best seedling oranges you can find. These are planted in seed bed where they are grown for one year. Next year they are planted in nursery row where they remain for another year or possibly attain sufficient size by the following fall to bud to the lemon. The lemon bud is one of the easiest of all buds to make live and even a novice may succeed with it if he gives it reasonable care. More particulars regarding raising from the seed will be given in the Cultivator of February 25, which will give more attention to citrus fruits.

Alkali.

Will you kindly tell me if 2½ per cent alkali on the soil is detrimental to crop production and will the Agricultural Experiment Station analyze soil free?—A. R. S., Beaumont.

We know of no crop which will stand the amount of alkali which you mention. Prof. Hilgard says in "Soils:" "For the sandy loam of Tulare substation for instance, the maximum for cereals may be approximately stated to be one-tenth of one per cent for sal soda, a fourth of one per cent for common salt and from 45 to 50 one-hundredths of one per cent Glaubers salts. For clay soil the tolerance is in general markedly less, especially as regards sal soda, s in their case the injurious effect the tilling qualities of the soil is superadded to the corrosive action o that salt on the plant."

The highest amount of alkali which alfalfa will stand, which is one of the most resistant of any of our plants, after it is established, is 102,480 pounds of alkali in four feet depth of your soil. Young plants of alfa will find difficulty in resisting or tenth of that amount, so that eve after being established, your soil would have difficulty in maintaning the life of alfalfa.

You do not mention the kind of alkali you have, black or white. If of black variety, it is much more corrosive than the white or the Glaubers salts. You may have soil analyzed without charge by the chemical department at the State University. Before taking your sample of soil, however, would write to the University at Berkeley and ask for a blank which will give instructions how to select a sample.

Fig Cuttings.

Please tell me the proper time for planting fig cuttings. Is it best to use new sucker growth or the older tree wood?—H. E. S., Nordhoff.

Fig cuttings should be planted at once. The writer has seen excellent trees grown from suckers which root much quicker than the top growth. Often the sucker which comes out below the ground will have rootlets started and such a cutting under favorable conditions may give you fruit even the first year.

Chickens Dying.

I recently fed my 80 hens which were healthy and clean, for their evening meal a pail of soft feed in which was mixed a quart of peas that had spoiled. They smelled very badly. Next morning 16 were dead, all others dazed, with necks stretched out very long, head hanging down. In a few days all were dead. What was the cause?—H., Lodi.

Plainly the hens died from poisoning. It is often possible to purchase beans or peas which were exposed to rain but afterward carefully dried, and while blackened and unsightly for human food are still in good condition as to content of protein which is needed by the laying hen. But to feed any decaying vegetable matter or even that which is soured is almost sure to prove disastrous. The human stomach will not stand it, neither will that of stock. Formerly the swill barrel was the cause of much disease with swine. Swine faisers now realize that sweet, wholesome food is just as advantageous in feeding their hogs as in feeding their children. The economy which demands the saving of spoiled food, if carried too far, defeats its own ends. Many thousands of little chicks have died because of feeding a mash which has been allowed to stand until it has soured. Feed only sweet wholesome food.

Gypsum.

Please tell me the price of gypsum and where it can be secured.—W. A. G., Inglewood.

The price of gypsum f. o. b. Palmdale in car load lots is, we believe, $4.50. In smaller quantities, f. o. b. Los Angeles, in sacks, $8.00. It may be had by addressing the Acme Plaster Co., 750 Alameda Street, Los Angeles.

Leaky Flume.

Replying to A. L. P.'s inquiry for

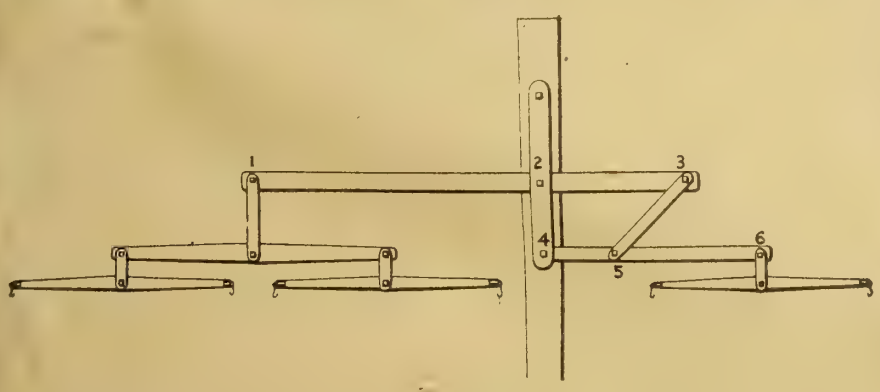
...best paint for a flume; the best ...to repair an old flume, or a new ...ue, is to line it with one of the new ...atent roofing fabrics. Select one ...ith a canvas, or burlap center or ...oundation, as those made of Manilla fiber are liable to sag and tear away from the nails, where exposed to the hot summer sun on a vertical wall. ...ine the flume carefully, cementing ...joints and nail holes according to ...ections furnished with each roll of ...ofing. Give the lining a coat of the same cement every other year, and it is practically everlasting. It will not rust, expand with heat, or contract with cold, and the flume will not leak a drop. It comes in rolls of 100 square feet, and here costs from $2.50 to $4.00 per roll according to the thickness.—W. H. S., Selma.

An excellent suggestion, and we appreciate the courtesy of W. H. S. in sending it in.

Transplanting Orange Trees—Three Horse Evener.

Can orange trees, Valencias, be reset at the age of five or six years with any degree of success? Is it advisable to prune lemon trees severely that are eight years old, bearing well, and have never been pruned? What is the best three horse evener for a farm wagon?—H. C., Santa Ana.

Orange trees at five or six years old can be moved as a matter of possibility but not with any degree of economy. The original navel trees at Riverside were moved a few years ago after being in the ground more than 20 years. They were, however, given great care and great expense was incurred in the moving. Of course they were important trees and one of them was replanted by President Roosevelt while in this state. As a commercial proposition the trees may be better made into stove wood and new, young trees bought from the nursery. No, do not prune the lemon trees severely at first. Cut back gradually and thin out dead or other wood which is not bearing in the center of the tree. Force it to continue and make new wood which will continue its regularity of bearing. Regarding the three horse evener, we give herewith engraving and notes which will explain. This is from sketch and figures given us by Mr. Perry Lewis of Tustin and printed first in the Cultivator of August 1, 1907:



Two feet from 1 to 2; one foot from 2 to 3; one and one-half feet from 4 to 6; six inches from 4 to 5; six inches will do from 2 to 4. Get your pieces straight and measure distance from 3 to 5. Have square holes cut in irons for bolts, so they can be easily removed. In this cut the nigh horse walks next to tree; should you wish to drive the off horse next to the tree, you can reverse the plan. You must place the double-tree part back six inches from the place where you would hitch two horses, or shorten traces. I am using one on a disk and do not notice much side draft.

Sunflower Seed.

Is the sunflower seed a good crop and would one find ready sale for a large quantity of seed?—Subscriber, Lathrop.

We do not know how profitable it would be but there is no question but that a market can be found for these seeds. In fact the Aggeler & Musser Seed Company of Los Angeles say they will purchase quantities of it at Eastern prices plus freight across the continent. The state does not produce what is used here and it nearly all has to be imported. No assurance can be given but probably the price would be not far from $2.75 per hundred. The growing of such crops, however, should always be preceded by correspondence or an understanding with buyers of such seeds before extensive planting is made.

China Trees.

I have some small China trees which I contemplate budding over to umbrellas. A friend contends the resulting buds would still be Chinas.—W. R., San Bernardino.

If the bud takes and starts to grow you may rest assured it will be true to the tree from which it was cut. We have never before heard such a claim disputed and if you can make your buds take and grow you will find them true umbrella trees.

Sweet Pea Seed.

Can you inform me as to how many pounds of sweet pea seed can be raised to the acre? And as to how hot a climate they will stand. Also soil best suited to them.—Subscriber, Santa Barbara.

Any good garden soil and climatic condition will answer for the growing of sweet peas. They are not very fastidious. The average production is probably about half a ton of seed per acre which may command in the neighborhood of seven cents in the market. This would give a return of about $70 per acre. Such a product, however, should not be grown without previously contracting for the disposal of the seed as it is very probable disappointment would be the result. One large Los Angeles seedman has already contracted for several hundred acres which are now growing in the neighborhood of Los Angeles. It is of course too late to plant seed for this year as November or December are proper times for planting.

Lentils.

Where are lentils raised? Will they grow here? I suppose they may be raised for home use. Will the surplus be of value for feeding?—New Subscriber, Santa Cruz.

The requirements for growing this crop are not very much different from those of the ordinary pea. They succeed best in a dry, sandy soil. The seed is very valuable for pigeons and we doubt not poultry would do well on it. They would doubtless grow in your section. While the market is

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Placer Nurseries
(Established 1878)
OUR ASSORTMENT
Comprises all the Best Commercial Varieties of
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and our stock is the best that years of experience, care in selection, and care in growing can produce. That is what you want.
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ALL KINDS OF
STREET AND ORNAMENTAL TREES
MONTEREY CYPRESS and GUAVAS.
We can furnish palm and other ornamental trees eight feet high, which add greatly to the value of a place as soon as planted. We also have a large stock of Eucalyptus Globulus, Corynocalyx, Rudis, Rostrata, Tereticornis, Diversicolor, Robusta and Ficifolia. Our special eucalyptus circular, telling how we grow and handle our eucalypts by the Carroll method, mailed free.
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The Anaheim Evergreen Nurseries, Tim Carroll, Proprietor
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The oldest nurseries in Southern California, established in 1868 by present owner. Nurseries located 200 yards west of West Anaheim station (S. P. R. R.) Sunset Phone Main 413.

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Water Tanks, Wine Tanks made from carefully selected stock by careful and experienced workmen. "Tanks that are well made last a long time." It will pay you to get my prices before buying.
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The Seed House of the Great Southwest
Have just issued a new booklet on Casabas, illustrated in natural colors, It is free; write for it. Also ask for circular on Peanut Culture. If you have not yet received their 1909 catalog, ask for it. Aggeler & Musser Seed Co. 113-115 N. Main St., Los Angeles, Cal.

125 to 140 lbs. of Grapes to the Vine
Raised by Ex-Postmaster Rush Stevens of Sacramento on his ranch with
Tom Lewis' Fertilizer
My Fertilizer is lower in price than other fertilizers and guaranteed to give results. I have hundreds of testimonials. Send for circular and prices.
Tom Lewis, 1916 1918 10th St., Sacramento, Cal.

Classified Liner Columns

Rates 1½ cents per word per issue. No ad. accepted for less than 25 cents. Our classified columns are the clearing house for the readers of the Cultivator. Here you can insert an ad. for the small sum of 1½ cents per word per issue, and be sure that it will be read by thousands.

FARM LANDS FOR SALE.

IMPERIAL VALLEY—DO YOU WANT to help us pioneer the **Weston Townsite** and get paid for it by getting in on the ground floor on the first 10 acre tracts, "without money and without price?"

We can offer a few 10 acre lots surrounding the Townsite at $1000.00 each, to be paid for in work on adjacent tracts or on a share basis of planting to oranges or grape fruit or to vines and deciduous trees. WESTON is situated in the centre of the famous No. 8 Water District and has more than 50,000 acres of the finest garden soil in the Valley tributary to it.

Remember the history of the townsites of Brawley, Imperial, El Centro, Holtville and Calexico and profit while you may.

If you are free to go there we can help you and you can help us. For particulars apply to IMPERIAL INVESTMENT CO., 315 H. W. Hellman Bldg., Los Angeles, Cal.

DO YOU WANT 160 ACRES OF GOOD government land? Rich soil, no alkali or hard pan. Healthy, no malaria. Near oil wells, prosperous, plenty work for settlers. Eight miles of good R. R. town. Have six months to come back on land. No hardships. May be away nearly six months at a time. First cost $160 for 160 acres includes your traveling expenses. Mr. Taft will sign your U. S. title inside of two years. Then you can sell and buy elsewhere if desired. I honestly believe I can help you make Ten Dollars for every dollar you pay me. If you are willing to pay for this information and services come to Cottage Hotel, Armona, Cal. Write JOE CLARK RANCHER, Route 2, Hanford, Cal.

FOR SALE—160 ACRES OF RICH virgin sandy loam land, 9 miles S. W. of Mendota, Fresno Co. Cleared and leveled. Unlimited pumping water. Land $20; with water $30. Free from alkali, hardpan and washes. This is your chance to get land with water worth $150 for one-fifth that price. J. E. FARNHAM, owner, Hollywood, Cal.

FOR SALE—PALOMITAS VINEYARD 194 acres; 106 planted to choice Emperor Malaga and Muscat vines, 3 to 5 years old. Part or all. Half cash, balance on easy terms. MRS. M. E. SHERMAN, Fresno, Cal.

I make a specialty of orange and alfalfa ranches and exchanges. 826 MAIN St., ROOM 9, Riverside, Cal. N. R. BELL.

FOR SALE—LAND WORTH $150 PER acre with water at $40 while it lasts. Rich virgin sandy loam soil free from alkali, hardpan and washes. Leveled and cleared for irrigation. 11 miles south of Mendota in Fresno Co. This is your chance; write J. E. FARNHAM, owner, Hollywood, Cal.

FOR SALE—ON EASY TERMS, A highly improved, very productive, well watered and well situated 40 acre ranch. B. F. YOUNG, Huntington Beach, Cal.

BERRY PLANTS.

CLEARING UP PRICES ON ALL kinds of berry plants, pear on quince root, and nursery stock. State your wants. Wanted, Burger and Val de Penas grape cuttings. TRIBBLE BROS., Elk Grove, Cal.

STRAWBERRY PLANTS FROM ONE year old plants that have not been allowed to bear fruit. Brandywine and Sharpless, $2.50 per 1,000, 35 cents per 100. R. P. NELSON, San Jacinto, Cal.

FOR SALE — BERRY PLANTS; LOGANS, Giant Himalaya, Mammoth and Lucretia dewberries. Would exchange for rooted Tokay. A. P. HENNING, box 225, Cottonwood, Shasta Co., Cal.

FOR SALE—LOGAN, MAMMOTH, PHENOMenal, Himalaya, Blackberry, Dewberry; strong plants, $10.00 per thousand. Strawberries, $3.00 per thousand. GRIDLEY COLONY NURSERY, Gridley, Cal.

FOR SALE—LOGAN, MAMMOTH AND Himalaya berry tips, ten dollars ($10) per thousand. F. O. B., Laton, Cal., ADELBERT COOLEY, Laton, Cal.

HOGS.

REGISTERED BERKSHIRE AND POland China hogs, both sexes. C. A. STOWE, Stockton, Cal.

SITUATIONS WANTED.

A GOOD FLORIST, ORCHARDIST and nursery man, has experience in budding and grafting, also in drying fruit and poultry business, 55 years of age, married, no children, German, wishes a position on a country residence orchard or nursery as superintendent or foreman. Has resided in California about 18 years. References, under letter, A. S., Bureau of the California Cultivator.

MACHINERY.

FOR SALE—JUST OVERHAULED IN local machine shop, 25 H. P. Fairbanks-Morse gasoline engine, as good as new, at a bargain. N.W. Cor Main and Bruno Streets, Los Angeles, Cal.

FOR SALE—6 H. P. DISTILLATE engine standard make, never been used, at a snap. MACHINERY EXCHANGE, 117 Bruno St., Los Angeles, Cal.

FOR SALE—RENT OR EXCHANGE, boilers and engines, gas engines, pipe and oil well casing, pumps, all sizes and makes; get our prices before you buy. A. CANNADY & CO., 691 N. Main St., Los Angeles, Cal.

FOR SALE—5 H. P. VERTICAL GAS engine in best condition, only $65.00, F.O.B., Anaheim, worth $110.00. G. W. PHELPS, 738 S. Union Ave., Los Angeles, Cal.

FOR SALE—MEHRING MILKING MAchine with extra parts and covered pail, all in good order. WM. H. BIRD, Box 6, Compton, Cal.

FOR SALE—UNION GASOLINE ENgines for irrigating, hoisting and marine work, new and slightly used, at special prices. See us before buying. BAILIE & BRANDT Co., Agents, 943 N. Main St., Los Angeles, Cal.

FOR SALE—5 H. P. ELECTRIC motor, also 7½ H. P., as well as other sizes, both A.C. and D. C. Also electric generators. See us for all kinds of electric machinery. BAILIE & BRANDT CO., 943 N. Main St., Los Angeles, Cal.

FOR SALE—LARGE NO. 2 MANN'S green bone cutter with pulley as good as new,—$15 takes it. WM. MANTZ, Santa Maria, Cal.

TREES.

THE SANTIAGO FROSTLESS NURSERY still has some extra fine Eureka lemon trees choice buds, but they are going fast. There are none better. L. F. THURSTON, Proprietor. Sunset Telephone 354 Orange. Address Santa Ana, R. D. 1.

FOR SALE—VALENCIA LATE ORANGE trees. Write for our prices. ADOLPH RIMPAU, Anaheim, Cal.

WALNUT TREES—3 YEAR OLD Seedlings from selected grafted seed of **Placentia Perfection.** Best and cheapest trees in market. G. W. SHERWOOD, Fullerton, Cal.

FOR SALE—LEADING VARIETIES PEACH and apple trees, good stock, bed-rock prices GRIDLEY COLONY NURSERY, Gridley, Cal.

GRAPE CUTTINGS.

FOR SALE—500 THORNLESS CACTUS (Mission) leafs for only 25c per leaf, worth $1.00; 5,000 Cornichon grape cuttings at $5.00 per 1,000; 500 large Bartlett Pears; 500 large Satsumas on Peach; 500 large Satsumas on Apricot; 1,000 Thompson Seedless vines, very large and fine; 1,000 Malagas, the very best and 100,000 other fruit and ornamental trees at very low prices.

H. L. BAUER & SONS,
737 S. Spring St., Los Angeles, Cal.
Catalogue free. Mention Cultivator.

CHOICE GRAPE ROOTS AND CUTTINGS Thompson Seedless, Flame Tokay, Cornichon, Muscat and Red Emperor. Cuttings, price per 100, 50 cents; per 1000, $3.50. Price for rooted vines, Thompson Seedless, Flame Tokay, Cornichon, Red Emperor, Rose Peru, $3.00 per 100 and $20.00 per 1000. J. C. SMITH, Burbank, Cal.

FOR SALE—THOMPSON SEEDLESS AND Zinfandel rooted grape vines—first class—$10.00 per thousand. GRIDLEY COLONY NURSERY, Gridley, Cal.

FERTILIZERS.

NOW IS THE TIME
to fertilize for results in the coming crop.

ARMOUR'S "O.T.M.", "B.B.&P.", and "5-8-2" grow big crops and build up the soil. They have been doing it for years.

THE ARMOUR FERTILIZER WORKS,
Los Angeles, Cal.

SEED.

FOR SALE—CALIFORNIA BLACK walnut seed in sack lots. Wanted: Mayette, Franquette and Parisienne Walnut scions, also Rupestris St. George, Rip. x Cord. x Rup. 106-8, Rip. x Rup. 3306 and 3309 cuttings, grafting size. Address FANCHER CREEK NURSERIES, Fresno, Cal.

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VINES WANTED.

WANTED—A FEW THOUSAND MUScat, Thompson Seedless, and Malaga well rooted vines. IMPERIAL VALLEY NURSERIES, El Centro, Cal.

limited to a certain extent it is probable that any surplus you might have could be marketed at a greater profit than to use for stock food. The tops fed green or dry are an excellent forage.

Veterinary

Answers in this column by Dr. R. T. Whittlesey, are without charge.

The reason the answers to these queries have been delayed is because the editor of this department has been in Sacramento for two weeks in the interest of legislation to improve the standard of veterinarians in California. Several bills introduced by State Veterinarian Keane for the eradication of scab in sheep, Texas fever tick in cattle, and glanders in horses, as well as other sanitary measures of great interest to stock owners have passed or are well up on the file toward third reading. This state will soon be a clean state and out of Federal quarantine.

Swelling on Horse.

I have a mare that bruised her breast just below the shoulder. There was a slight cut, which I think was made by the head of a nail. The place itself never got sore, but swelling came between her front legs, which made her very stiff. As I kept treating it one way or another, the swelling left between her front legs and traveled back under her belly and the stiffness also disappeared. Now the swelling is in a U shape under her belly, about a foot across the front side. She is fat and appears to be feeling well. No abscess seems to be forming, as I expected. This happened about five weeks ago. There seems no noticeable change since its last location.—S. H., Corning.

Make a thorough examination to see if there is any pus; if so let it out by a large incision. If no pus, have a rowel or seton put through it from top to bottom, clean and move once daily. Leave it in for about two weeks.

Diseased Ovaries.

Please give cause and cure for a mare with following symptoms: Age nine years. In heat continually; urine light and clear; picks up in flesh when idle but gets poor when worked; does not sweat freely but instead pants and trembles, her shoulders, especially, cannot stand anything; legs stock badly; hair dead looking; was all right last summer only in heat; wind was good when I stopped working her in fall. Was fed alfalfa and ran out when idle. In fall, when I began plowing, I changed to barley hay and barley. She got thin and I changed to Indian corn and two quarts bran with occasional feed of alfalfa. Have given her two teaspoonfuls a day of sulphate of iron and gentian root for three weeks. Has had a condition powder two or three times a week all summer.—B. C.

The mare has without doubt got diseased ovaries and these should be removed. She may have a diseased liver but the symptoms caused by the ovaries will often be so varied as to overshadow any other trouble. Have only a first-class veterinarian attempt the removal of the ovaries, as, while it is simple, great care must be exercised.

Sweeny.

What treatment is best for a horse that is sweenyed?—J. D., Los Angeles.

The treatment we have found best is the hypodermic injection of a very strong salt solution, thoroughly sterilized, and injected to the bone. Repeat as soon as the swelling goes away.

To Correct Looseness.

I have a five-year-old mare that has been quite loose in the bowels for about two weeks. She passes considerable brown colored water with dung. Am feeding tame oat hay with no grain; also fed some wild oat hay with the same result. Can you give me remedy?—G. W. H., Reedley.

Get the following: powdered chalk, two pounds; gallic acid, one ounce; mix thoroughly and give tablespoonful twice daily.

Sore Ear.

I have a five-year-old mare. About the middle of last November she got a sore on the inside of the left ear, which broke, considerable pus or fluid coming from the sore. It appeared at times to get better and then worse. The end of the ear bent and hangs down, which looks very bad.—T. G. S., Yettem.

Open the wound so as to give complete drainage, clean it out well and

(Continued on Page 175.)

POULTRY

FOR SALE—WHITE WYANDOTTES, Hayes "Bred to Lay" strain. Eggs for setting, $1.50 and $2 per 15, $6 to $8 per hundred. Hens, $1.50 to $3; cocks, $3 to $5; trios, $6 to $10. Discount of 25 per cent. on hens and pullets in lots of 50 or more. Write for particulars. F. E. JUDSON, Carson Heights Ranch, San Pasqual Valley, Escondido, Cal.

BUFF ORPINGTONS—BLOOD AND breeding tells. Five years careful selection for points and laying; results, first prize pullets last year and 50 per cent. egg yield during moulting season this year. Eggs, $1.00, $1.50 and $2.00. Special prices on incubator lots. E. G. WALL, 1920 Monticello Ave., Hollywood, Cal. Phone Hollywood 1943.

LIGHT BRAHMA, FIRST PEN, FIRST Cockerel at 20th Annual L. A. County Poultry Assn. show. Cockerels from same mating $3.00, $4.00 and $5.00 each. H. J. SHOW, R. 1, Santa Barbara, Cal.

WHITE ROCKS—SNOW WHITE, prize winning, bred to lay. Eggs $1.50 and $2.00 per sitting. W. E. B. SMITH, 820 Elm Ave., So. Pasadena, Cal. Phone Sunset, Main 2866.

CHAS. E. SMITH—BREEDER OF BARRED Rocks exclusively. Winners of the blue wherever shown. Eggs $3.00 per 15, stock for sale. GARDENA, Cal.

RHODE ISLAND RED ROOSTERS for sale. B. F. YOUNG, Huntington Beach, Cal.

BLACK BEAUTY POULTRY YARDS—SOME of the best S. C. Black Minorcas on the Coast. Chicks, $12 per 100; eggs from selected matings, $1.50 per 15, $6 per 100. MRS. A. F. FRESE, box 456, Dixon, Cal.

SILVER CAMPINES, GREAT LAYERS, non-sitters, beautiful fowls, splendid foragers. Recently imported from Belgium. Eggs for hatching $3.50 per doz. E. SMITH, 3610 East First St., Los Angeles, Cal.

FIFTY MAMMOTH BRONZE IMported gobblers for sale at $5.00 each. For particulars address J. R. SNEAD, Dixon, Cal.

PARTRIDGE WYANDOTTES—C. Andrews, 823 W. Franklin Ave., Hollywood Cal.—1st cock, hen, cockerel and pullet; 2 cups, Poultry Breeders' Show, 1908.

PRIZE - WINNING WHITE MINORCAS. Eggs for setting, $2 for 15; $3 for 30; $6 per hundred, f.o.b. express. C. S. LANE, Santa Barbara, Cal.

FOR SALE—BABY CHICKS, ALL VArieties, 100 lots upwards. J. STANSFIELD, 3301 East 14th St., Fruitvale, Cal.

RHODE ISLAND RED EGGS FOR hatching. Fertility guaranteed. $1.50 per 13; $7.00 per hundred. SCOTT WILSON, Altadena, Cal.

O. L. CRANE, BREEDER OF PIT AND Cornish Indian Games. Rural No. 3, Santa Rosa, Cal.

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FULL COLLARED SCOTCH COLLIE puppies. Pedigrees, prices and descriptions on application. DR. ELIZABETH CUMMINGS, Oxnard, Cal.

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WANTED—FROM 10,000 TO 20,000 seed-bed sour orange stock. E. H. STAGG, 5600 Monte Vista Ave., Los Angeles, Cal.

AGENT WANTED.

FOR SALE—TERRITORY OF CALIfornia for manufacturing concrete fence posts. Machine well covered by patents. Will furnish the machine for manufacturing for $25.00. Will sell you territory or county rights on terms you can make good money. Address for circular and further information, C. C. HILLIS, Riverside, Cal.

VEGETABLES WANTED.

WANTED—TO BUY ALL KINDS OF early vegetables from growers direct. References, Wells Fargo and any bank. MRS. M. VETTER, Santa Maria, Cal.

Have the Time of Your Life

with my Portable Billiard and Pool Tables. Send for Catalog and let me show you good, practical Tables at the price of toys. Used anywhere. No special room required. **C. RIDDERHOF**
Merchants Trust Bldg., Los Angeles

Household Department

WHY SHOULD THE SPIRIT OF MORTAL BE PROUD.

The following, written by William Knox, was President Lincoln's favorite poem:

Oh! Why should the spirit of mortal be proud?
Like a swift-fleeting meteor, a fast-flying cloud,
A flash of the lightning, a break of the wave,
Man passes from life to his rest in the grave.

The leaves of the oak and the willow shall fade,
Be scattered around, and together be laid;
And the young and the old, and the low and the high,
Shall moulder to dust, and together shall lie.

The infant a mother attended and loved,
The mother that infant's affection who proved,
The husband that mother and infant who blessed,
Each, all, are away to their dwellings of rest.

The maid on whose cheek, on whose brow, in whose eye,
Shone beauty and pleasure—her triumphs are by;
And the memory of those who loved her or praised,
Are alike from the minds of the living erased.

The hand of the king, that the sceptre hath borne,
The brow of the priest, that the mitre hath worn,
The eye of the sage and the heart of the brave,
Are hidden and lost in the depth of the grave.

The peasant, whose lot was to sow and to reap,
The herdsman, who climbed with the goats up the steep,
The beggar who wandered in search of his bread,
Have faded away like the grass that we tread.

The saint who enjoyed the communion of heaven,
The sinner who dared to remain unforgiven,
The wise and the foolish, the guilty and just,
Have quietly mingled their bones in the dust.

So the multitude goes, like the flower or the weed,
That withers away to let others succeed;
So the multitude comes, even those we behold,
To repeat every tale that has often been told.

For we are the same that our fathers have been,
We see the same sights our fathers have seen;
We drink the same stream and view the same sun,
And run the same course our fathers have run.

The thoughts we are thinking, our fathers would think,
From the death we are shrinking our fathers would shrink;
To the life we are clinging they also would cling—
But it speeds for us all, like a bird on the wing.

They loved, but the story we cannot unfold;
They scorned, but the heart of the haughty is cold;
They grieved, but no wail from their slumbers will come;
They joyed, but the tongue of their gladness is dumb.

They died. Ay! they died; and we things that are now—
Who walk on the turf that lies over their brow,
Who make in their dwellings a transient abode—
Meet the things that they met on their pilgrimage road.

Yea! hope and despondency, pleasure and pain,
We mingle together in sunshine and rain;
And the smile and the tear, the song and the dirge,
Still follow each, like surge upon surge.

'Tis the wink of an eye, 'tis the draught of a breath,
From the blossom of health to the paleness of death.
From the gilded saloon to the bier and the shroud;
Oh, why should the spirit of mortal be proud?

LINCOLN'S GETTYSBURG ADDRESS.

FOURSCORE and seven years ago our fathers brought forth upon this continent a new nation, conceived in liberty, and dedicated to the proposition that all men are created equal. Now we are engaged in a great civil war, testing whether that nation, or any other nation, so conceived and so dedicated, can long endure. We are met on a great battle-field of that war. We are met to dedicate a portion of it as the final resting-place of those who here gave their lives that that nation might live. It is altogether fitting and proper that we should do this. But in a larger sense we cannot dedicate, we cannot consecrate, we cannot hallow this ground. The brave men, living and dead, who struggled here, have consecrated it far above our power to add or detract. The world will little note, nor long remember, what we say here, but it can never forget what they did here.

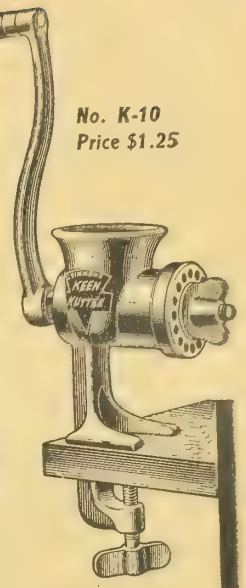
It is for us, the living, rather to be dedicated here to the unfinished work they have thus far so nobly carried on. It is rather for us to be here dedicated to the great task remaining before us, that from these honored dead we take increased devotion to the cause for which they gave the last full measure of devotion; that we here highly resolve that these dead shall not have died in vain, that the nation shall, under God, have a new birth of freedom, and that the government of the people, by the people, and for the people, shall not perish from the earth.

ABOUT THE HAIR.

FOR a girl to preserve a lovely head of hair with which nature has endowed her, she must keep the scalp healthy and the hair follicles must be well nourished. Dandruff is a result of a clogged condition of the scalp, being the scaling off of the dead particles of the skin, and in its early stages dandruff may be very easily removed, but if neglected, a diseased condition of the scalp will take place. Equal parts of alcohol and castor oil, applied after a thorough shampoo with soap and water, is the best remedy for dandruff. Hard rubbing is the most effective means of promoting the growth of the hair, and a few minutes vigorous rubbing with the fingers on the scalp daily will soon bear evidence of its efficacy. The scalp must be kept clean, and when hair is naturally oily frequent washing is the only remedy and the best way to clean the scalp and hair is to stir enough good white soap in soft warm water to make a

Less Work—Dainty Dishes

No. K-10
Price $1.25



No woman realizes how much work she could save, and the tempting variety of dishes she could offer at the table, until she possesses a Keen Kutter Food Chopper.

Just a few turns of the handle instead of the tiresome chop, chop at the chopping bowl. Meat, fish, vegetables, fruits are chopped uniformly, coarse or fine as you wish. The

KEEN KUTTER

Meat and Food Chopper

is attached to the table or detached in a second—works so easily a child would enjoy using it—wears a lifetime—more easily cleaned than a chopping bowl.

Sold under the famous Keen Kutter name and trademark, which always and everywhere guarantee satisfaction or money returned. Ask for the Keen Kutter Food Chopper by name.

If not at your dealer's, write us.

E. C. SIMMONS KEEN KUTTER TRADE ST. LOUIS MARK U.S.A.

SIMMONS HARDWARE COMPANY (Inc.) St. Louis and New York, U. S. A.

TRIPLE ACTION IS THE ONLY REAL SAFETY

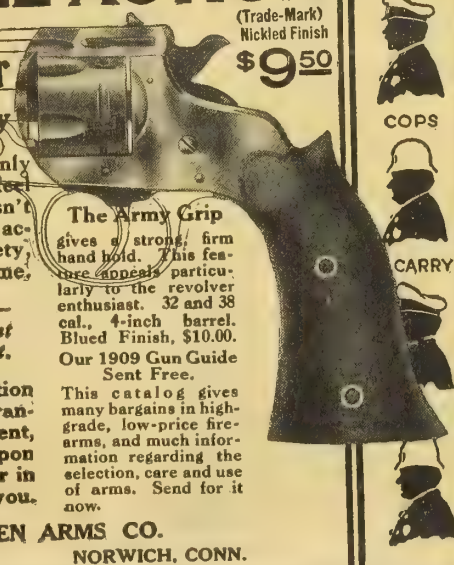
You don't need to worry about it. You don't need to wonder whether the "safety mechanism" is going to work or not. The

HOPKINS & ALLEN **TRIPLE ACTION**

(Trade-Mark) Nickled Finish $9.50

Safety Police Revolver

Insures Absolute Safety



The third or safety action is so plainly a safety action that a blind man can feel it and know it when he feels. It isn't an-added-on mechanism. It's the action of the revolver that secures safety; positive, perfect safety all the time.

It shoots when you want it to shoot—quick and hard. When you don't want it to shoot, nothing can make it.

This is the best revolver proposition on the market. A revolver guaranteed to the fullest extent. Sent, charges prepaid, to any address, upon receipt of price. If there's a dealer in your locality, ask him to show it to you.

The Army Grip gives a strong, firm hand hold. This feature appeals particularly to the revolver enthusiast. 32 and 38 cal., 4-inch barrel. Blued Finish, $10.00.

Our 1909 Gun Guide Sent Free. This catalog gives many bargains in high-grade, low-price firearms, and much information regarding the selection, care and use of arms. Send for it now.

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1 lb. Peas, Impd. Yorkshire Hero
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1 lb. Beans, 6 Weeks
1 lb. Beans, Golden Wax
1 lb. Beans, Ky. Wonder
1 oz. Beet, Eclipse
1 oz. Beet, Edmund Blood Turnip
1 pkt. Brussels Sprouts
1 pkt. Cabbage, Winningstadt
1 pkt. Cabbage, Drumhead
1 pkt. Cabbage, Succession
1 oz. Carrot, Long Orange
1 oz. Carrot, Danvers
1 pkt. Cauliflower, Snowball
1 pkt. Celery, Golden Self-blanching
1 lb. Sweet Corn, Stowells
1 lb. Sweet Corn, Early Mammoth
1 pkt. Corn, Salad
1 oz. Cucumber, White Spine
1 oz. Cucumber, Long Green
1 pkt. Egg Plant, New York
1 pkt. Endive, Green Curled
1 pkt. Kale, Dwarf Curled
1 oz. Lettuce, Big Boston
1 oz. Lettuce, Iceberg
1 oz. Muskmelon, Rocky Ford
1 pkt. Muskmelon, Hackensack

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2 oz. Radish, Scarlet Turnip
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1 oz. Radish, White Icicle
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1 oz. Spinach, Prickly
1 oz. Spinach, Round
1 oz. Squash, Hubbard
1 pkt. Squash, White Bush
1 pkt. Tomato, Beefsteak
1 pkt. Tomato, Stone
1 oz. Turnip, Purple Top Strap Leaf
1 oz. Turnip, Golden Ball
1 pkt. Sage
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1 pkt. Sweet Marjoram

Germain SEED AND PLANT CO.
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FOUNDED IN 1857. CAPITAL FULLY PAID $1,000,000.00

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Exclusively a Savings Bank whose policy is for ***Conservatism*** and ***Safety,*** the result of ***Fifty-One Years' Experience.***

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Founded June 18, 1862 **Northwest Cor. California and Montgomery Sts., San Francisco**

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Every facility afforded for opening accounts and making deposits and withdrawals by mail. Correspondence invited.

Angle Lamp

The Light That Never Fails

Thousands in use all over the country. A good light is the greatest pleasure and the first necessity of every home.

The only lamp on the market that is sold under an absolute guarantee.

Remember, the light from Kerosene is the light science has agreed upon as being the purest and best, because it is soft and mellow and restful to the eyes.

Here are a few of The Angle Lamp Merits:

NO UNDER SHADOW. NO SMOKE, NO ODOR, LITTLE HEAT.

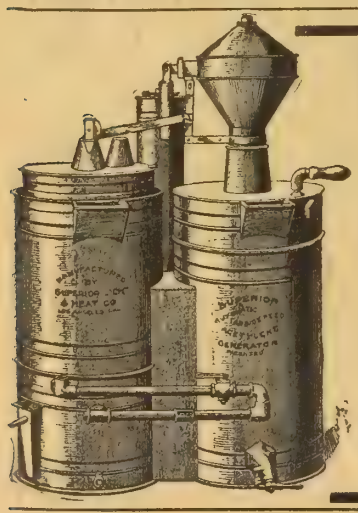
GREAT ECONOMY—COST LESS TO BURN than an ordinary lamp. As easy to operate as gas or electricity, and better than either. ABSOLUTELY SAFE under all conditions. Lighted and extinguished like gas. Burned HIGH or LOW like GAS without a trace of odor. And a BRILLIANT, soft, steady, shadowless light—but this you will have to see to appreciate.

The lamp as shown in cut burns 22 hours on 3 quarts of oil.

Send for Illustrated Catalogue with Prices

Boesch Lamp Co., 1135 Mission St., San Francisco

Established 1869 Incorporated 189



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The Superior Generator

is Automatic, Safe, Satisfactory. A Brilliant Light In Every Room. A Clean Fire always ready to cook. Hot Water if you wish. No Trouble to operate.

Let us tell you about it. Catalogue mailed free on request.

Superior Light & Heat Co.

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Mercer's Weed Process Foundation

If you would be successful with your bees use Mercer's Weed Process Foundation. Absolutely the best on the market. Send me your beeswax to make up.

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nice lather and add a little powdered borax and rub the scalp vigorously with the fingers. When the hair seems clean, rinse through two waters of the same temperature as the first and with a little borax in each, as the borax not only softens the water but has an excellent effect on most person's hair, making it soft, glossy and increasing its growth. If possible dry the hair in the sunshine and dry with a clean, soft towel. When the head is once clean it should be kept so, and should be protected while sweeping or riding in the dust.

To keep the hair in waves, moisten with the white of an egg mixed with cold tea, then put upon waves, and the well beaten white of one egg mixed with half cup of cold tea is the right proportion. Keep the hair strands clean by frequent brushing using a brush of firm, fine bristles which will go through the heaviest locks, and when brushing and comb-scalp, and for the sake of the hair if not for cleanliness, combs and brushes in daily use need frequent washing.—A. M. H.

BEDS AND BEDDING.

There is not enough thought given to the daily care of bedding, and in this as in other things, the matter of health should be considered of paramount importance. The bedding should be removed a piece at a time and carefully spread over chairs before open windows, and every child should be taught to throw off the covers the moment he leaves the bed that the exhalations from the body may escape instead of being absorbed by the bed and bed clothes. It is a good plan to keep a whisk broom hanging in a convenient place and brush the bed and mattress every two or three days to keep them free of dust. If any bugs are found on the bed, try quicksilver as it is one of the best remedies for these insect pests. First wash the slats and sides of the bed with strong salt water and let it dry, then take the white of one egg to one ounce of quicksilver and put together in a large plate and beat with a fork until the egg absorbs the quicksilver; then apply with a feather or small brush to every crack and crevice, and this quantity is sufficient for two or three beds. White counterpanes look better than any other outside covering and the best way to clean them without hard rubbing, is to wash out the most soiled places in warm suds and then put them to soak over night in warm soft water to which a small cup of coal oil has been added. In the morning fill a tub two-thirds full of warm rain water and stir in enough pearline to make a good lather, then wash clean and rinse through two waters with a little starch and bluing in the second and dry in the sunshine, and they will need no boiling unless they have been allowed to become very soiled or yellow. They will come through the cleaning process a beautiful white if the cleaning is carefully done, and they look best if they are ironed on the wrong side over a table or board covered with a heavy blanket, as this throws out the pattern and takes away the rough look they will have if they are not ironed. —M. A. T.

IMPATIENT SUSIE.

"Oh I can't thread this needle, ma,"
Was little Susie's cry;
"Just as the thread is going through,
The needle winks its eye."
—October Woman's Home Companion.

BUTCHER BOY'S VALENTINE.

Deer heart, I'm in an awful stew
How I'll re-veal my love for you.
I'm such a mutton-head when you're near,
I know it's only cow-ardice
That makes these lamb-entations rise,
I dread a cut—let me explain:
A single roast would give me pain.
I should not like to get the hooks,
And dare not steak my hopes on looks.
I never satisage eyes as thine.
If you would but-cher hand in mine
And live-r round me every day,
We'd seek some ham-let far away;
We'd meat Life's frowns with Love's caress,
And cleav-er road to happiness.
—Maurice Smiley.

MORE WETNESS, PLEASE!

It isn't time
Just yet to quit;
We've only had
A little bit.
So kindly take
This timely hunch,
Another bunch
Of wetness, and
We'll whoop it strong,
And chant your praise
In happy song;
We'll tune 'em up
In sweetest strain,
If you will give
Us some more rain.
Just give us one
Immense downpour,
And you'll not hear
A kick nor roar.
But please, oh please
Don't make a bluff
At it; we've not
Had half enough.
—E. A. Brininstool.

Well! How much does Brininstool want?

HOUSEKEEPING.

Women are asking how they can make housekeeping easy and more pleasant; and this applies to the ranch as well as to the town woman. Many women are not willing to use poor, slow methods of twenty-five years ago, when there are many better ones in use. It is true that our grandmothers were busy women, for they had to make the carpets, candles, preserves, salt the meats, make the clothing, knit the mittens and hoods, and do almost everything else that was needed in the home. The factories of today have taken from the home many of these industries. In the old training the daughter helped her mother with the work, but this practice is no longer as common as it used to be. On account of modern utensils and conveniences the real housework is less, but more and better management is needed in the housekeeping of today. The day will come when the housekeeper must know the easiest and most systematic way of doing things. Ninety-five per cent of the food we eat is prepared by women. Brains must be used in planning foods for people in the house, and a mother should know how important it is to have suitable food and to have it well cooked. We study the needs of animals in our barns and in our public parks, and we should be just as anxious about our children.

It is impossible to overestimate the importance of proper feeding in childhood; it is the first few years that count. Children sometimes dislike certain food, but a tactful mother can do a great deal. Does it not seem that every mother would be willing to give good, wholesome, simple food to her child for the first ten or fifteen years of its life, knowing that it means good health, good teeth, and a good stomach for the rest of the child's life?—Mary F. Rausch, Colorado Agricultural College.

Mrs. Homer:—"I can't understand why that woman who just moved next door spends so much time with her pet dog."

Mr. Homer.—"Oh! then you haven't seen her husband."

"Philosophy iz a fust rate thing to hav, but you kant alleviate the gout with it, unless the gout happens to be on sum other phellow."—Josh Billings.

HE PREFERRED ONE GIRL.

When J. M. Barrie, the author of "Peter Pan," addressed an audience of a thousand girls at Smith college during his American visit of last year, a friend asked him how he had found the experience.

"Well," replied Mr. Barrie, "to tell you the truth, I'd much rather talk a thousand times to one girl than to talk one time to a thousand girls."

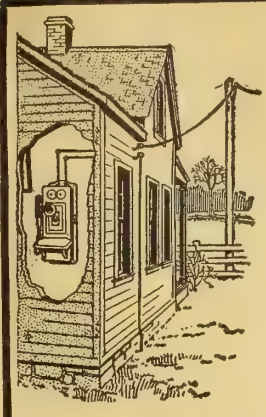
Mother.—"I am sorry to hear that Tommy Smith tied a kettle to a poor dog's tail. You wouldn't do such a thing would you?"

Bobby:—"No, indeed, mother."

Mother:—"Why didn't you stop him, Bobby?"

Bobby:—"I couldn't, mother; I was holding the dog."

"What have you got in the shape of cucumbers this morning?" asked a customer of the new grocery clerk. "Nothing but bananas, ma'am."



Rural Telephones

Do you realize that rural telephones, more than anything else, tend to increase the earning power of every farm and farmer? Do you realize that

ALL of the material needed to build the very best rural telephone line—exactly the same as the Bell Company puts up—will cost you and your neighbors less than 20 bushels of wheat each?

Over 4,000,000 Western Electric Telephones

are in use in the United States to-day. We made the first telephones and we have made the most—in fact, we have made more than all other manufacturers combined.

We have brought the rural telephone within the reach of every farmer, and with our Free Bulletins before him a boy can install and operate the system. Our telephones are guaranteed.

Cut out this advertisement, write your name and address on the margin and mail it *to-day* so that the Free Bulletins, which describe the entire plan in detail, may be sent you immediately.

WESTERN ELECTRIC COMPANY

DYNAMOS-MOTORS WESTERN ELECTRIC COMPANY CABLE-TELEPHONES-SUPPLIES

EASTERN New York, Philadelphia, Boston, Pittsburg, Atlanta

CENTRAL Chicago, Indianapolis, Cincinnati, Saint Paul

Manufacturers and Suppliers of all Apparatus and Equipment used in the Construction, Operation and Maintenance of Telephone Plants.

WESTERN Saint Louis, Kansas City, Denver, Dallas, Omaha

PACIFIC San Francisco, Los Angeles, Seattle, Salt Lake City

Northern Electric and Manufacturing Co., Ltd., Montreal and Winnipeg

Write Our Nearest House

AMERICAN TELEPHONE & TELEGRAPH CO. LOCAL AND LONG DISTANCE TELEPHONE BELL SYSTEM AND ASSOCIATED COMPANIES

71

About the House

Under the above head Elbepe will regularly conduct a department filled with helpful suggestions for the home maker. Some will refer to the work of the kitchen, some to the parlor, some of a more personal nature. All will be of value and will, we trust, aid in creating more of a "family feeling" in the Cultivator household. Do our readers wish information, or if a helpful suggestion for others is in hand, send it in to Elbepe, care of the Cultivator.

THIS year is made memorable by a remarkable series of centennial anniversaries. Tennyson and Poe and Oliver Wendell Holmes, Mendelssohn and Chopin, Darwin, Gladstone, and Lincoln, what a list of great names. Poets, musicians, scientist and statesmen. On February 12, the American people everywhere will reverently celebrate the one hundredth anniversary of the birth of Abraham Lincoln, our great war president, and one of the greatest statesmen, not of America alone, but of the world.

"Our children shall behold his fame,
The kindly-earnest, brave, far-seeing man,
Sagacious, patient, dreading praise, not blame,
New birth of our new soil, the first American."

* * *

A clever club woman has formulated a "rule of four" that will, if properly applied, make easy many tiresome household tasks. The "rule of four" is—"Simplify, Beautify, Jollify, Glorify." Try it and see if it will "prove."

A prize recipe for cooking prunes is to wash one pound of prunes in several waters, nearly cover with water, and let stand for ten or twelve hours. Cook very slowly until tender and just before taking from the stove add a large tablespoonful of sugar.

* * *

These winter evenings some of us Californians have had many a pleasant evening at "our club." It has no other name, but it has been the means of several hours pleasure every month for all of us, and that means all the family, father, mother, boys and girls, two or three grandmothers and grandfathers, aunts and uncles and a baby or two, all the members of eight or ten neighboring families. Every other Friday night we meet at the home of some member of the club and the host and hostess for the evening furnish the entertainment and the entertainment covers everything—something to amuse, something to instruct and something to eat or drink. We do have good times these evenings—no two the same—and the oldest and the youngest and all in between go home with a contented feeling at their hearts. One hostess who had a large kitchen had a candy party. Another evening we had the old songs, and the young people found that "rag time" songs were not the only ones worth hearing. This evening the hostess served the old fashioned seed cakes and a cup of tea with lemonade for the youngsters. One evening the children of the "club" furnished the entertainment,—Mother Goose sitting in her shoe at one end of a long room. She heard the complaints of all her family. Little Bo Peep told of her lost sheep, Mother Hubbard of her bare cupboard, Little Boy Blue,—all came to tell "Mother" of their troubles. Some of the little folks sang the songs as the various characters came forward. We have several good story tellers in our neighborhood and one of the most delightful evenings was one of stories, one after another. I can't begin to tell you of the many good things we have enjoyed together, young and old. In these busy days we are too prone to go each his own way and thus parents and children drift apart in tastes and aims.—Elbepe.

ABSURD.

Don't think because
You have a grouch,
The whole wide world
Should bellow "Ouch!"
—Birmingham Age-Herald.

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The Wm. H. Hoegee Co., Inc.
138-40-42 South Main, Los Angeles

The Produce Markets

Los Angeles Markets

LOS ANGELES, Feb. 10, 1909.

Butter.

Butter has declined 2½ cents on extras during the week and with freer transportation from the North will probably make a further decline. At present the market is firm with light receipts.

Produce Exchange wholesale quotations are as follows with actual selling price to the trade 2½c advance on Extras.

Creamery ex per roll	.75
Firsts	.70
Eastern extra per roll	.70
Cooking	.23@25
"Butterine"	.16@20

Cheese.

Southern California Anchor	.15½
Northern fresh	.15½
Longhorn	.19
Eastern singles	.17
Cheddars	.17
Swiss	.16½
Imported Swiss	.27@28
Daisy	.17@17½
Limburger	.18@21
Oregon triplets	.16
Twin	.17

Eggs and Poultry.

Eggs continued to advance during the past week until 44 cents for extras was reached. They have now dropped to 43 and it is now rumored that the permanent spring decline has started. Prices in the immediate future will, however, depend on weather conditions.

Eggs local candled	.43
Eggs case count buying price	37@40

Dealers pay for live stock.

Hens per pound	.14@16
Young roosters per pound	.18
Fryers	.20
Broilers per lb	.22
Roasters	.18
Old roosters	.8
Turkeys	.16@20
Geese	.15@16
Ducks	.15@16
Squabs	.1.25@1.75

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs from 175 to 200 pounds	6¼@6½
Prime steers	.4¾@5
Heifers	.4@4¼
Calves per pound	.5
Sheep ewes per head	.3.75@4.00
Lambs per head	.3.00@3.50
Wethers	.4.50@5.00

Potatoes.

Potatoes have changed but slightly and the rapid advance seems to have been checked. Market is firm.

Wholesale prices are:

Sweets per ctl	1.50@1.75
Burbanks local	2.00
Sweets choice	1.25
Highland fancy	1.85
Highland choice	1.70
Coast	2.00@2.15
Salinas	2.10
Idaho's	1.70@1.85
Oregon Early Rose	2.50
Colorado's	1.85

Onions.

Wholesale quotations:

Australian Browns	2.25
Nevadas	2.50
Garlic	.12

Vegetables.

Artichokes per doz Northern	1.00@1.15
Asparagus per lb	.25@35
Beets per doz	.35@40
Bell peppers per lb	.20@22
Beans string	.15
Beans Limas per lb	.8@10
Brussels sprouts per lb	.10@11
Cabbage Red per lb	.3
Cabbage sack	.1.25@1.50
Celery per crate	.2.85
Chili per lb	.18
Chili dried	.10@12
Chicory per doz	.40
Cucumbers per doz hot house	40@1.75
Cauliflowers per doz	.60
Carrots per doz	.35@40
Egg plant per lb	.8
Green onions per doz bunches	.25
Horseradish per lb	.12
Lettuce per crate	.50@1.00
Lettuce choice	.75
Mushrooms per lb	.35
Peas sugar per lb	.6@9
Parsley doz	.20
Parsnips	.35@40
Rutabaga per doz	.40
Rhubarb	.85
Radishes per doz	.15@20
Salsify	.40
Summer squash per box	.1.00@1.25
Spinach per doz	.20
Turnips doz bunches	.35@40
Tomatoes crate	.2.50

Citrus Fruits.

Navels fy	.2.00@2.50
Navels ch	.1.75
Tangerines	.1.45@1.60
Grapefruit seedless	.3.25@3.75
Grapefruit seedlings	.2.25
Lemons fy	.2.25
Lemons choice	.1.25
Limes per basket	.50

Fresh Fruits.

Wholesale prices on the market are:

Baldwins 3½ tier	1.65
Bellflowers	1.10
Newton Pippins	1.25@1.50
Fall Pippins	1.25
Red Pearmains	1.35
Spitzenberg	2.00@2.50
Grapes Red Emperors	1.75
Guavas per lb	4@6
Cornichons	1.25
Guavas	6
Pears lug obx	1.25
Persimmons per box	2.25
Pomegranates per box	1.75

Dried Fruits.

Wholesale prices are:

Apricots	9½
Exap. apples fy per lb	6½@7½
Figs loose white	5
Figs blk	5
Peaches in boxes	7½
Peaches sacks	6
Pears	9
Nectarines	9@10
Prunes 30's to 40's boxed	8
Prunes 40's to 50's	7½
Prunes 50's to 60's	7

Beans Dried.

Wholesale prices are:

Limas per ctl	4.75
Pink No. 1	3.20@3.25
Lady Washington	4.75
Small white	5.50
Black eyes	3.50
Garvanzas	4.50
Lentils	8.00
Bayou	3.50

Nuts.

Almonds IXL per lb	13½
Almonds choice	11½
Pecans polished	12@17
Peanuts Virginia	6½
Peanuts California	5
Walnuts No 1	12@12½
Chestnuts	8@8½

Honey.

Wholesale quotations:

Extracted water white	8
Extracted Light Amber	7
Comb W W	15
Comb white	14
Beeswax	30

Hay.

Prices paid to producers f. o. b. Los Angeles are as follows:

Barley No 1	18.00@20.00
Barley No 2	15.00@17.00
Alfalfa northern per ton	14.00@15.00
Alfalfa local	15.00@18.00
Tame Oat No 1	20.00@22.00
Wheat No 1	18.00@20.00
Wheat No 2	15.00@17.00

Grains.

Wholesale selling price f. o. b., Los Angeles.

Wheat new per ctl	2.00
Kaffir corn	1.75
Corn Eastern sacked	1.75
White oats	1.90
Seed Rye	1.80

Feed Stuff.

Wholesale selling price f. o. b., Los Angeles:

Cracked corn	1.80
Shorts	1.80
Bran	1.65
Oil cake meal	2.50
Feed meal	1.85
Rolled barley	1.60

San Francisco Markets

SAN FRANCISCO, Feb. 9, 1909.

Butter.

Butter is very firm and has advanced materially during the week. Present condition will prevail until warmer and more settled weather prevails. Receipts are light. With settled weather and resumption of transportation a material decline will probably come.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras per lb	35
California firsts	32½
California seconds	28
Ladles extra	23½
Storage Cal ex	31

Cheese.

California flats fy	14
Firsts	12½
Cal Young America fy	16½
Firsts	16
Seconds	11½
Young American Oregon fy	16
Eastern N. Y. Cheddars fy	17
Oregon flat fy	14

Eggs and Poultry.

Eggs have declined 3 cents on extras and all other goods show a tendency to the regular spring decline. No particular weakness prevails but receipts are much heavier.

Official quotations of the S. F. Wholesale Dairy & Produce Ex. are:

Fresh ranch extras	37
Eggs first per doz	36½
Eggs second	36
Pullets selected	35
Hens per doz	5.00@6.50
Hens extra	7.00@9.00
Young roosters	7.00@7.50
Old roosters	4.00@5.00
Fryers per doz	6.50@7.00
Broilers per doz	4.50@6.50
Geese per pair	2.00@3.00
Goslings per pair	1.75@2.00
Ducks young	5.00@9.00
Live Turkeys	19@21
Dressed Turkeys	20@26
Pigeons young	2.00@3.00

Live Stock.

San Francisco prices gross weight:

Steers No 1	5
Do second quality	4½
No 1 cow and heifers	4
Second quality	3½
Hogs 100 to 130	6
Hogs 130 to 250	6⅜
Rough heavy	4½@5
Calves per lb	4@5
Lambs spring	6½
Wethers No 1	5¾@6
Ewes No 1	5¼@5½

Potatoes.

Wholesale market quotations:

River white fy sacks	1.40@1.60
Early Rose	1.75@1.85
Salinas Burbanks	1.65@1.80
Sweets per crate	1.60@1.75
Lompoc Burbanks	2.00
Early Rose seed	1.25@1.30
Oregons	1.75@1.85

Vegetables.

Wholesale quotations:

Aparagus per lb	17½@22½
Bell peppers per lb	25
Brussels sprouts per lb	3@5
Celery per doz	40@50
Celery per half crate	1.00@1.25
Cucumbers per doz	75@1.00
Chili peppers per lb	20
Egg plant per lb	25@30
Green peas per lb	4@7
Mushrooms per lb	5@8
Marrowfat squash per ton	20.00@22.50
Squash per box Southern	1.00@1.50
Onions green per box	65@75
Okra per box	1.25@1.50
Rhubarb per box	1.50@2.00
Tomatoes box Los Angeles	1.00@1.50
String beans	8@12½
Wax Beans	10@12½
Garlic new	8@10

Onions.

Onions all grades	2.00@2.25

Citrus Fruits.

Navels fy & large sizes	1.50@2.50
Tangerines crates	75@1.50
Mandarins	1.35@1.60
Grapefruit seedless	3.00@3.50
Grapefruit seedlings	75@1.25
Lemons ch	2.00@2.50
Lemons fy	2.50@3.25
Limes	6.50@7.00

Fresh Fruits.

Bellflowers	75@1.00
Bellflowers No 2	50@75
Spitzenberg	1.25@2.00
Newton Pippins	1.15@1.40
Ben Davis	1.25@1.50
Winter Nellis	1.00@1.50
Persimmons	75@1.00

Dried Fruits.

Prunes 4-size basis	2¾@3½
Santa Clara	3¼@3¾

½c premium for larger sizes

Apricots per lb; Choice 8½; fancy 7@10.

Peaches—Choice	4; fancy 6½
Apples, evap	5@6½
Pears	4@8
Figs	2@4
Nectarines	5@6

RAISINS—1908 crop, f. o. b.: Clusters and Layers, 20-lb bxs—Imperial Clusters, 6-crown, $2; Dehesa Clusters, 5-crown, $1.75; Fancy Clusters, 4-crown, $1.40; London Layers, 3-crown, $1.15; do, 2-crown, $1.05. Seeded, 25-lb bxs—Fancy bulk per lb, 5¾c; Choice bulk, 5c. Loose Muscatels, 50-lb bxs—Standard, 4-crown, 4c; do, 3-crown, 3¼c; do, 2-crown, 2¾c; Seedless, 3½c. Seedless Sultanas—Unbleached, 4¼c. Thompson Seedless—Unbleached, 4¾c. Dried Grapes, 2½c.

Nuts.

Walnuts S S No 1 new crop	8@12½
Walnuts No 2	6
No 1 Standard	8½
No 2 Standard	4½@5
Almonds Nonp	11½
Almonds IXL	10½@11
Ne Plus Ultra	9½
Drakes	8½@9
Chestnuts	7@9
Peanuts Cal	5½@6

Beans Dried.

Limas	3.80@3.90
Pink	2.40@2.60
Small white	4.75@5.25
Large white	3.80@4.15
Black eyes	2.80@3.00
Red Kidneys	3.50@3.60
Garvanzas	3.00@4.00
Bayo	3.10@3.25
Horse beans	2.00@2.25

Hops.

Hops new crop	6@10

Honey.

White comb	12@14
Light Amber	8@11
Extracted W W	6½@7½
Extracted light amber	5½@6
Beeswax No 1 per lb	28@30
Beeswax No 2 per lb	23@25

Hay.

Choice wheat hay	21.00@23.50
Good wheat hay	19.00@21.00
Other grades same	17.00@18.00
Wheat and oat	16.00@21.50
Tame oat	16.00@21.00
Wild oat	15.00@17.00
Stock hay	12.00@14.00
Alfalfa	16.00@19.00
Straw per bale	50@85

Grains.

Wheat No 1	1.75@1.80
Barley	1.40@1.42½
Corn large yellow	1.60@1.65
Oats, white	1.85@1.90
Oats gray	1.80@1.90
Rye new crop	1.75@1.85
Corn Egyptain	1.60@1.65

Feed Stuff.

Bran per ton	28.50@30.00
Feed cornmeal per ton	39.50@40.50
Cracked corn per ton	40.00@41.00
Rolled barley per ton	28.50@30.00
Oil cake meal per ton	38.50@40.00
Cocoanut cake per ton	26.00@27.00
Middlings	32.00@35.00
Shorts	32.50@33.50

Citrus Market

LOS ANGELES, Feb. 10, 1909.

Heavy shipments of oranges striking an Eastern blizzard made a bad combination and indifferent prices are prevailing at this writing. The recent storm in California will retard shipments and thus correct the glut. Weather conditions in the East also promise well so that normal shipments will soon be resumed it is hoped. Florida has cleaned up practically all her oranges.

Lemons are facing the biggest importation in years. Lemons now in market and afloat, shipped since the Sicily disaster, make the lemon market look rather serious. Fortunately the trade has learned the superiority of the California lemon and will pay more for it than the imported. This with freight from the Eastern seaboard to the Middle West points enables some lemons to be disposed of without great loss.

Shipments.

Shipments of oranges since November 1, 1909, to date aggregate 5,137 cars; of lemons 1,169 or a total of 6,306 citrus fruits.

NEW YORK, Feb. 9.—Fifteen cars navels and five cars lemons sold. The market is slightly lower in spots. There is a very active demand for navels. Lemons easier and lower. Cloudy, threatening.

NAVELS—	Average.
El Toreador San Marino G A	2.30
Champion A C Denman Sons	2.70
Gold Buckle RH Ft Ex	2.70
Lochinvar do	2.55
Victoria AH Ft Ex	3.00
Lincoln do	2.60
Victoria do	2.60
Iris DM Ft Ex	2.70
Goddess SA Ft Ex	2.45
Blue Globe Riv Ft Ex	3.10
Red Globe do	2.75
Jameson QC Ft Ex	2.50
Just Rite do	2.30
Arab Flower, redlands Or G A	2.70
Golden Gate do	2.45
San Rafael N W Bailey	2.50
San Pasqual do	2.50
Duarte	2.70
Uplands	2.45
Honest Pack Randolph Ft Co	2.20
Orchard National Or Co	3.00
Standard do	2.45
LEMONS—	
Southland Beauties QC Ft Ex	2.95
Just Rite do	2.65
Arab SA Ft Ex	2.70
Homer QC Ft Ex	3.00
Camel do	2.60
Flower Or Growers Ft Co	2.70
Naralimo	2.65
Maine Sparr Ft Co	2.45
TANGERINES—Halves	
Uplander	1.70
Orchard National Or Co	1.80
Squirrel AH Ft Ex	1.75

NEW YORK, Feb. 8.—Fourteen cars navels, five mixed cars and five cars lemons sold. The market is very firm on navels. There is a very good demand for lemons. Weather clear and favorable.

NAVELS—	Average.
Orchard imp orch run Nat'l Or Co	3.10
Standard imp standard do	2.55
W Highland or run Cleghorn Bros	2.60
Stock Label do	2.30
Old Mission fancy C C Chapman	2.85
Old Mission choice do	2.60
Golden Eagle standard do	2.20
Rialto Girl fancy Growers' Ft Co	2.50
Rialto Girl choice do	3.35
Cal Sunshine fy Or Gr Cash Assn	2.60
Colonel ex ch do	2.40
Golden Flower ev fy Red OG Assn	2.75
Golden Gate ex ch Red Gr Or As	2.35
Redlands' Best ex fy Mut Or Dist	2.75
Young America ch P & McKevitt	2.25
Titus Ranch	2.60
El Toreador standard San Marino	2.25
Pioneer fancy Pioneer Ft Co	2.25

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

Cream Separators, all sizes, all prices. O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

Stock Label	2.10
Victoria Arlington Heights Ft Ex	2.70
Lochinvar do	2.60
Iris Duarte-Monrovia Ft Ex	2.80
Sweetheart Highgrove Ft Assn	2.60
Pointer ACG Ft Ex	2.50
Jameson Queen Colony Ft Ex	2.50
Just Rite do	2.25
Gavilan Riverside Ft Ex	2.50
Tulip Tulare County Citrus Ft Ex	2.00
Signal ex fancy Stewart Ft Co	2.60
Solano orch run do	2.40
Sunset Brand standard	2.30
RUBY BLOODS (Half Boxes)—	
Southland Beauties	1.60
Just Rite Queen Colony Ft Ex	1.30
Redlands' Best	1.60
TANGERINES (Half Boxes)—	
Orchard orch run National Or Co	1.70
Stag ACG Ft Ex	1.70
LEMONS—	
Independent fancy Growers' Ft Co	3.10
Independent choice Growers' Ft Co	2.70
Pioneer Fancy Pioner Ft oC	2.10
Chess Queent fy Ely Gilmore Ft Co	3.00
Bishop choice do	2.75
Rock ex ch do	2.35
Vista do	2.20
Loma Vista fancy A P Nelson	2.45
Pride of Corona Queen Col'y Ft Ex	3.20
Corona Beauty do	2.80
Excellent Santa Paula C Ft Assn	2.80
Just Rite Queen Colony Ft Ex	2.25
Pet San Antonio Ft Ex	2.90
Greyhound do	2.65

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Oil well casing prices and sizes: 2-inch. O. D. 7 cents per foot; 2-inch, I. D. 9 cents per foot; 3-inch, 13½ cents per foot; 3¼-inch, 15 cents per foot; 3½-inch, 17 cents per foot; 4-inch, 20 cents per foot. All pipe is carefully inspected, new couplings and new thread are put on every piece, every joint is guaranteed to be first class, serviceable pipe. Mail orders promptly filled. To reach the Adams Pipe Works in Los Angeles, take car marked Pacific Boulevard, starting east on Seventh street from Broadway. Ask conductor to let you off at Bay street and go east half a block. Phones, F1917. Broadway 1264.

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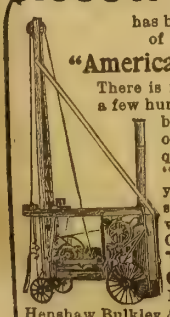

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George E. Spencer

Box 941 **Compton, Cal.**

CLEVELAND, Feb. 8.—Weather cool. Market is unchanged. Seven cars sold, twelve on track.

NAVELS—	Average.
Greyhound SA Ft Ex Claremont	2.00
Victor do	2.05
Carmencita Semi-Tropic F E Fuller	2.50
Colombo do	2.15
Royal Knight R-H Ft E Redlds	2.65
Braeside Riverside Ft Ex Riverside	2.15
Gavilan do	2.40
Pride of Cal do	2.25
Golden Flower ex fy Redl GOA	2.50
LEMONS—	
Whittier Semi-Tropic Ft Ex Whit.	2.50
Pico do	2.45
Squirrel, AH Ft Ex Pachappa Sta.	2.75
Palm Tree do	2.60
Commercial do	2.45

PITTSBURG, Feb. 8.—Ten cars sold, eight on track. Market is about 10c lower on navels and from 15c to 20c lower on lemons. Five cars Florida oranges sold, average $2.20. The market is higher on Floridas. Weather favorable.

NAVELS—	Average.
Orchard o r National O Co	2.70
Standard sd do	2.45
Naralimo	2.50
Preferred Stock	2.45
Canyon	2.45
Our Beauty Lamanda O & L Assn	1.85
A-One fy o r E Peycke Co	2.35
Climax e ch o r E Peckye Co	2.10
National e ch o r E Peycke Co	2.35
On Honor LGA Lemon Grove	2.45
Standard Growers do	2.20
Fiesta Riv Ft Ex Pachappa Sta.	2.40
Pond Lily do	2.20
Lochinvar RH Ft Ex E Highlds	2.55
Belt do	2.45

CINCINNATO, Feb. 8.—Weather cool. Market is steady. One car navels, one car lemons and four cars Florida oranges sold. Florida Brights, $2.05 to $2.25; Russets, $1.90 to $2.35.

NAVELS—	Average.
Choice Stock Label ST Ft Ex Ross.	2.10
GRAPEFRUIT—	
Extro Choice ST Ft Ex Rossmoyne	1.85
LEMONS—	
Liberty Escondido FGA Escond	2.50
Foxaway do	2.35

BOSTON, Feb. 8.—Nineteen cars sold, fourteen on track. The weather is favorable. The market remains unchanged.

NAVELS—	Average.
Champion fy A C Denman & Sons	2.70
Champion ch do	2.60
Mutual e fy Redlands MO Co	2.50
Independent fy Growers' Ft Co	2.55
Independent ch do	2.30
Blue Mountain fy P & McKevitt	2.35
Golden Flower e fy Red O G A	2.05
Monogram	1.65
Marguerite e ch Cal Citrus Union	1.70
Anemone e ch do	1.95
Lincoln AH Ft Ex Casa Blanca	2.15
Golden Leaf RH Ft Ex Redlands	2.10
Victoria AH Ft Ev Casa Blanca	2.65
Golden Orange do	2.60
Lincoln do	2.30
Gold Buckle RH Ft Ex E Highlds	2.80
Lochinvar do	2.60
Crocus SB Ft Ex Yerkes Spur	2.60
Canna do	2.70
Laurel QC Ft Ex Corona	2.65
Lily do	2.35
George Washingto Riv Ft E CB	2.60
Martha Washington do	2.45
RUBY BLOODS—	
Laurel (half boxes) QC Ft Ex	1.75
LEMONS—	
Pet SA Ft Ex San Dimas	2.90
Naralimo	2.10
Highland	2.05
Partridge e ch Cal Citrus Union	1.80
Old Baldy do	1.35

PHILADELPHIA, Feb. 8.—Three cars navels and one car lemons sold. Weather cool, fair. Market is stronger. Four cars on track. Sixteen cars Florida oranges sold. Market higher.

NAVELS—	Average.
Quail OK Ft Ex	2.87
Coyote do	2.50
Goddess SA Ft Ex Pomona	2.34
Puritan do	2.90
LEMONS	
Sweetheart Assd F Ex Highgrove	2.89
Eagle do	2.68

ST. LOUIS, Feb. 8.—Raining. Market weak on account of the condition of the fruit. Ten cars sold, nine cars navels and two cars lemons on track.

VETERINARY.

(Continued from Page 170.

paint the inside of the wound with tincture of iodine. If this is done it should heal quickly, but the end of the ear will always lop over and look badly.

DR. WHITTLESEY'S VETERINARY REMEDIES.

These are not ordinary mixtures but are from well tried formulas, used in an extensive practice in Southern California for nearly a quarter of a century. Dr. Whittlesey's Sulphur Arsenical Salve for deep fistulous or ordinary chronic, indolent sores such as, "Poll Evil," "Fistulas," "Quitters," "Thrush," "Scratches," "Warts," "Collar sores" or "Sit-fasts." $1.00 per package postpaid. Printed directions. Dr. Whittlesey's Antiseptic Healing Powder. Forms a coating over raw surfaces, excludes air, flies and floating germs. Makes a cheap and convenient dressing for the many sores that occur to stock on the ranch. $1 full pound can postpaid.

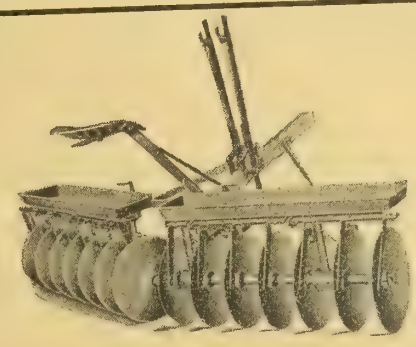
DR. R. T. WHITTLESEY.
Veterinary Hospital, 714 East Seventh St., Los Angeles, Cal.

Special Prices

Today we have on hand a few of the latest models of the "Old Trusty" Incubator, just as long as they last you can have them at the lowest prices ever made by any Incubator company in the West. We wish to get our money out of them quickly, we will hold any machine you wish to select if you send a $2 deposit, these machines will not last but a few days at these prices. Now is the time to BUY and save many dollars while you can. This ad may not appear again. If you do not have the catalogue, 148 pages, send for it. We pay R. R. freight in Cal. 120 Egg Size, $10.90, 165 Egg Size $12.90, 240 Egg Size $15.90. These machines are all complete with all attachments ready to run.

E. E. McClanahan

112 E. Eighth St., Los Angeles, Cal.



Racine-Sattley Co's. New Govenor Disc Harrow

We sell this disc harrow under a very strong Guarantee. That it will do as good or better work than any disc harrow on the market, or your money back.

Of what good is a disc harrow unless it will penetrate? We spend thousands of dollars in grinding and polishing our harrow discs, and in putting them through several operations of special preparation, which do not enter into the preparing of the discs for other makes of disc harrows. Thats why the New Governor harrows are held as the standard of quality by most ranchers today.

10-18 inch discs—5 foot cut—complete with pole and 3 horse equalizer, $36.00.
12-20 inch discs—6 foot cut—complete with pole and 3 horse equalizer, $40.00.
16-20 inch discs—8 foot cut—complete with pole and 4 horse equalizer, $46.00.

Order at once. If we receive your order before February 20th, we will pay the freight charges to any point within 75 miles of Los Angeles. Address:

SOUTHWEST SUPPLY CO.

127 South Los Angeles Street, Los Angeles, California

Exclusive Agents for the Celebrated Racine-Sattley Line.

FOR SALE--SECOND HAND MACHINERY

Are you looking for bargains in any kind of machinery? We have goods that are good and prices that are right.

BOILERS—Vertical boilers from 2 H. P. up to 25 H. P.; return tubular boilers from 15 H. P. up to 125 H. P.; firebox boilers from 12 H. P. up to 40-45 H. P. Every one of these boilers has been tested with cold water pressure, and they are all complete.

ENGINES—STEAM—Steam engines from 2 H. P. up to 250 H. P. These engines are all fitted up and ready to run.

ENGINES—GAS AND DISTILLATE—One 6 H. P. horizontal, one 8 H. P. horizontal, one 8 H. P. vertical, and up to 50 H. P. All complete with battery, tanks, etc.

DRILLING RIGS—Two water well drilling rigs, with or without tools; one hydraulic water well rig, with or without tools; two light standard oil well drilling rigs, 4-inch and 4½-inch irons; two heavy standard oil well drilling rigs, 5-inch shaft.

PIPE—10,000 feet of pipe and oil well casing, all sizes.

MISCELLANEOUS—Two 2-ton chain blocks, two small water heaters; one 3 H. P. motor; 100 wood and iron blocks, all sizes, one sheave to three sheave; 12 pairs of new chain tongs; 8 screw jacks; 5 tons of pipe and casing fittings; one No. 2 vertical centrifugal pump; one No. 4 horizontal centrifugal pump.

We guarantee all our goods to be as represented, OR YOUR MONEY BACK. All orders promptly filled. Write or telegraph us for prices.

A. CANNADY & CO., 691 North Main St. A 4614. Main 8803

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This is a cut of the leading hand power Cream Separator. It is the Empire, the quality line! We have fourteen styles and sizes to choose from; we can sell you a machine at almost any price you may wish. Our prices are the lowest for first-class, standard goods. The Empire is pronounced the lightest running machine made; its skimming qualities are unsurpassed. A catalogue for the asking!

Empire Separator Co. Ltd.

No. 85 North Sixth Street, Portland, Oregon

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Fruit Frees, Grape Vines, Shade and Ornamental Trees and Plants.

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Fresno, California.

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15,000 Trees, Grafted and Seedlings

Grafted trees grafted on Northern black and California soft-shell roots. Seedlings grown from selected nuts from grafted trees selected by myself. Place your orders early to avoid the rush and get the best trees. Price 15c and up. Took first premium on nuts and trees this year. Some lemon trees still unsold. Fine lot of Kadota Fig trees.

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See our exhibit at "Made in Southern California" Exposition, Exposition Bldg., 316-318-320 So. Main St., Los Angeles

Western Gas Engine Co.

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The New Pomona Deep Well Pump

A reliable pump built by a responsible Company.
Being built with machine cut gearing and adjustable bearings, they run as smooth and noiseless as a watch.
You cannot afford to buy a Pump before investigating ours.
Send for Catalogue or what is better—COME TO POMONA.

Pomona Manufacturing Co.

Pomona, Cal.

THE

Latest Deep Well Turbine Pump

Guaranteed to deliver from 100 gallons per minute upwards, depending on the diameter and capacity of well, from a depth of 50 to 300 feet below the surface. Can be either belt driven or direct connected to electric motor as occasion requires.

Write for Catalogue 46B.

A deep well pump that has no valves or plungers to wear or get out of order, no gears, consequently no noise or breaking of teeth.

Compact, durable, always primed and ready to operate, constant flow, hence increased capacity of well.

This type of pump is fast taking the place of Vertical Steam, Deep well Plunger and Propeller Pumps.

Byron Jackson Iron Works

Main Office and Works:
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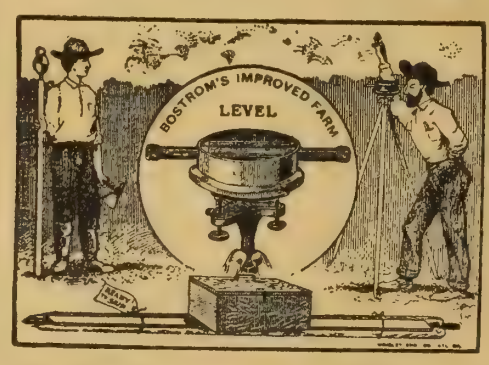

BOSTROM'S IMPROVED FARM LEVEL

Used for irrigation and drainage work. Cheapest and best level yet invented for farm use. Has the latest patented improvements in simplicity and usefulness. Can be operated by any one. Price including telescope tripod and target rod $15.00.

PALACE HARDWARE COMPANY
581 Market Street, San Francisco.

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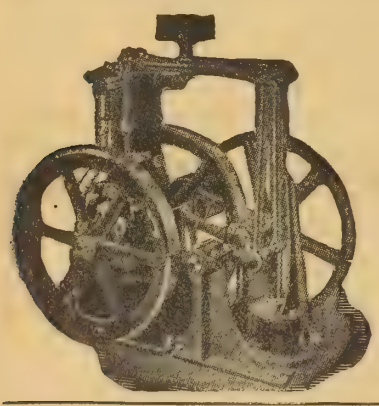

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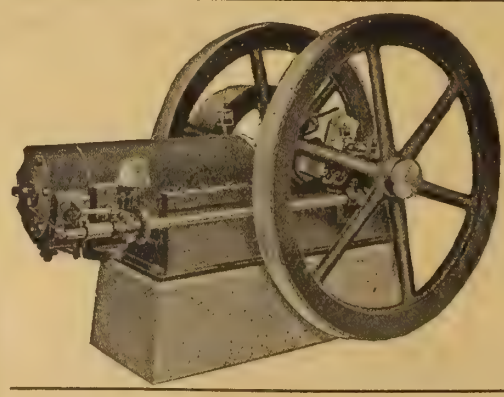
Just the thing to run the feed cutter, the pump, the churn, the grinder, or anything on the ranch. It's well named

The Little Wonder

Write or call on

Wm. Gregory
602 No. Main St. Los Angeles, Cal.



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Save money by purchasing a **Hercules** during the month of February, for cash. Strictly high-grade, latest improvements, vertical or horizontal. Great big discount **during February only.** Get our circulars and prices.

The Hercules Gas Engine Works
351 Market St., San Francisco

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Made from California Redwood or Selected Washington Douglas Fir

NATIONAL WOOD PIPE CO.

Stave Pipe 2 inches to 10 feet Diameter up to 400 feet Head

SAN FRANCISCO OFFICE. 318 MARKET ST.
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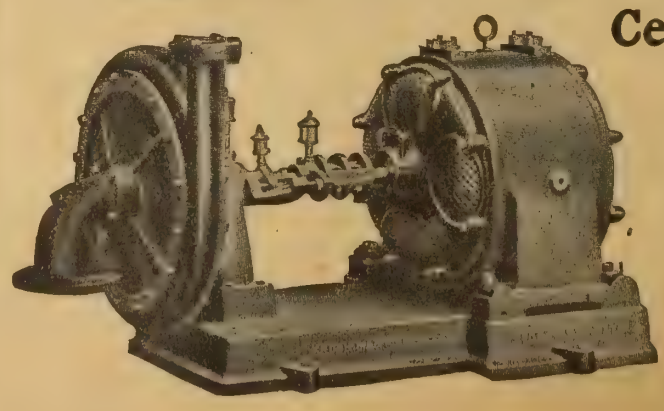
OLYMPIA, WASH. SALT LAKE CITY, UTAH

Prices, specifications, hydraulic data, and general information furnished upon request.



Centrifugal Pumps

For high or low heads

Direct Connected or Belt Driven

Highest obtainable efficiency

Krogh Man'f'g. Co.

127 to 123 Beal Street
SAN FRANCISCO, CAL.

Send for New Catalogue No. 50 just issued.

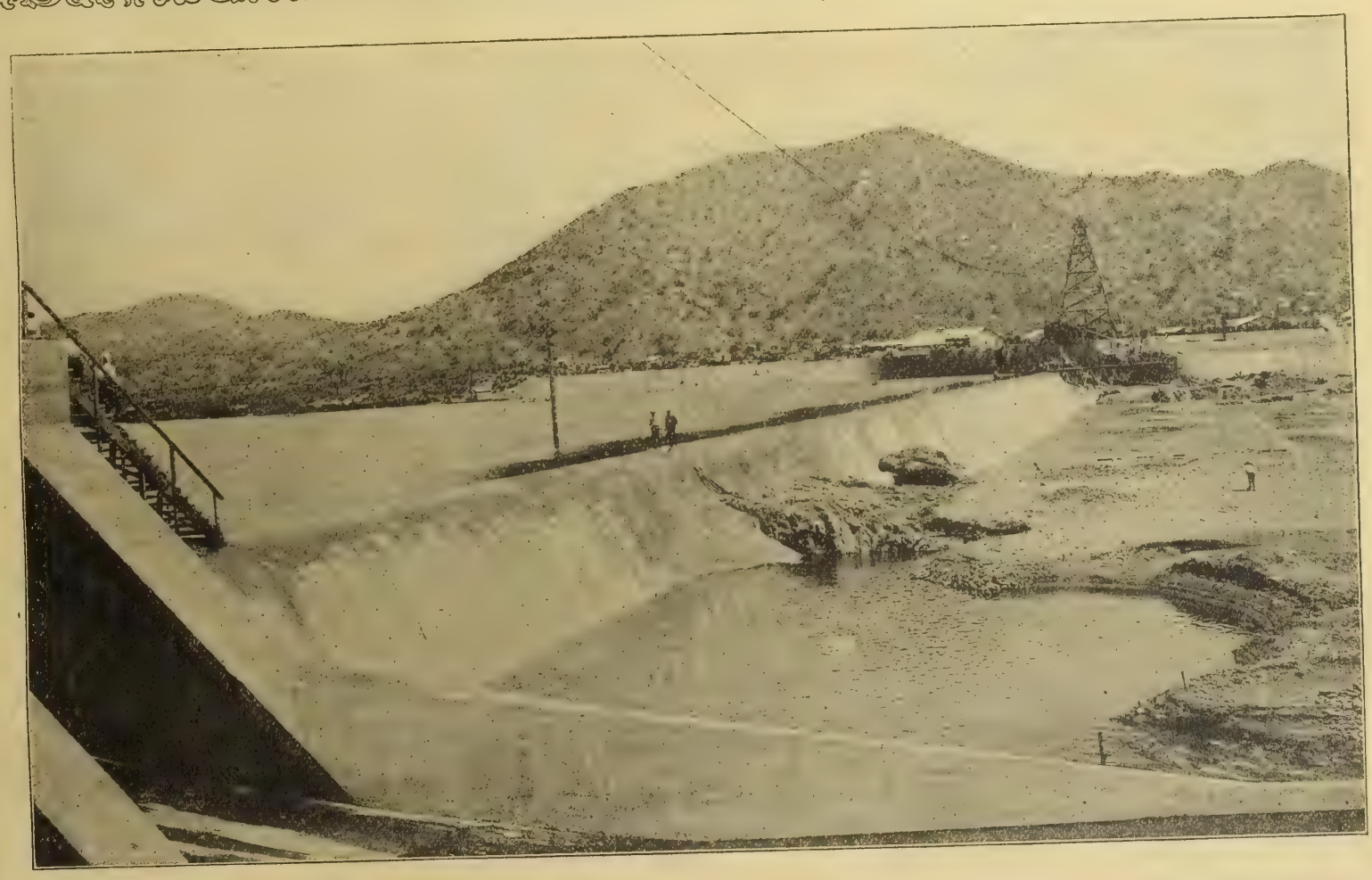
California Cultivator

Published Weekly — One Dollar a Year

Los Angeles — February 18, 1909 — San Francisco

Granite Reef Diversion Dam

A Salt River Valley Improvement in Connection With the Great National Irrigation System. This is for Diversion of Waters Which Will Be Stored by the Great Roosevelt Dam



THOUGH the Tonto Basin water storage dam is of prime importance, almost as useful in its own way is the concrete diversion dam lately completed by the Reclamation Service at Granite Reef, about twenty-five miles east of Phoenix, below the mouth of the Verde river.

This new dam is 1440 feet long upon its crest, its greatest height being 26 feet. All, save a few well-protected feet in the center, is set firmly upon bed rock. At either end are immense diversion gates. Over the dam will go any floods that may come down the Verde River in the years that must elapse before that erratic stream, like its greater neighbor, the Salt, shall have been dammed for storage.

The structure at the Reef cost about $500,000, a sum assessed against the land to be benefited, service being given to main distributing canals on both the north and south sides of the valley. On the north side, by payment of $314,000, the Government already has been given possession of the canals and works of the Arizona Water Company. The uppermost canal of this system, the Arizona, is being enlarged by dredging to a carrying capacity of 80,000 miner's inches, a veritable river's flow of over 700,000 gallons a minute. The main canal almost skirts the mountains that fringe the valley on the north, its terminus on the plain at the Agua Fria river, twenty miles northwest of Phoenix and forty miles from the dam.

Ask the WIFE
SHE WASHES IT

TRADE Sharples MARK 29 Yrs

Washing the Sharples Dairy Tubular bowl. Only three pieces. The brush, the girl is using, cleans the inside in a moment. Easier washed, more durable than any other bowl.

Your wife knows the difference between washing one dish and washing **forty-two.**

Why not let **her** choose between the light, simple Sharples Dairy Tubular Cream Separator bowl—with just one tiny, plain piece inside, as shown in the upper left hand picture—and the heavy, complicated "disc" or "bucket bowls" shown in the lower right hand picture?

Show her these pictures, made from actual photographs. Ask her which cream separator bowl she would rather wash? She'll put her finger on the Tubular every time and thank you for saving her needless labor.

You will appreciate the many exclusive advantages of the 1909 Tubular "A" Cream Separator.

You will like the low supply can, single frictionless ball bearing supporting the bowl, entirely enclosed self-oiling gears and ball bearing, the plumb bob attached to the frame for quickly leveling the machine and keeping it level, the single piece frame and the great simplicity of the entire machine.

Put your heads together and talk this over. You'll agree that the 1909 Tubular "A" is the finest cream separator money can buy.

She Will NOT Want These

What woman would choose to wash any of these heavy complicated "bucket bowls" when she can have a simple Dairy Tubular instead? What man would expect any of these complicated "bucket bowls" to be as durable as the simple Dairy Tubular?"

This is the Sharples 1909 Dairy Tubular "A." So simple and perfect in construction, that the medium sizes can be turned by one who is seated. Self oiling enclosed gears. Low, steady supply can. Plumb bob attached for quickly leveling the machine.

Tubulars Are Entirely Different From all Others

Built on 29 years' experience, in the world's greatest cream separator factory. 1908 sales way ahead of 1907—way out of sight of any other make, if not all others combined. Write for complete catalog No. 260.

The Sharples Separator Co.

Toronto, Can. WEST CHESTER, PA. Portland, Ore.
Winnipeg, Can. Chicago, Ill. San Francisco, Cal.

Special Prices

Today we have on hand a few of the latest models of the "Old Trusty" Incubator, just as long as they last you can have them at the lowest prices ever made by any Incubator company in the West. We wish to get our money out of them quickly, we will hold any machine you wish to select if you send a $2 deposit, these machines will not last but a few days at these prices. Now is the time to BUY and save many dollars while you can. This ad may not appear again. If you do not have the catalogue, 148 pages, send for it. We pay R. R. freight in Cal. 120 Egg Size, $10.90, 165 Egg Size $12.90, 240 Egg Size $15.90. These machines are all complete with all attachments ready to run.

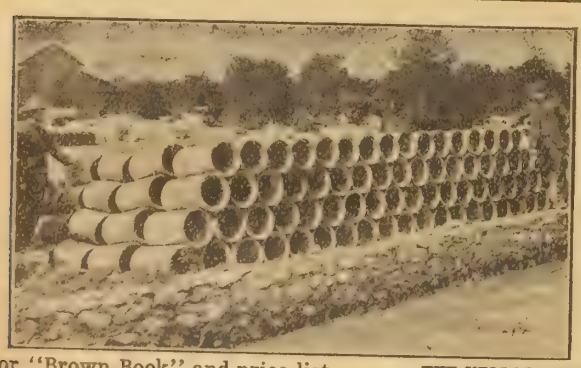
E. E. McClanahan
112 E. Eighth St., Los Angeles, Cal.

West Coast Seed Co.

Don't plant poor seeds—get the best.
Send for free catalogue and price list.
Also of the best

POULTRY SUPPLIES and INCUBATORS

115 W. 7th Street, Los Angeles



From photograph showing amount of

Ten-Inch Pipe

made by four men from 10 bbls. of cement in 9 hours—280 two-foot joints, or 560 feet. This pipe was made with the

"K T" Moulds

An equal amount can not be made with any other tools in the same period of time. Write for "Brown Book" and price list.

THE KELLAR-THOMASON MFG. CO., Covina, Cal.

The Best Keeper *More Money to the Acre*

Australian Brown

300 lbs Australian Brown Onion Seed, (true).
100 lbs Danvers.
1000 Superlative Raspberries, 2 year old.
27,000 Mammoth Blackberries, 6 months old.
17,000 Burbank's Phenomenals, 6 months old.
11,000 Himalaya Giant, 6 months old.
1,200 Black Currants, Boskoop Giant, 2 years old.
800 Gooseberries, Golden Drops, 2 years old.
22,000 Texas Evergreens, 1 year old.
13,000 Red Logans, 6 months old.
Flats of other Plants, Bulbs and Trees all ready to ship. Send for 1909 price list.
Everything Guaranteed to reach you in A No. 1 shape.

A. Mitting
Lock Box 380 Santa Cruz, California

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California Cultivator

Vol. XXXII—No. 7 Los Angeles, California, Thursday, February 18, 1909 Subscription $1 a Year

President Roosevelt on Country Life

Extracts from the President's Message to Congress When Transmitting the Report of the Country Life Commission

"JUDGING by thirty public hearings, to which farmers and farmers' wives from forty states and territories came, and from 120,000 answers to printed questions sent out by the department of agriculture, the commission finds that the general level of country life is high compared with any preceding time or with any other land. If it has in recent years slipped down in some places, it has risen in more places. Its progress has been general, if not uniform.

Discontent in Country.

"Yet farming does not yield either the profit or the satisfaction that it ought to yield and may be made to yield. There is discontent in the country, and in places discouragement. Farmers as a class do not magnify their calling, and the movement to the towns, though, I am happy to say, less than formerly, is still strong.

"It would be idle to assert that life on the farm occupies as good a position in dignity, desirability and business results as the farmers might easily give it if they chose. One of the chief difficulties is the failure of country life, as it exists at present, to satisfy the higher social and intellectual aspirations of country people. Whether the constant draining away of so much of the best elements in the rural populations into the towns is due chiefly to this cause, or to the superior business opportunities of city life, may be open to question. But no one at all familiar with farm life throughout the United States can fail to recognize the necessity for building up the life of the farm upon its social as well as upon its productive side.

"From all that has been done and learned, three great general and immediate needs of country life stand out:

(Continued on Page 207.)

Hot Beds and Cold Frames

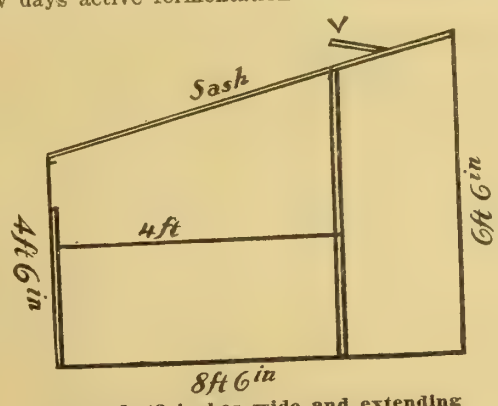
Valuable Information on Construction by Q. A. Lobingier of San Gabriel

A cold frame is simply a frame having sash, but no other means of heating. The function of a cold frame is to ward off cold winds, and in the spring to increase the feeble heat of the slanting sunbeams, and thus foster plant growth. The construction of a cold frame is very simple. The back board is usually 12 inches and the front 8 inches wide. The two are connected by a tapered board 12 inches wide at one end and 8 inches at the other. Sash are usually made about 3x6 feet. Many use 6x8 or 8x10 glass, but I have always prefered 10x12 putting three rows to the sash and making the glass 12 inches wide in each row. This makes a sash a little wider than three feet but that is no disadvantage as the frame can be made to suit.

Fill the frame with mellow soil to within 6 inches of the top in front and 8 or 9 inches at the back; make shallow drills three or four inches apart across the face of the soil in the frame, and in these sow the seeds, covering them thinly and tamping them lightly; then water moderately with a fine sprinkler. Put on the sash and keep all snug until the seedlings appear, when the sashes should be tilted up during the day to admit air. This airing must not be neglected for a single day or your plants will become drawn and weak. As the seedlings get strength the sash can be removed both day and night in fine weather but replace as a protection against cold or wet weather. As soon as the plants are large enough transplant into the open garden. In sowing seeds in a cold frame be careful to plant such as are of similar strength and time of germinating. I have often put divisions in the frame so that the different kinds could be treated according to their needs. Another way is to make the bottom of the frame perfectly level and then sow the seeds in flats. Those that germinate first can be given the most sun and air.

Hotbed.

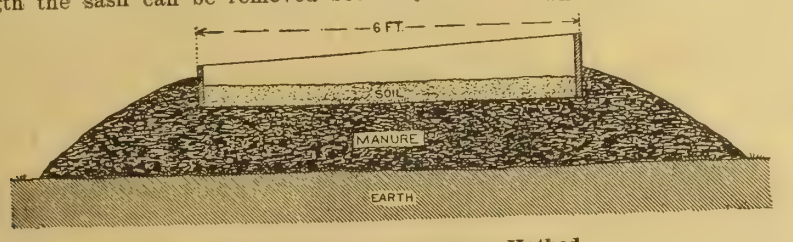
A hotbed is simply a cold frame placed upon a quantity of fermenting manure. In the preparation of the manure it is best to collect the requisite amount from the horse stable and make it into one compact heap, watering it if dry. In a few days active fermentation will be in progress,



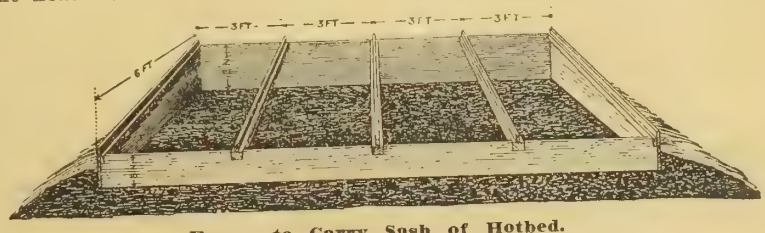
A board, 12 inches wide and extending the entire length, made in sections of 10 feet and hinged, is used as a ventilator. Shown open at V.

when the heap should be turned, watering again if necessary and shaking out the lumps. The aim is to induce an active and uniform fermentation of the whole mass, and to have it continue for some time after the soil is placed upon it.

Select a place where water will not stand and when the manure is in violent heat the second time, make it into a regular uniform layer eight or nine feet wide by whatever length is necessary, with a depth of twelve to fifteen inches. Tramp the manure firmly and evenly. Place the frame on it. Then put three or four inches of good soil uniformly over the surface. Some manure or soil can be placed against the frame on the outside to the height of four or five inches which will aid in retaining the heat. Put on the sash and keep tight for three or four days. Plunge a thermometer into the soil and when it recedes to 90 degrees it will be safe to sow the seeds. Some gardeners sow when a thermometer placed in the hotbed—not in the soil—shows 75 degrees.



Cross-section of a Temporary Hotbed.



Frame to Carry Sash of Hotbed.

Beginners are impatient and often fail by sowing in a heat that is too violent. The temperature should not be allowed to go above 70 degrees in the daytime nor below 50 at night, after the seeds are sown. When the hotbed is new it is well to always keep a chink of ventilation on to allow the discharge of steam or ammonia. Otherwise the seedlings will damp off. Beginners will find it safer in the management of a hotbed to place but about two inches of sand or soil over the manure and sow all seeds in flats or pots or earthen pans. Always raise the sash for ventilation at the high side of the frame. The hardening off and transplanting should be followed just as in the management of the cold frame.

Gardeners who are regularly in the work will find a leanto propagating house very much more satisfactory than the hotbed. I have one 30 feet long on the south side of my dwelling that I find indispensable. The sketch shows it so plainly that explanation is hardly necessary. A galvanized iron pan 2x3 feet and three inches deep serves for rooting cuttings. A hole two inches less in size than the area of the pan was cut from the stage and the pan set over it and the pan filled with clean sand. Four inches underneath the pan a sheet of iron nearly as large as the pan was suspended and beneath this, in the center, I use a small oil heater, when I want bottom heat. About four feet is partitioned off with burlap to partially confine the heat and burlap hung in front next to the walk. With this simple, inexpensive arrangement I can start the most tender seeds or root cuttings in great variety. I found the prices asked for making sash at the planing mill so high that I adopted the plan of having the mill work out the sash bars in lengths of say 14 feet and having them put together with 10 and 20 penny finishing nails. Any good carpenter can put them together in that way and make a stronger job than by the methods the mills use. Be careful to select soft redwood that will not warp or split.—Q. A. L.

POTASH

The largest, juiciest, sweetest
ORANGES

are those that have been most scientifically fertilized. No other fruit makes more exacting demands on the soil. The use of **Potash** in the fertilizer gives extra size, firmness of flesh and most delicious flavor—fruit which repays the cost of the Potash many times over in better market prices.

Potash is Profit

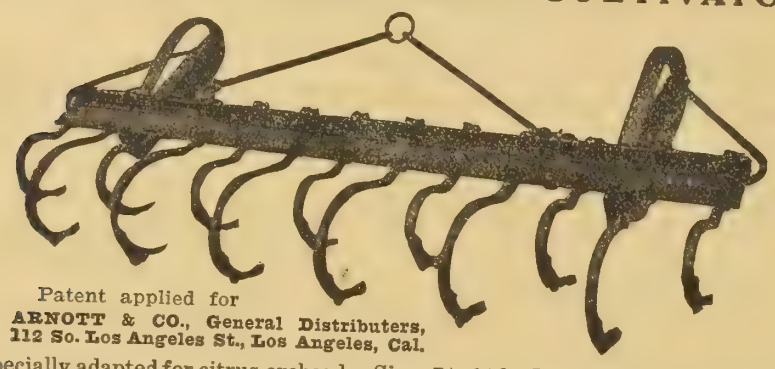
and should be used for the largest profit at the rate of 20 lbs. **Sulphate of Potash** in each 100 lbs. of fertilizer.

You should read our free booklet, "**Orange Culture**," which contains information indispensable to every orange grower.

German Kali Works, 93 Nassau St., New York
ATLANTA, GA.—Candler Bldg. CHICAGO—Monadnock Blk.

Meyer, Wilson & Co., San Francisco, Cal., are Sole Agents for the Pacific Coast

WILLIAMS' GOOSE-NECK CULTIVATOR



Patent applied for
ARNOTT & CO., General Distributers, 112 So. Los Angeles St., Los Angeles, Cal.

Especially adapted for citrus orchards. Sizes 7 to 14 ft. Lightest draft. Write today

WILLIAMS & SON, Mfrs., Orange, California

Save Time—With the Brewster Picking Sack—Save Fruit

A new method sack—invented and perfected by lifelong growers. Eminent orchardists pronounce it perfect. Those who have tried it say they would not be without it. Actual tests show that a man can pick twenty-five per cent more fruit with it and with greater ease.

Sack forms semi-circle about picker's body—is supported by straps over both shoulders and held tight by belt around body. The picker can thus work with ease either on ground or ladder. When full, it does not extend below the hips.

A great feature of the Brewster Sack is the patent gate (see illustration) WHICH PRACTICALLY ELIMINATES BRUISING. Simply unfasten a hook—the gate drops—and the fruit can be quickly but very gently poured out.

The sack holds as much fruit as the old style sack.

Made in two grades.

Regular picking sack grade, sent express prepaid for $1.50.

Special extra quality—that will outlast two ordinary picking sacks—express prepaid $1.75.

Sierra Madre Sack Co., Sierra Madre, Cal.

We want reliable men in every locality to demonstrate this sack and act as our agents.

The Roessler & Hasslacher Chemical Co.

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ARIZONA CITRUS SECTIONS.

"ONE gets a somewhat broader view in visiting other sections, and it is a liberal education as well. My trip to Arizona certainly gave me a new insight into the resources and development of that wonderful region and I came home with an added respect for the enterprise and public spirit of the people of our neighboring territory."

This is the statement of Horticultural Commissioner R. P. Cundiff, who returned last evening from a trip to Phoenix, where he went as guest of the Arizona Orange Growers' Association to look into the matter of insect pests in the groves of the Salt River Valley and to work for a national quarantine law.

"I found no scale in the groves about Phoenix," said Mr. Cundiff, "but there is, of course, constant danger of its being admitted, and a bill has already been introduced into the territorial legislature providing for the inspection of all nursery stock coming into the territory and the destruction of such pests as are found in the groves. It takes some time for scale to get a start and Arizona has been favored in this respect. It took fifteen or sixteen years for black scale to get acclimated in Riverside, and it would eventually find lodgment in Arizona if infected stock was admitted. I saw no red scale, though climatic conditions there would favor it. The growers are alive to the matter of keeping scale out and will work for a national quarantine law as well as state and county laws.

"The orange industry is now going through the transition stage that Riverside experienced in its early days. I saw one or two model groves that were well handled and had splendid crops. Culture methods have not been what they should have been and as a result the greater number of the groves are not producing the crops that they should. There has been practically no fertilization and in many instances there has been no cultivation of lands after irrigation for an entire season. Water is usually run in big heads every fortnight, the land being flooded during the twelve hour run. Methods are being improved and all seemed eager to learn.

"The navels grown in the Salt River valley are certainly very choice. There are only about 600 acres from which fruit is being picked, but 400 acres more are being planted out this season. Some of the Valencias I saw in one of the better groves were as fine as the Chapman product.

"It is estimated that with the private water plants now in operation with the two great federal irrigation enterprises nearly completed, the Tonto and Laguna dams, fully a million acres will be irrigated in Arizona. Of this amount 200,000 acres are in the Salt River valley, a little empire in itself. The region about Tempe has not yet gone into the government irrigation district, but private irrigators about Phoenix are converting their rights into government rights. I understand that the government water rights cost $30 an acre. Water at present is being furnished from Granite Reef dam, 27 miles north of Phoenix.

"The people of Phoenix are singularly progressive and loyal to their city. I didn't strike a single knocker on the trip, but every man appeared to be a booster for his community, a condition that will keep Phoenix well to the front. The roads about the city are generally good, but in street improvements the city is behind Riverside. The city has splendid educational facilities and good stores. I arrived at Phoenix Thursday and was taken for an auto drive over the country. I addressed a meeting of growers, at 2:30 and in the evening attended a banquet at Hotel Adams, which was attended by members of the Board of Trade, Commercial Club and Orange Growers' Association. Among those who spoke were Prof. R. H. Forbes, in charge of the Agricultural Department of the University of Arizona; Prof. J. E. Colt of the Agricultural Experiment Station, and B. J. Jones, formerly connected with an experiment station in Southern California.

At Yuma I had an opportunity to see the Laguna dam, which is to furnish water for an immense area of land, both in California and Arizona. The dam is 4980 feet long, constructed of rock and cement, and has harnessed the Colorado river very effectively. It is located 14 miles above Yuma and the main flow is on the California side, being syphoned across the river to the Arizona side. It is now figured that 10,000 acres of the Imperial valley lands can be irrigated from the Laguna dam. This is land that at present is not irrigated."—Riverside Press.

The Fertilization of Citrus Groves

From an address by J. H. Norton, who has charge of the fertilizer experiments at the Riverside Experiment Station.

THE subject of fertilizers is one that the wisest men feel timidity in discussing, because of the many conditions which surround the use of fertilizers having made the specific results and information gained rather limited. Our agricultural crops are so nearly alike that there is not a wide difference in the fertilizer requirements of the various crops. We mean by a fertilizer some specific substance that is beneficial to the crop production. Since all plants feed through the leaves and roots we must look to these two points for fertilizer effects. It is commonly recognized that a fertilizer is an element which the plant needs as a food. In other words, the plant's food supply is deficient in this particular element. But some recent investigations show that certain substances may have a neutralizing effect on an excessive food supply of a certain element and be a fertilizer by reason of its negative action. At any rate, under the subject of fertilizers may be considered nitrogen, phosphorus and potassium.

Nitrogen exists in an endless num-

ber of combinations. As the element of free nitrogen it exists as four-fifths of the atmosphere. It exists as the nitrate in nitrate of soda, nitrate of potash, etc. It exists as the ammonium salt in household ammonia, sulphate of ammonia, sal ammoniac, etc. Nitrogen is one of the elements in protein compounds or organic nitrogen. Free nitrogen is used by plants after certain bacteria convert it into nitric acid. These bacteria live best in combination, or as we say in symbiosis with leguminous plants, furnishing the legume nitric acid while the plant furnishes a home for the bacteria in the nodules on the roots of the plant.

In bulletin 180 of the New Jersey station we find that a ton of dry cow peas has gathered from the air 109 pounds of nitrogen and deposited it in the soil crop. But two succeeding millet crops on this soil after the peas have been plowed under show that this 109 pounds of nitrogen is only equivalent to 14.5 pounds of nitrogen from nitrate of soda applied as fertilizer, or 14.7 pounds of nitrogen from dried blood, or 9.3 pounds of nitrogen from sulphate of ammonia, or 5.9 pounds of nitrogen from stable manure.

That is to say, that the nitrogen accumulated by one ton of dry cow peas from the air into the soil is worth about $3 to follow the peas by millet, under New Jersey conditions. Nitrogen is the element in most explosives which gives them their explosive property. Nitrogen is very inert and hard to hold in a compound and for that reason there is great loss of nitrogen in nitrogenous fertilizers.

Any form of nitrogen is a fertilizer. Free or atmospheric nitrogen, as well as any form of organic nitrogen, is available to higher plants only after certain bacteria have converted the nitrogen into an available form. There are two available forms of nitrogen for use of the higher plants; ammonia salts and the nitrates. Only a very small amount of ammonia salts is taken up by the plants as plant food. The bulk of nitrogen taken up as plant food is in the nitrate form. Therefore we must give our trees nitrates or some form of nitrogen that we know will become a nitrate at the time and rate the tree will need it.

Phosphorus exists in almost an endless number of combinations. This element is quite different chemically from that of nitrogen and for that reason requires quite a different consideration as a fertilizer. The only form that phosphorus is important as a fertilizer is the form of a phosphate. As a phosphate it is always in combination with calcium or lime, there being four different combinations of the phosphate and lime. These four different forms differ in their solubility. The mono-calcium phosphate, or superphosphate, is soluble in water, the dicalcium phosphate or reverted phosphoric acid is soluble in ammonium citrate solution and both of these phosphates are commercially known as available phosphoric acid. The tricalcium phosphate, or apatite, is the insoluble or unavoidable phosphate and known commercially as unavailable or insoluble phosphoric acid. The tetracalcium phosphate is found in Thomas slag which is sold in this state as Thomas phosphate powder. This powder is more soluble than the tricalcium phosphate and less soluble than either of the other two. Then the order of their value would be as follows. Mono-calcium phosphate, dicalcium phosphate, tetracalcium phosphate, and tricalcium phosphate.

The nitrates are not fixed in the soil and for that reason they are subject to loss by leaching as well as loss by the denitrifying bacteria which are continually setting the nitrogen free to get back to the air. The phosphates are not lost by reason of volatile products being formed, nor are they appreciably lost by leaching.

The phosphates on being dissolved on or near the surface of the soil are carried down into the soil and fixed in what is known as an insoluble form. But this distribution of the phosphates, owing to their solubility, is far better done than we can do by mechanical means and for that reason the soluble phosphates are worth more as a fertilizer than the insoluble, even though they are converted into the insoluble form in the soil.

Potassium differs from the other two elements in forming but one class of compounds in commercial fertilizers, the potassium salts, all of which are soluble and available for plant growth. Potassium does not form volatile combinations and is fixed in the soil as phosphates are fixed. The transformation of nitrogen from its various forms into available plant food seems to be very well understood, but just what reactions take place with the other two elements is not so well known. It is undoubtedly true that phosphorus and potassium in the soil are acted upon by the products of organic decomposition and nitrification, including various organic acids, carbonic acid and nitric acid.

Nitrogen as a fertilizer is found in the forms of nitrates, ammonium salts, blood, tankage, bone and manures. Other forms of nitrogen may be in use in other parts of the country, such as cotton seed meal and indirectly alfalfa, etc. The value of these different forms of nitrogen from the two standpoints, that of the producer and that of the consumer, is an important question and will in the near future receive quite different attention from what it has received in the past.

The availability of the different forms of nitrogen is about as follows: Nitrates, 100; ammonium salts, 90; linseed and cotton seed meals, 75; blood, 70; bone and tankage, 60. The availability of manure seems to be one that is not as well worked out. The sources of phosphorus are that of phosphate rock, Thomas slag, bone, tankage and manure.

As to the amounts of fertilizers to use on citrus groves, would suggest for the sake of opening a discussion, that on trees in full bearing use one to one and a quarter pounds of nitrogen per tree per annum; potash, one or two pounds and phosphoric acid three to four pounds.

ORANGES IN CUBA.

"The orange crop this year is the largest ever produced in Cuba," said Max J. Bacher, United States Consul at Cienfuegos, Cuba. "A conservative estimate of the number of crates, I should say, is 500,000. It was only a few years ago that large quantities of oranges were shipped to Cuba from Florida and California, but for the last three years these shipments have decreased in size, and will probably stop entirely within a year. Americans control a large part of the orange industry in the island, and they have been responsible for the big increase in production. Orange cultivation, in fact, did not begin until eight or nine years ago, and is yet only in its infancy."—Fruitman's Guide.

TADPOLES AND FROGS.

The metamorphosis of toads and frogs is one of the most marvelous processes in nature and gives us a hint how other animals that now always live on land once came out of the water, for all land animals show evidence of having descended from water animals.

As the young tadpole grows the hind legs appear; a little later the front legs begin to grow also, but they cannot be seen, for they are under the skin; the tail begins to become smaller, and it is not lost bodily, but is absorbed probably by the action of the white blood corpuscles. The material of which the tail is composed is broken down by the white blood corpuscles and either carried into the body or allowed to pass into the circulation, and is probably used by the cells of the body as food, much as the camel's hump disappears during a fast. Since changing from water to land depends mainly upon a change in the method of breathing, this is of the greatest importance.

The true gills mentioned above are covered by a fold of the skin, called the operculum. Water is taken into the mouth and passed over the gills and out through a hole on the left side of the body called the spiracle. In the meantime there has grown out from the alimentary canal, just back of the gills, a pouch, having its own blood supply, which will later become the lung. As the tadpole approaches the time of metamorphosis the mouth broadens, the alimentary canal shortens, the legs grow larger, the tail disappears, and the frog is ready to come on to the land. The use of the lungs is not taken up suddenly, however, for the tadpoles have been practising at long breathing for some time previously. They come to the surface of the water and gulp in air, which they seem to need on account of the gradual disappearance of the gills.—Ohio Agricultural Bulletin.

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California Cultivator

ESTABLISHED 1889

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Contents

ONE CULTIVATOR 17 ems non AL F
GRANITE REEF DIVERSION DAM, Cover.
PRESIDENT ROOSEVELT ON COUNTRY LIFE, 179.
HOT BEADS AND COLD FRAMES, 179.
CITRUS.—Arizona Citrus Sections; Fertilization of Citrus Groves; Oranges in Cuba, 180, 181.
EDITORIAL.—Answers to Queries; Short Course; More Practical Education; Farm Life; Time Extended; Trees from Florida; Farmers Institute Train. 182.
AGRICULTURAL NOTES OF THE PACIFIC COAST.—Northern, Central, Southern, The Coast, 183.
DECIDUOUS.—Observations on Walnut Pruning, 184.
LIVE STOCK AND DAIRY.—Milk; Hog Killing; Dairymen Should Keep Books; Resting the Cow; Lime in Alfalfa Culture, 185, 186, 187, 188.
BEES.—The Drone Bee; New Bee Keeping Territory, 189.
GENERAL AGRICULTURE.—What Is Dry Farming; Planting Alfalfa on Salty Land, 190, 191.
SMALL FRUITS AND VEGETABLES.—Growing Cauliflower; Making a Small Garden; Cabbage Worms; Spud Pointers, 192.
ORNAMENTAL GARDEN.—Points on Beautifying Home Grounds; How to Make Hydrangeas Bloom, 193.
POULTRY.—Organize; The Chicken's Kettle; Preserving Eggs; Food for Laying Hens; Pigeons for Profit; Turkeys, Ducks and Geese; White Chinas; Hatching Turkeys; Brown Eggs and White, 194, 195, 196.
IRRIGATION AND FORESTRY.—Underground Waters of Southern California, 198.
QUERIES AND REPLIES.—Spineless Cactus; Feed for Cows; Scale on Berry Bushes; Black Scale; Suckering Date Palms; Grafting—Colure; Fox Tail for Silo; Cow Eats Wood; Gum Disease; Apple Troubles; Plums; Concord Grapes; Fertilizer for Potatoes, 199, 200, 201, 202.
LEGAL QUERIES.—Right of Way; Married Woman's Rights, 200.
VETERINARY QUERIES.—Distemper in Dog; Vertigo; Sores from Needle Grass, 202.
POSSIBILITIES OF ARIZONA, 203.
HOUSEHOLD.—Battle of Bunker Hill; Mystery of Lida; About the House, 202, 203.
PRODUCE MARKETS.—Los Angeles Market; San Francisco Market; Citrus Markets, 204, 205.

ANSWERS TO QUERIES.

The Cultivator takes particular pride in the fact that it has amongst its regular paid force of contributors some of the brightest people in the state of California in their various callings. They not only furnish regular contributions for the paper but answer queries which may be sent in showing the needs of our subscribers. These answers we believe are amongst the most valuable features of the paper. And from the number of queries which are received weekly we believe our subscribers are of the same opinion. The prominence which has been given to these contributors by their work has been such, however, that they are often imposed upon by personal requests sent directly to them asking for personal replies through the mail. We imagine Mrs. Sherman must have several letters every day coming to her home with request for personal and immediate answer. One who has never been similarly situated has no idea of the time the answering of such letters takes from one's life. We therefore request all subscribers who have questions which they wish answered to send them direct to the office of publication in Los Angeles. The questions will then be classified and often one answer will answer for several queries and the time of our contributors will not be so heavily drawn upon.

Another point which we wish to enforce in this place is for query writers to sign their full name. We scarcely ever use the full name. We never do where requested not to. But notwithstanding this request which appears in every issue of this paper no week passes but we receive communications with questions to be answered, unsigned or signed only by initials. These are usually consigned to the waste basket, notwithstanding they often contain questions which are perfectly legitimate and regular. No self-respecting paper ever pays attention to anonymous communications.

SHORT COURSE.

The recent short courses held under the auspices of the State University Farm at Davis brought together a number of bright young men from farms in many parts of the state and is the start, we hope, toward much better work and more extensive work to be taken up in this state in the near future. The present attendance at the High School on the same farm is disappointing for, as one farmer has expressed it, there are but about as many students as there are instructors. This shows the need of greater appreciation on the part of our young agricultural people for better knowledge of agriculture. For the sake of comparison we may refer to the recent short course held at Ames, Iowa. The classes in that course aggregated a total membership of over 800 scholars, all there for a good hard two weeks' work to fit them to bring Iowa farms up to a higher state of culture. Iowa is an older state and, agriculturally considered, it may be admitted that it has been a larger state than California. But the difference in these two institutions is altogether too great. Of the 800 students enrolled at the Iowa short course, 53 contested for the seven Armour scholarships which were won by the Iowa state college at the last international stock show. When the University of California fully understands the needs of the agricultural young people of this state and fits itself to meet these needs along the various lines of agriculture and horticulture it is possible our young people will rise to the occasion and show more interest than they have in the past. We trust such will be the case for the future prosperity of the state agriculturally depends on more perfect knowledge of the science of agriculture.

A MORE PRACTICAL EDUCATION.

The following which was taken from La Follette's preaches a very emphatic sermon on the advantage of more practical agricultural education in our schools, so emphatic, in fact, that we think it does not need any comment or moralizing:

"A man who stuttered badly went to a specialist and after ten difficult lessons learned to say quite distinctly, 'Peter Piper picked a peck of pickled peppers.' His friends congratulated him upon this splendid achievement.

"'Yes,' said the man doubtfully, 'but it's s-s-such a d-d-deucedly d-d-d-difficult rem-mark to w-w-work into an ordin-n-nary c-c-conversa-sation, y'know.'

"This reminds us that much of the education of the schools has been d-d-d-difficult to work into life. Perhaps that is the reason why we are trying something more practical; manual training and domestic science, farm and trade schools, and agricultural colleges."

The milch cows of the United States increased from 21,194,000, which was the number January 1, 1908, to 21,720,000 on January 1, 1909. The average valuation during the year increased something over $2.00, amounting to $32.36. On the contrary, beef cattle showed a decrease during the year of about three-quarters of a million head, the total number now being 49,379,000, with an average valuation of $17.49.

Swine have increased materially in average valuation during the past year, reaching an even 50 cents per head higher than January 1, 1908. At that time the average valuation was $6.05. January 1st, this year, $6.55. In this country there were, this year, 54,147,000 head, a decrease during the year of about two million head.

FARM LIFE.

A short extract from the message of President Roosevelt to Congress at the time of his submitting the report of the Country Life Commission appears on the first page of this week's Cultivator. It is well worth reading.

It is noteworthy that the President calls attention to the great benefits which will accrue to the farmer through the establishment of parcels post, organization of farmers, co-operation and other factors. There is nothing in the message which would show the President's idea to be for a moment that of giving aid or a charity to the farmers. On the contrary it is more that the farmers may be encouraged through co-operation, organization, parcels post and other activities to assert his rights, together with an uplift in social and intellectual life which may come with better opportunities in the rural schools.

The President makes a good suggestion that an appropriation of $25,000 be made that the work of the commission may be carried on to a successful conclusion and that the facts it has been delving into may be classified so that its lessons may be made of value.

TIME EXTENDED.

Because of the fact that irrigation works which have been performed under the direction of a National Reclamation Service, have been more extensive than anticipated when the act empowering such work was first passed, the National Congress is considering a bill which will extend the time which land owners may have to pay for the great cost of such irrigation plans. There are some sections of the country in which the ten-annual-payments plan necessitates an annual payment of $3 to $4.50. The big Roosevelt dam in Arizona calls for the land to pay at least $3 per acre each year. This may seem a small amount, but when it is considered that this land is to be taken largely by people of very small means who as a rule will have to make their living from the land as well as make these small payments it may be realized that if the amount of the annual payment can be decreased a great number of people of small means will be greatly benefited.

The act calls for the extension of time from the original ten years to twenty years with no interest from the settlers.

TREES FROM FLORIDA.

As was noted in the news column a bunch of trees shipped to Visalia from a nursery in Florida was destroyed by the Horticultural Commission of that county, because, as is well known, no living plant is permitted to enter from that state since the discovery of the white fly here showed the magnitude of the danger which exists. The infestation of the orchards at both Marysville and Bakersfield was traced directly to the importation of stock from Florida. No fruit-growing state which considers its own welfare could for a moment permit the further introduction of trees and plants from a state where the danger is so great. Yet, with this knowledge, there are fruit growers willing to jeopardize not only their own but the greatest interests of horticulture by endeavoring to ship in plants from that section.

The promptness with which this shipment was destroyed will probably prevent any possible introduction of the pest. While it is probable that those particular plants may not have been infested, yet the rule has been made so rigid that no plants whatever are admitted. This is wise and we trust horticultural commissioners and others of the state will be as vigilant as were those of Tulare county.

FARMERS INSTITUTE TRAIN.

Prof. W. T. Clarke writes from the Demonstration Train that the improved train service which is now given, over that of the first trip over the Sacramento valley, aids in creating an extraordinary interest and has given a great value wherever the train has gone. He adds: "We believe that its importance can hardly be over-estimated." The train will soon make its initial trip in Southern California.

Agricultural Notes of the Pacific Coast

Northern California

Northern coast counties have already had well up to five feet of rain.

The Board of Supervisors of Sonoma county have appropriated $150 to aid the Cloverdale Citrus Fair.

The Central Creamery will soon begin the operation of a condensing plant at Ferndale, Humboldt county.

Mendocino county wool men maintain that wool will command a better price next year than it has in the past.

Gov. Gillette is urging the adoption of a good roads plan by this state, which will bond the state for $18,000,000.00.

The appropriation for the State Dairy Bureau of California aggregates $5,000 per year; that of Pennsylvania $33,250 per year.

Dairymen of Humboldt county have protested against the placing of the work of the Dairy Bureau under the State Board of Health.

Farmers of Colusa and Yolo counties are discussing with more vigor than ever the necessity of proper protection from storm waters.

At the State Experiment Station at Davis two durum wheats have been found which may be grown on land too dry to produce common wheat.

The Eel River dam in Mendocino county stood the recent floods notwithstanding it carried more water than was ever seen over it before.

One farmer near Suisun is experimenting in quite extensive planting of shell bark hickory. He thinks California can produce a good hardwood.

Thousands of cords of wood will be gathered on some of the farms along the Sacramento river, brought down by the drift during recent floods.

One great advantage from the Iron Canyon reservoir now building by the government, will be the holding back of a portion of these storm waters for use in the dry season.

Hay is selling at $40 per ton in Weaverville, Trinity county. The heavy snows in the mountains have compelled stockmen to drive their cattle into town to feed in corrals.

The suggestion to build the suspension bridge over the Carquinez Straits has been superseded by a suggestion to tunnel in order to carry the products where the ferry boat now runs.

Senator Caminetti has introduced a bill in the State Senate providing for a consulting board on mining debris which it is said will be greatly to the detriment of the agricultural interests of the state and in favor of the miner.

The agricultural exhibit train accompanying the traveling Farmers Institute was made ready at the State Farm at Davis and is now touring the San Joaquin Valley. There will be two exhibit cars on the train instead of one as on the former trip.

The annual meeting of the stockholders of the Grizzly Bluff Creamery Company resulted in the election of the following officers: President, G. W. Sweet; vice-president, Charles Decarli; secretary, H. F. Harbers; treasurer, W. N. Church; manager, James Lawson.

Central California

The total precipitation at Delano aggregates 5.71 inches.

The crane fly is doing such damage in the pastures near Lodi.

Visalia is the latest in the Farmers Union column and with a good strong organization.

The hunting licenses of last year showed a material decrease over those of the preceding year.

The Wasco farmers are engaged in a new endeavor for that section in planting ten acres of onions.

The Kings County Chamber of Commerce has a fine display of citrus fruit in the rooms of the organization.

The apple orchards of Greenfield, Monterey county, are proving to be bearers of some exceptionally fine fruit.

The Supervisors of Monterey county are contemplating a concrete bridge on the road between Chualar and Gonzales.

Kings county farmers are complaining of the depredations of coyotes and suggesting a heavier bounty for their scalps.

The apricot scale at Greenfield has been controlled to a large extent by the colonization of a colony of Scutellista cyanea.

Raisin growers have suggested that the stores of the valley make a special raisin day sale at which the raisins shall be offered at low figures to consumers.

Articles of incorporation have been filed in Stanislaus county by the Eucalyptus Growers and Manufacturers Company. The company is capitalized at $250,000.

California legislature has passed resolutions urging other states to hold in abeyance legislation against sulphured fruits until the final report of the special Roosevelt commission.

The Santa Clara valley is growing less of the Longworth strawberry than formerly and is going to other varieties. This is occasioned by a lack of breeding up, or of allowing the Longworth to run out.

Dried fruit men over the San Joaquin valley are watching with much interest Dr. Wiley's effort to secure a duty on sulphur which will make it so high priced that it cannot be used in sulphuring the fruit.

Many of the best people of Fresno county appeared before the State Legislature and appealed for the establishment of a normal school at which future teachers of the state might be given instruction in agricultural matters.

It is believed that the storing of grapes and keeping them until winter market will be so satisfactory that millions of dollars will be added to the wealth of the state through the encouragement this will give to the great industry.

The third annual meeting of the Stanislaus County Farmers' Mutual Fire Insurance Company recently held at Turlock brought forth the report that during the last year about $80,000 worth of new insurance had been written. Directors for the coming year are: Mons Bothun, C. J. Lundell, Peter Erickson, Antony Morgan, S. J. Booge and C. G. Main.

Southern California

Extensive plantings of deciduous trees are being made at Moorpark, Ventura county.

The Highland orange growers have sold more fruit f. o. b. cars this season than ever before.

The water in the Hemet dam rose four feet in height as a result of a 5½ inch rainfall recently.

A new orange packing house at Nordhoff has just been completed and found to be entirely satisfactory.

Farmers of the Antelope valley are incensed at the destruction of trees in the Government Forest Reserve.

Walnuts are moving out more rapidly than for some weeks and an early clean-up is now anticipated.

It is claimed that there will be nearly 16,000 acres of beets planted in the section near Oxnard factory.

A light frost caught some of the earlier melons planted in Imperial and will delay the earlier shipments.

An automobile beet cultivator has been constructed and will be tested in the Chino sugar beet fields this season.

Long Beach is planning the beautifying of its city and to that end has secured plans from Charles Mulford Robinson.

A San Diego county rancher is engaged in planting 4000 acres of eucalyptus trees. It is located about six miles south of Escondido.

An immense land-slide on the coast line delayed traffic between Los Angeles and San Francisco several days during the recent storm.

The big Santa Fe pre-cooling plant planned for San Bernardino it is now announced will be delayed in its construction for nearly a year.

Bean growers of Ventura county are receiving about $3.50 per hundred pounds. Most of them are holding crops hoping for better prices later.

The Imperial Standard estimates that there will be not far from 3000 acres planted to cantaloupes this year. This will be much less than last year. Most of this acreage will be about Brawley.

The Southern California Co-Operative Dairy Association, one of the largest co-operative milk handling concerns in the state, now receives from its members about 50,000 pounds of milk daily.

The Southern California Dairy Association will soon have a home of its own in Los Angeles. It will cost about $25,000 and will have complete equipment of the latest improved machinery for handling milk and cream.

An action brought by J. R. Newberry of Los Angeles to secure the waters of the Santa Ana for use on lands at Rincon, Riverside county, has been decided after seven years litigation in favor of Orange county litigators who had filed on same waters.

The onion growers of Coachella valley have found their onions better keepers on the eastern markets than those shipped from the humid sections and they hope this season to reap increased rewards for their stock. They will largely go forward under the new brand "Salton Sea Brand, Grown in Rainless Belt."

The Coast

Eggs at Portland are still commanding 55 cents per dozen.

The winter school of farming at Pullman, Washington, attracted more students this year than ever before.

The oat fields of Skagit promise one of the most remarkable yields since the settlement of that section.

The state of Oregon needs a new irrigation law and an effort will be made to get one passed by this legislature.

The Interstate Poultry Show at Clarkston, Washington, made an exhibit of 300 fowls which were of a very high grade.

Farmers at Helena, Montana, who began action against the smelters at Anaconda, have been defeated and will get no damages.

Hawaii is endeavoring to keep out the scabby disease of potatoes, and to that end will admit no potatoes which show any effect of scab.

Fruit growers at Council, Idaho, recently held an annual apple day meeting at which time officers were elected for the coming year.

The annual joint meeting of the Montana Horticultural Society and the State Farmers Institute is being held at Missoula this week.

Preparations are practically completed for the great Trans-Missouri Dry Farming Congress which will convene at Cheyenne February 22-25.

The second annual meeting of the Hawaiian Bee Keepers Association, which met a few weeks ago in Honolulu, showed much interest in that industry in the Islands.

The Hawaiian bee keepers will make an exhibit at the Alaska-Yukon exposition, a part of which will be large photographs showing bee keeping scenes in the Islands.

Hawaiian Islands exported to California last year for use of the Santa Fe Railroad Company 2,500,000 ties. Hawaiian Islands are experimenting extensively in new varieties of eucalyptus.

The fire patrol of the government reserves in Washington has suggested the use of Angora goats for keeping the fire breaks free from chaparral growth after once it is grubbed away.

The Yakima valley and some other sections of Washington showed an egg famine to the extent that about the first of the month eggs were commanding fifty cents or even more per dozen.

Speculators at Salem, Oregon, are concerned over a decision of the Supreme Court which prevents them from using certain waters on land for irrigation purposes which is needed for domestic use.

The sugar beet is more of a staple product in Northern Colorado than ever before and is becoming more of a standard. The factories there paid farmers last year between five and six millions of dollars.

The local board of control of the National Irrigation Congress is appealing to the Legislature now in session for an appropriation of $30,000 to finance the Congress to be held next summer at Spokane.

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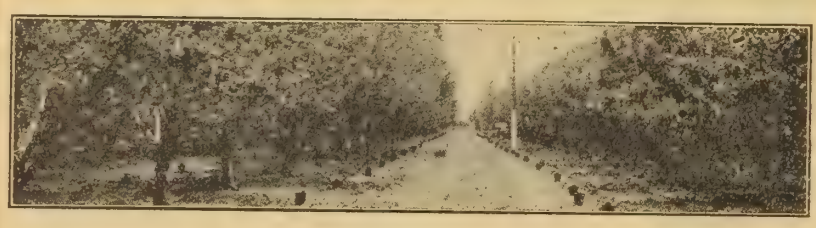

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Observations on Walnut Pruning

The following, written by Walter P. Temple of El Monte, states a condition of some walnut trees which should warn all walnut growers. The condition with attendant fungous growths and insects is fatal to the health of the tree and should never be permitted. But Mr. Temple's conclusions that he describes "walnut blight," is plainly in error. Blight has been proven to be a bacterial disease and is not due to poor physical condition of the tree.

AS A subscriber of the California Cultivator, and as one much interested in horticultural matters, I beg to submit to you the following article on "Walnut Pruning and a Possible Cause of Walnut Blight." I have 33 acres planted to soft shell walnuts on the old Temple Homestead at the old Mission in Los Angeles county. The soil, as is usual in this portion of the San Gabriel valley, is a sandy loam. I have about 800 trees which are 15 years old and are planted about 43 feet apart. They are good yielders and seem to be perfectly healthy.

The same principle in pruning applies to walnuts as to other trees, namely that the trees want judicious thinning out from time to time and should go to fruit and not to wood. The pruning should be fairly close to prevent unsightly knots and the subsequent growth of wild wood about their extremities. The practice of pruning trees with an axe as followed by some of my neighbors is reprehensible. You cannot do justice to your trees in this way. Unsightly cuts and stumps will appear, and in making a false cut you are apt to permanently injure your trees. Besides, to many parts of a tree an ax would be inaccessible. Use a saw, a good pair of pruning shears, and a light, portable ladder about three feet in height, with a top platform 14 inches square, upon which you can stand and work with comfort. You will then do a finished job which should be the aim of every horticulturist. Six years ago I had my trees pruned fairly close, necessitating the cutting of many large branches. These cuts I had painted over with thick paint to fill up and cover all small open spaces.

Three years ago my pruning was merely confined to the new growth and last year many large branches were cut away. This year some new growth was cut out, and drooping branches trimmed so as to permit of easy cultivation of the ground.

In pruning this year I have made the following observations which may be of use to walnut growers. I found that the six year old cuts, though in some cases presenting a fair exterior, were invariably diseased; and that these diseased, damp portions were honeycombed and literally full of animal life, consisting of peculiar, long, thin, whitish worms, three fourths of an inch in length, and great borers; ants with dark brown extremities and a yellow body; an insect resembling an ant, but larger and more compact; several of the large insects of a most peculiar aspect, and myriads of infinitesimal bluish mites, impossible for me to describe or classify. Prof. Smith of the Whittier Pathological Institute has classified as follows: Termits or White Termopsii, or Soldier King; Carpenter Ant—Camponotus; Wire worms—Elateridae; Carabidae Larva; Carabid Beetle; Millipedes; Lepidoptera Larva.

Becoming satisfied that this array of enemies might prove a menace to my trees, with hammer and chisel I cleaned out all these rotten cavities, full of animal life, some several inches in depth and extent, and have filled these with cement, which scheme insures the destruction of the insects remaining and the strengthening of the tree.

I believe if copper sulphate or any similar solution were injected into these cavities before cementing, it would be still better.

Every walnut branch or twig having a long, pithy cavity about its center presents a vulnerable spot to dampness and insects which every careful pruner should provide against. For this would seem to be a great point of danger. To insure against this danger at times of pruning, plug every cavity with a wooden plug, or fill with cement and then paint over with a coat of thick paint. Neglect this cavity from year to year and it will grow larger, winter rains will penetrate and, in time rotting take place. Then follow insect pests without number which burrow into the tree and limbs and eventually destroy it. Gradually the limbs and twigs become diseased, the leaf, blossoms and fruit are blemished, and in time the branch perishes entirely. And why may not this blemish be the walnut blight?

I notice that in all old cuts the lower portions are invariably decayed; and the upper parts are in many cases quite solid. This is in line with my theory that rain and moisture enter the central cavity; in time this exterior part dries and cracks, which cracks radiate from this center; that these small cracks admit more water, that gravity settles the water in the lower part; rots this locality and then it becomes the home of insect pests above described. It is also my observation that diseased fruit, leaf and limb occur at the lower part of the tree and not at the top; which shows that the top not being pruned, or very slightly, does not offer openings for borers and pests, but that the lower part being pruned and the pithy cavities left open and exposed, become infested with these enemies which do their work injuring limb, leaf and fruit, and bring on that condition known as "walnut blight."—Walter P. Temple, El Monte.

Dipping nursery stock in lime-sulphur wash or other insecticides has recently been much advocated as a substitute for fumigation with hydrocyanic acid gas. The Station at Geneva, New York, finds, however, that this treatment, if used at all, must be handled with care to secure scale destruction without injuring the trees. With sulphur wash, exposure of the trees for too long a time or at too high temperature resulted in injury; while with any of the materials used, exposure of the roots to the mixture resulted in serious injury to the stock. For nurserymen, the Station still recommends fumigation as most effective and least liable to injury; and would advise orchardists to use the lime-sulphur as a spray after the trees are set, rather than as a dip when they are received.

Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

By Mrs. Minna E. Sherman

THE MILK.

The bitterness that appears in the milk during the winter season is attributed by the farmer's wife to frosted alfalfa—to feeding the cows on green barley; indeed, everything is blamed but the true cause—that is bacteria. Temperature is the only thing that needs watching in these cases. The development of these bitter bacteria comes at a temperature a little too low for the regular souring of the milk by the lactic acid bacteria. The keeping of the cream in a warmer place will remedy the trouble. This same cause of chilling affects the bread; it does not rise properly, for the yeast plant, like the lactic acid bacterium, only grows at a temperature not lower than 60 degrees. The yeast plant is even more sensitive than the lactic acid one in that it dies at 85 degrees. How simple this all seems when we know the facts we are dealing with to be those tnat govern the growth of the plant world around us, not fairies and witches and the like things that we have no control over.

Soured Milk.

The use of either artificially soured milk or the natural produce of the churn, butter-milk, is at present a helpful health fad. The drug houses are selling extensively tablets, containing a form of bacteria to sour milk, or to make it into a form of butter-milk. The simple diet will help many people and if to it could be added the restful quiet and fresh air of the country the gain of health would be greater. The bacteria used are from a culture that is used by the people of the steppes of the Baltic country and has great effect in curing intestinal troubles. The bacteria infesting the internal organs are destroyed and replaced by this harmless one. That butter-milk possesses mild antiseptic properties has long caused its use in typhoid fever and other diseases of the bowels. Ordinary soured or clabbered milk is less digestible as the curd is in larger masses. The digestibility is increased when sour milk is added to the butter-milk and well churned with it. This adds to it the quality of broken curds and finely divided masses of casein are more readily acted upon by the gastric juices.

Bloody Milk.

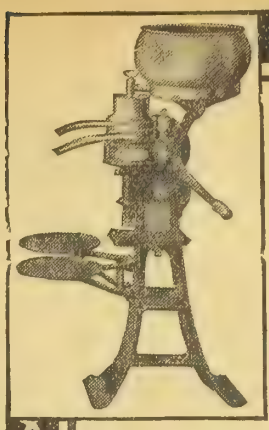
The cause may be bacterial by the infecting of the milk duct, as it is carried into the milk and developed into bloody clots in the bottom of the pans. This is a rare occurrence, too rare to be considered of much value in seeking a cause for the trouble in the ordinary dairy. The usual causes are careless jerking of the teats in milking, use of sticks in driving the cows, butting by the other cows with horns. I often wonder at the irritability of the cows toward one another. They will punch from behind the cow walking in front of them if they have horns to do it with. Now when blood is found in the milk try to remove some of these causes. Sometimes a fresh cow that gives an excessive quantity of milk will give for a few weeks bloody clots in her milk. This usually passes away when she settles down to a regular milk flow. These cases must be considered as either the bursting of a minute blood vessel that quickly heals or else it is a lack of proper transfusing of the material of the blood into milk. The supply of material that forms milk is directly from the blood. How milk is made we really do not understand but we do know that the milk veins of a cow carry blood, not milk, and the milk is formed as it is drawn from the udder.

The Udder.

Trouble of the udder from bruises can be readily detected if this organ is carefully examined. The old remedy for udder trouble, given internally, was a teaspoonful of sulphate of iron and a teaspoonful of ground gentian root twice a day in the grain feed. This remedy should not be used when a cow is far along with calf as it might prove dangerous to her. Nowadays, however, we have learned to recognize that local troubles of the udder are best treated by fomentations of hot water, steaming, or the rubbing on of hot lard. When there is persistent inflammation of the udder it is safer to test the cow for tuberculosis than to let her go on being a constant care.

Gentleness.

Humanity in handling the cows should be considered from the higher plane of loving all things God has made. Where this thought is not strong enough to appeal to the heart, then the lower motive of more milk and more money from gently treated cows may be talked about to the men. We must sell to the cow the privilege of doing her best if we cannot grant it from love and affection A new milker, that is gentle, will the first couple of times he milks the string get a noticeable reduction in the milk. It is only as the cows come to know him that they will increase in milk. The healthfulness of milk drawn from a nervous, fretted cow is less than from a contented animal. I know of a case where the milk from an abused, terror stricken cow produced nearly fatal results in the child using the milk. The farmer's wife and child's mother had milked the cow; the time came when she could not do so and then a neighbor offered to care for the cow and share the milk. The little three year old daughter had been fed milk from this cow for some time. Suddenly the child became alarmingly ill, the milk was discontinued for a few days, when it was resumed the child again sickened, the doctor at once suspected the cow. The farmer's wife went to see the cow and found her wild eyed and crouching in the stall. She asked why this gentle cow should act like that. The neighbor replied, the cow kicked at him and would not let down her milk but he had fixed her all right; he just batted her a kick or two in the belly every time he milked and it laid her out all right. The cow was taken home and treated with



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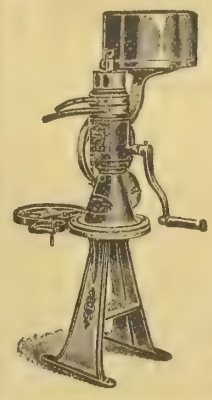

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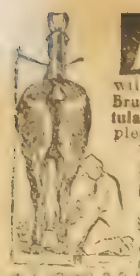

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kindness; no further trouble was experienced with the child.

Rights.

In this day of claiming for rights of all kinds the cow must claim hers too. How simple they are! A clean bed, enough food and gentle treatment. During this season of high priced foods there is a natural tendency to save. This is commendable, but let it take the form of saving on the cigars and smoking tobacco and on the saloon bill; it will, then, not affect the cows as they are not interested in these items. The greatest fault in the feeding at this time will be the chance that the sire is not given enough heavy food. If he is not fed as well as the cows, he will fall below their standard of physical vigor; the next crop of calves will run to veals instead of to heifers. The efforts of nature to preserve the species will throw the balance of sex to the weaker side. It is often remarked that the service of the town bull gives a larger number of heifer calves than the herd sire. The town animal is fed on grain, groomed and exercised the same as a horse, while the dairyman's animal usually gets what is left over and is kept in a small corral fighting flies all the summer days.—M. E. Sherman.

HOG KILLING ON THE FARM.

Some people do not feed their hogs the evening before killing, thinking the feed is wasted, and that the entrails are more likely to get ruptured when too full. I feed our hogs the night before killing. They are hungry as usual, expect the feed, enjoy it, and it seems cruel not to give them their last supper. There is not much waste if the entrails are emptied where the chickens can get at them.

Some men knock their hogs down with a club before sticking, others think it more humane to shoot them with a rifle before they are stuck. I have some doubts whether hogs will bleed out completely when knocked on the head or shot before sticking. Others throw a box over the hog, then tip the box over with the hog in it lying on his back, legs up. We catch our hogs in the pen, put a rope around one hind leg and drive them to the place of slaughter. I put the rope on the leg because, as I have fed them and cleaned the pen, they are not suspicious of me as they are of strangers, and I can rope them quicker than a stranger, from whom they are sure to run.

When arrived at the sticking ground the hog is thrown down and rolled square on his back; the knife is inserted just forward of the breast bone and close to it, then thrust back in the direction of the tail. This is sure to sever the big arteries in the neck and insures a "good stick," which causes the hog to bleed out more quickly and thoroughly, and the pork will keep better. In sticking a hog lying on his side the sticker is quite likely to thrust the knife under the shoulder blade and cause the blood to settle there, to the injury of one shoulder. A hog will bleed out cleaner if the head is kept on lower ground than the tail. In the great slaughter houses in Chicago the hogs are never stuck until after being hung up by one hind leg on an iron rod overhead. After being stuck they go slowly sliding down the rod to the place where they are lowered into the scalding tank.

The most important thing about butchering (as every farmer knows) is to get a good scald, so that the hair can be easily and quickly removed by the scrapers. It is better to have the water too cold than too hot, for a "cold scald" can be remedied by an application of hotter water; but a scald with the water too hot "sets" the hair so that the skin, being cooked, will scrape off with the hair, making it necessary to shave off the hair with a sharp knife, doing a poor job and requiring much time. Some butchers think they can tell the proper temperature of the water by putting their hands in it, which is rather doubtful. The exact temperature can be secured every time by the use of a thermometer. For large 300-pound hogs 170 degrees is about right. For small hogs and pigs the water should not be above 150 or 160 degrees, and then they should not be kept in the bath too long.—Country Gentleman.

DAIRYMEN SHOULD KEEP BOOKS.

Probably the most expensive error usually made by our farmers is the failure to keep books that will enable them, at any time, to tell whether they are doing business at a profit or loss. Many of our farmers can't tell at the end of the year whether they have made money or lost money. Should any other business be conducted in this manner, nothing but failure would be expected.

"It is extremely doubtful whether there is a single herd of cattle in South Carolina that does not contain some animals that have never produced one dollar profit for their owners. Probably most of our dairymen can, at the end of each month, estimate the cost of food and labor for the month, also the total receipts for the month, and in this way they can tell whether they are making or losing money. But even if the business is always found profitable, that is no reason why we should not be constantly on the lookout for leaks, because one unprofitable cow in the herd had far better be sold at beef prices than kept in the herd to reproduce her kind and continually reduce the profits of the dairy.

"By the use of milk scales, the milk sheet, and the Babcock test, the dairyman can cull out every unprofitable animal from the herd with but little trouble and expense, and at the same time determine, at the end of each month, what his total profits are."

A pair of suspension scales is recommended and are to be adjusted so that the empty pail will cause them to stand at a balance. The milk sheet can be made by any farmer, and is ruled so as to contain a space for each cow and a space for her milk each day. Then the bulletin says.

"At the end of each month, the sheet should be taken down and each column added up, the totals being entered at the bottom. We have then not only the total amount of milk produced by each cow for the month, but the daily record, which will enable us to observe any changes in the flow from day to day, caused by change in feed, change in weather, etc.

"So much for keeping the records. If we are producing butter or cheese, or selling milk that is guaranteed, we must know what per cent of butter fat the milk from each cow contains or we are still in the dark as to what she is producing.

"All dairymen know that there is a wide variation of butter fat in the milk from different animals, therefore some simple, practical method of de-

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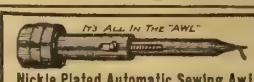

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termining the amount of butter fat in milk becomes necessary. We have this in the Babcock test, which is simple enough for any intelligent man to use accurately and at a very small expense."

The bulletin goes on and gives complete directions on how to take a sample of each cow's milk so as to know to a certainty just what she is as a milk and butter producer, and also the process of operating the Babcock test.

If the recommendations of the bulletin are followed out it will be of vast benefit to the dairymen of any State.—Bulletin of South Carolina Station.

RESTING THE COW.

It is always wise to give the cow a rest between periods of lactation, says Orff's Journal. Just how much she should have may depend on the age of the cow, her condition and the character of work she has been doing during the present period of lactation. Our practice has been to breed all young heifers, intended for the dairy herd young, that is so they will freshen right at two years of age. This starts them in on their life work of producing milk while they are yet young and discourages the habit of laying on fat from the use of their food. But at this age the heifer has not attained her full maturity and undoubtedly she should have a rest at an early date so she will have an opportunity to grow. To encourage persistency of milk flow she should be milked for a full year because what she does the first year she is likely to try to do each following year. To accomplish this end we postpone rebreeding her for four or five months so she may milk all year and still have a month or two to rest, grow and develop her body before starting in on another year of hard work. The older cows are always given from three to six weeks' rest between periods of lactation, but are bred so they will milk all year and then have the rest. Often a cow will become quite fleshy toward the latter part of her lactation and by this signify that she does not need a rest, in which case she will be kept milking up to within a week or two of calving. In other instances a cow will work very hard and toward the close of the year become quite poor in flesh. In this case she should be turned earlier and thus be allowed to rest and recuperate.

During the year the cow consumes a great lot of feed and as a result the digestive apparatus is subjected to strenuous work and when the cow is turned dry this portion of the body may be rested by changing the feed. If in summer, the best of feed will be good fresh pasture grasses, and if in the winter, corn silage, bran, oil meal, ground oats, and similar feeds. During the last two months of the period of gestation the foetus or young calf is making its largest growth and all this growth is given to it by the dam, and if at the same time she is working hard at the pail it cannot be expected that she will do the best by the youngster that is to come. Then, too, if the cow is given a rest and fed well during the time she will store up flesh, strength and stamina that will aid her greatly during the next period of lactation, especially at the beginning. Careful observation on the part of the dairyman will reveal that, other things being equal, the cow that freshens in a strong, fleshy condition will milk heavier and her milk will test richer than the cow that works right up to the end and freshens in a poor, worn-out condition.

LIME IN ALFALFA CULTURE.

Alfalfa is a curious plant. In some soils, such as one finds in Utah, Colorado, Montana and other semi-arid states, alfalfa is like a weed; it thrives with the least encouragement, spreads, persists, is immensely profitable. Then in the East there are a few regions where alfalfa seems almost native to the soil, such as parts of the glaciated soils of Ohio, Indiana, and Northern Illinois and Wisconsin. There are soils in New York, such as in Onondaga County, that grow it almost spontaneously. Seeing these facts, men urge that alfalfa will grow anywhere if it is sown and inoculated, etc. Then come experiments in other sections of the East and disastrous failure very often, and men wonder why. Often they have gone to much trouble to manure, fertilize, drain, inoculate, and even then alfalfa has not thriven. Now what's wrong? Here seems to be the secret. In the semi-arid West the soil is very fully charged with lime salts and other alkalies.

It is often too full of lime to make other cultivated crops thrive at all. Yet alfalfa there grows almost into a tree. In the glaciated regions of Ohio and westward there are millions of limestone pebbles in the soil, soft limestone pebbles, brought there by ice, centuries before you and I were born. These soils are alkaline. In Onondaga County, New York, the soil is full of pieces of soft limestone, and in parts of Kentucky where alfalfa grows well the soil is filled with shaley limestone fragments. So in Alabama and Mississippi where alfalfa seems almost native, the soil is made up of soft limestone rock, decayed by the weather into soil. It is very fully charged with lime.

Well, have we not all along taught that alfalfa needed lime? Maybe we have, but we have said "lime" in so mild a manner and so low a voice, that we have not been heard. And when men asked timidly, "How much lime?" we have replied, "Oh, whatever your soil needs," and let it go at that. The result has been that men have failed to become impressed with the very great, the really vital importance of having not "enough" but "too much" lime in the soil, for making alfalfa do its level best. The plain fact is that alfalfa loves lime, feeds on lime, eats and drinks lime, wants lime first, and whatever else it can get.

Give me well-drained soil, either by natural drainage or artificial, and access to a lime heap, and I will make Colorado or Arizona alfalfa in Rhode Island or Connecticut or New Jersey or Maryland. In truth, I have done it already in several of these states. Instance, one farm near Philadelphia. This farm had been well manured, was rich, was drained, yet would not grow alfalfa profitably. After investigation I prescribed lime. Man asked, "What kind of lime?" I replied "Ground limestone, unburned, if you can get it." He found he could get it cheaply enough, and came again. "How much lime?" "One hundred

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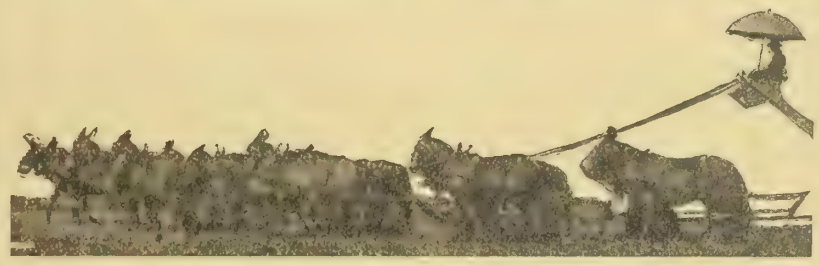

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Wheat Middlings	12.2 "	Corn Meal	6.4 "
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In order that our policy holders and those interested in live stock insurance may have a better knowledge of what we are doing, we issue the following list of losses paid. We would earnestly ask those contemplating insurance to write to any of the parties named herein relative to our promptness and fair dealing.

This is a home Company, organized under the Laws of the State of California, with a deposit with the State Treasurer as a guarantee for the payment of losses, and the only company where insurance can be obtained at actual cost to the policy holder.

We have written in the last six months over $1,100,000.00 insurance, and with the support of the farmers and stockmen of California we will make a stronger and much better company than any of the eastern companies which have proved of such value to the stock owners.

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pounds to the square rod, that is little enough," I replied. The man hesitated at that and balked just a little; one hundred pounds to the square rod is eight tons to the acre. He put on six tons. He inoculated the soil with other soil from a good alfalfa field. He sowed alfalfa. He got six tons to the acre the next year. And all his neighbors came to see the miracle that had been worked. That lime cost the man about $12 per acre. His six tons of alfalfa hay were worth to him at least $100 to feed his cows, so it paid him immensely, did it not?

Again, many men who have grown alfalfa with fair success have been troubled with annual grasses and weeds. They have fought these in many ways, usually with partial suc-

A JERSEY BEAUTY.

cess. Now we have learned this. Where there is enough lime in the soil the alfalfa will subdue crab grass and almost any weed; will subdue all grasses except Kentucky blue grass, and that is easily taken out in the Spring with a spring-tooth harrow. My letters from the south this Summer are filled with cheering illustrations of how easily crab grass, their great bugaboo, is worsted in alfalfa fields simply by the use of large amounts of lime! That makes the alfalfa too lusty for the crab grass. Keep up the campaign for alfalfa and lime, lime again, and then shut your eyes and keep on liming; eight tons of ground or finely crushed limestone to the acre. Two tons of burned lime, three tons of air-slacked lime to the acre. Then phosphorus, manure, good seed.—Charles E. Wing, in Rural New-Yorker.

A HARBINGER OF GOOD TIMES.

The bright outlook for business conditions all over the country is not a new thing to the farmer. His prospects were brightened long ago by the invention of wonderful labor-saving and time-saving implements which have enabled him to increase his yield and market his output with corresponding increase of profits, despite depressed conditions in the industrial world. People must live, and to live they must eat. Whatever else they are compelled to do without, they cannot do without food, so that whatever adds to the efficiency of the farmer in his food-producing vocation, adds to his blessings. One of the most important factors in bringing about this condition was the invention of Planet Jr. Farm and Garden Implements. They have revolutionized the slow, laborious old gardening and farming methods and have put them in the class of twentieth-century achievements. As an instance, No. 4 Planet Jr. which is a combination hill and drill seeder, wheel hoe, cultivator, furrower and plow is the most complete tool a farmer or gardener can have on his place. He can do more work with it and keep things in better condition in one-sixth the time it would take without it. The No. 4. is only one of the many Planet Jr. implements—there is one for every farm and garden task, whether for hand or horse power—and all of them are sold with an iron-clad guarantee of absolute satisfaction.

S. L. Allen & Company, Box 1106 P, Philadelphia, Pa., who make these implements, have issued a handsome 56-page illustrated catalogue for 1909, which they are sending out to anyone interested in better farming methods and labor-saving devices.

Imperial Valley Lands have a greater earning capacity per acre than any land on earth. For price list and information address, James S. White Jr., and R. A. Holt, Holtville, Cal.

Bees and Their Care

THE DRONE BEE.

WITH the closing of the honey season comes the passing of the drone. The air is no longer filled with the loud hum of great strong wings, they have had their day; it may have been sweet, it certainly was short. They toil not, honey they have not gathered, neither have they helped build the beautiful white combs; yet one cannot justly speak of them as the lazy drones, says a writer who claims to have studied bees and their habits. They show as much if not more energy and vim, are just as industrious in fulfilling their mission as is the queen or worker bee. A drone bee can't gather honey any more than a rooster can lay eggs, because he is not made that way. They would starve in the midst of the sweetest clover field that ever bloomed.

In order that you may get a better understanding about these bees and the queen, let us go back to the early summer. At this time every normal colony raised from a few thousand to many times that amount of drones, all depending on the amount of drone comb in the hive. (Drone cells are one-fourth inch across while worker cells are only one-fifth inch across, and not so deep, and a drone cannot develop in a worker cell.)

As soon as these drones are old enough they go out of the hive in the middle hours of all fair or warm days and fly around in search, or at least are on the alert for any young queens that may have come out for the purpose of mating with them. It is here, in the open air, often not above the sight of man, that the mating takes place, the drone bee dying instantly. The queen then returns to her hive and in a day or two begins to lay, and will lay fertile eggs—often 3000 to 4000 a day—for from two to four years, without mating again.

We have slight evidence that some queens have mated more than once before beginning to lay, but we have only a vague suspicion that it ever occurs after a queen has commenced to lay.

This being the case, one is apt to wonder why a colony rears so many thousand drones when only one or two is absolutely necessary. But it is a wise provision of the Creator. If a colony had only one or two drones the young queens might be in the air all day and not meet one, especially if there was only the one colony in that location. As it is there are thousands, and near a large apiary there may be millions in the air, but as they fly many miles from home, covering a whole township, they are not much crowded after all. It also leaves little chance for close or in-and-in-breeding.

While honey is coming in freely the drones seem to be congenial associates, not only in the colony where they were hatched, but in any colony they may enter, and often join colonies that are miles away from their original home.

As the honey flow ceases the bees seem to know that they will have no more young queens and therefore no use for drones, and they are no longer welcome. Their own colony either drive or starve them out, and when they enter other hives they are stung to death the same as a strange or robber bee would be unless the colony is queenless or has a virgin queen, then they are welcome.

The drone has no father, he is merely the son of his mother. If a queen is not mated with the drone bee before she is two to three weeks old, she begins to lay and the eggs hatch out perfect drones, but never any worker bees. If a pure black queen mates with a yellow Italian drone, the worker bees from her eggs will be mixed, often all the way from black to yellow, but the drones will all be black and free from any trace of the yellow or Italian blood.

The drone's lot is not an enviable one; he starts with but one parent and if the honey flow stops before he is ready to hatch he is jerked out of his cradle and thrown out of the hive. He is wanted while useful and stung or starved to death whenever business is not booming.

NEW BEE-KEEPING TERRITORY.

If the Imperial valley will hold no more bee keepers until Harriman waters that small matter of 1,500,000 acres we must look around for other fields to conquer. There is some room at Yuma, on the government reclamation project, which will soon be ready. Then there is the Great Salt River Valley project; but probably this will be fairly well occupied by bee keepers now on the spot. There will be 300,000 acres of irrigated land at Parker, Arizona, where some one is building a great bridge over the Colorado River. There is a considerable body of irrigated land at Needles, on the Colorado, and more will be reclaimed. There are 40,0) acres available at Palo Verde, on the California side of the Colorado. The U. S. Reclamation Service has in mind an immense project on the Colorado, embracing Utah, Arizona, and California, which will cost in the neighborhood of $40,000,000. That's some money to spend on a dam. This would completely dwarf the great Assouan dam on the Nile, and make a great paradise for bee keepers, as alfalfa, dates, and oranges would be the leading crops. The date is a fine honey-yielder, excelling alfalfa, in my opinion, and, of course, the blossoms are not cut.

New Mexico, too, is forging ahead, and ere long will cut a figure as one o. the important honey states. When the immense Elephant Butte dam is completed a great stretch of land will become available for bee keepers. Around Deming pumping plants are doing wonders in bringing lost rivers to the surface, and probably large areas elsewhere can be reclaimed. Southern Utah (Utah's Dixie) holds much in store for bee keepers. Even oranges will grow, and the date is hardier than the orange. Southern Nevada, too, is making headway, and for fruit culture they claim to have California "licked," whatever that may mean. Oranges grow there also, but figs are in their glory and so are grapes.

Date culture will help bee keeping, and I opine Texas will stand an excellent chance in this respect. Florida might cut quite a figure in date growing, and probably the Sea Islands of Georgia and South Carolina. Dates do well in Bermuda and the West Indies, and it is amusing to see the bees at work on the blossoms. They simply crawl over the blossom as they do on a feeder until they fill up.—Gleanings in Bee Culture.

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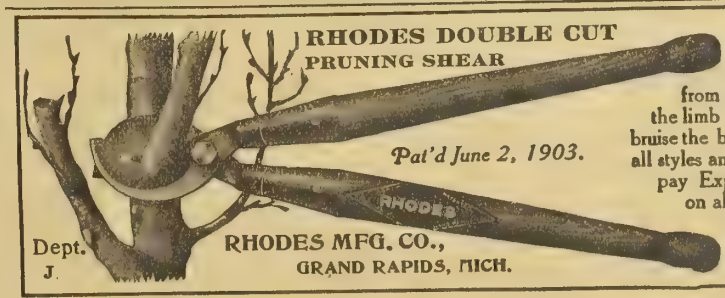

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General Agriculture

WHAT IS DRY FARMING?

For the information of those who are not familiar with the work that is being done in the West by the Trans-Missouri Dry Farming Congress, which will hold its third annual sessions at Cheyenne, Feb. 23, 24 and 25, William C. Deming, editor of The Wyoming Tribune, and who will be present and is expected to address the congress, has answered the question, "What is dry farming?" in the following words:

"Two years ago in the Rocky Mountain West dry farming was a joke and a by-word. Today hundreds of thousands of acres are, or soon will be, under cultivation by this method; thousands of sturdy men are its devotees. Dry farming has joined hands with irrigation in reclaiming the barren wastes of the West.

"Technically speaking, all that section of country in which the annual rainfall is less than twelve inches is called arid. Where the rainfall exceeds twelve inches and is less than twenty inches, it is called semi-arid. For convenience and easy reckoning, draw a line from Bismarck, North Dakota, through North Platte, Nebraska, to Laredo, Texas, and all that country to the westward to the Sierra Nevadas and the Cascade Mountains may be termed arid or semi-arid, and it embraces more than one-third of the entire United States. In this section is all that is left of the public domain, and it is the hope of the men and women who, crowded out of the congested East, desire to carve out new homes in the West and transmit to their children a family rooftree.

Only a Tenth By Irrigation.

"It should be remembered that the most liberal estimate ever placed upon the amount of arid and semi-arid land which it is possible to reclaim by irrigation, if all the waste waters were utilized, is ten per cent of the total area, and this doubtless is twice too much.

"After counting out the irrigated land and mountainous lands, the worthless lands, the timbered lands, the mineral lands, the government reserves and all other lands suitable for grazing purposes only, we may have left twenty per cent of the whole section reclaimable by dry farming.

"The arid and the semi-arid West for forty years or more has been largely a sheep and cattle pasture, and it is conservatively estimated that it requires from twenty to one hundred acres to support one animal, the average being about thirty-five.

"It will be readily seen, therefore, that if after all the available water has been used for irrigation, there is still an agency by which other millions of acres may be reclaimed, then cosy homes will replace the sheep wagon and school children will romp where only lambs flocked before.

"What, then, is dry farming? In plain words, it is farming successfully with the natural precipitation, which must be so conserved and used as to obtain results. The world has plodded along for several thousand years, and yet it has occurred to but few people, until within a decade, that it is possible to store up the moisture as it falls and use it when desired. When rains come and the snow melts upon the native sod in the arid and semi-arid West, the moisture is either quickly evaporated from the surface or passes into the ground, from which it is almost as quickly drawn by the same process of evaporation.

"When the land is plowed and permitted to lie without subsequent tillage, the moisture, whether from rain or melting snows, soaks into the ground, possibly to the depth of the furrow, from which it is again withdrawn by evaporation. Influenced by the heat of the sun and the aridity of the atmosphere, the surface bakes and a crust is formed. The untutored and uninitiated, as it were, in the dry farming cult, would no doubt, assume that the crust so formed would act as a protection against the 'drawing' influence of the air and sunshine, and would, therefore, prevent evaporation. The reverse is true, and herein is the key that unlocks the secrets of dry farming. The crust so formed is cellular. It is full of little holes, through which practically all of the moisture beneath passes out into the air.

Conservation of Moisture.

In the arid and semi-arid West, particularly in the rarer atmosphere of the higher altitudes, the evaporation takes place so rapidly that the residents of those region almost invariably under-estimate the annual rainfall. The average altitude of the arid and semi-arid region is about one mile above sea-level.

"Since dry farming has been reduced to a science it will not be amiss to use scientific terms where they elucidate rather than obscure the subject. The process of evaporation through the cellular crust above referred to is the result of a force known as capillarity. A familiar and effective example of capillary attraction is that of holding the edge of a lump of sugar in water and watching the moisture move steadily toward the top. Or a better example still, in which capillarity and evaporation are both illustrated, is found in the lamp, the flame of which consumes the oil as fast as it rises in the wick, through capillarity, just as the warm dry air consumes all the moisture in the ground by means of the cellular 'earth-wick.'

"It must be evident then that if provision is made by which the precipitation, which readily passes into the soil, is prevented from passing out by capillary attraction and evaporation, we are in a position to use this moisture and produce a variety of crop; it having been demonstrated conclusively that agriculture can be carried on successfully and profitably with a minimum of twelve inches of precipitation, if all is devoted to the right use.

Fallow.

"As a rule, it is better to let a piece of ground, whether fall or spring plowing, lie fallow during the summer, seeding it each alternate year. During the fallow season the surface of the plowed ground should be harrowed or stirred after each heavy rain, or big snow, thus forming a dust mulch or blanket, as it were, by which capillary attraction is destroyed and evaporation reduced to a minimum. Even the casual or indifferent student of agriculture will see that the effect of harrowing after rain or snow prevents the forming of a crust and the

consequent cells which accelerate evaporation.

"Thus the secret of dry farming is the conservation of the moisture that falls and the secret of the conservation is the destruction of the little cells at the surface through which evaporation is so active and the secret of the destruction of the little cells is frequent harrowing of the surface, which prevents the forming of the crust.

"The soft dirt or granular condition permits the moisture to pass rapidly into the ground and likewise holds it where it will do the most good. That, in brief, is the science of dry farming, which after all is not "dry" farming, but the intelligent retention and application of all the moisture that falls in a section of country whose agricultural possibilities have heretofore been considered more than doubtful."

PLANTING ALFALFA ON SALTY LAND.

In an address on the above topic, Mr. E. Brauckman of Mecca at the recent Farmers Institute at Thermal, said:

"It is with some diffidence that I appear before this institute in the capacity of instructor in matters relating to agriculture. I feel that there are many old farmers in this meeting at whose feet I might sit and learn. It cannot be said that my brother and I went at it haphazard in planting our alfalfa, for we gave it serious consideration. Not being farmers, having been born and reared in a large city, we were indeed tenderfeet in our knowledge of the science of agriculture. As is usual, there are many ways of doing a thing, and in our questioning of alfalfa growers we received various and sundry pieces of advice as to the best plan to succeed. Nurse crops, etc., were discussed. Where we have an abundance of water, as we have around Mecca, the planting of a nurse crop is superfluous. In seeking for information, the feasibility of raising alfalfa on such salty land as ours was doubted, for no one had tried it. A certain doctor, agent of the Agricultural Department at Washington, in inspecting our ranch, was filled with astonishment at what he saw. He exclaimed: "I have seen alfalfa grown on all sorts of alkali land, but on nothing like this. How did you do it? How did you do it?"

The piece of land we selected for our alfalfa was cut up by a wide wash, down which the waters from the north flowed in times of excessive rains, an event which happened but once in the six years that we have lived on the ranch. The former owner of this particular piece of land after we had bought the place, was so pleased with his bargain that he told the neighbors that he did not see what we wanted with the ranch, as you could not raise anything on it. However, we had faith that we could make it go.

In leveling the land, with a Fresno scraper, we hauled hundreds of loads into the wash, yet as the upper part contains the most salt, the seed germinated there as well as it did at the upper and lower ends. Our land at that time was much drier than now. No doubt the Salton sea has sucked up the water, and there is considerable seepage from above from irrigation waters. So it was that the surface of the ground was nothing but dust. Into this dust we sowed eight pounds of seed to the acre with a hand seeder. After the seed was sown, a horse was hitched to a mesquite branch and dragged over the surface to cover the seed, after which water was run over it. In three or four days we were gladdened to see the ground covered with young plants, as someone expressed it, as thick as the hair on a dog's back.

If memory serves me right, the mature alfalfa plant can endure seven times as much salt as the young plant, from which it is plain that the young plant must be irrigated frequently to dilute the salts that will gather around the young rootlets and eat them. From my observation it seems plain to me that the growing of alfalfa on salt lands can only be accomplished by the use of an abundance of water. However, care must be taken that the lands are perfectly even so that the water will not stand any length of time, or the young plants will be drowned out.

Four bills have been introduced in the State Assembly providing for an appropriation for the State Agricultural Society of $30,000 for new machinery hall on the fair grounds, $20,000 for an agricultural pavilion and manufacturers' building, and third for $10,000 for work on the ground and $10,000 for tanks and pumping machinery.

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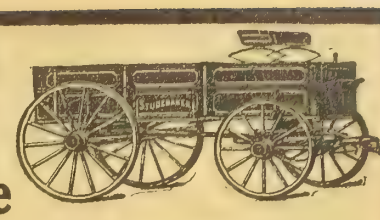

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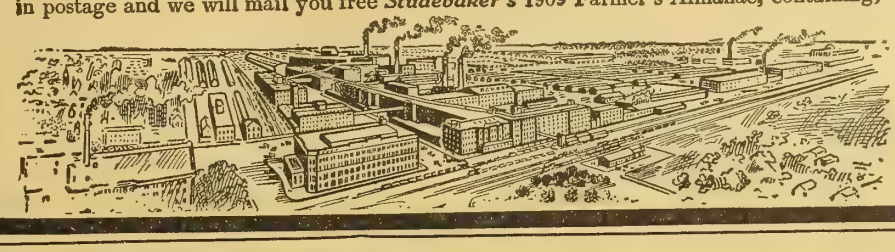

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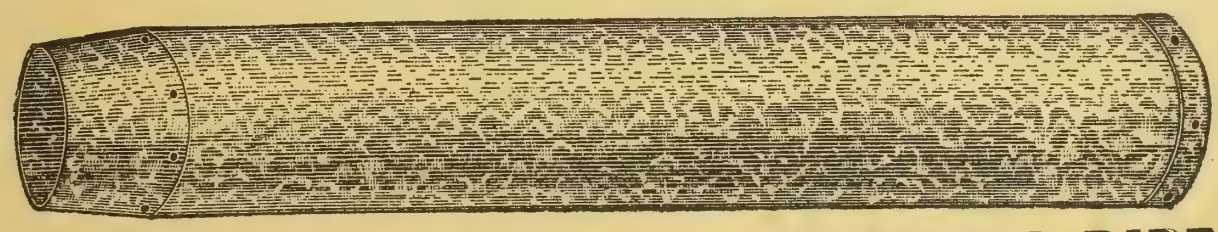

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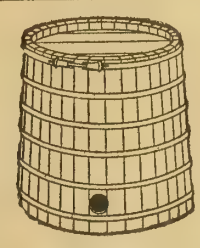

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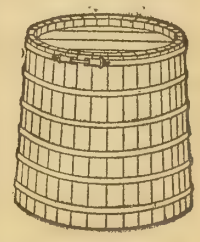

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The critical time for cutting the head is when it has reached its full size, but before the curd shows any separation, which indicates the starting of the flower shoots. Heads that remain on the plant after this time show a sort of granulated appearance and a slight discoloration. The idea that any poor sort of head is suitable for pickling is misleading. One that is not good enough for the table is not good enough to pickle, although the better portions of damaged heads may, of course, be used. A discolored tough or inferior head will make a dark colored, poor pickle.

Varieties or strains of cauliflower have been divided by selection into two types, the early and the late. The seed of the first or dwarf type is produced in cold, northern sections—the farther north, the earlier and dwarfer is the strain. Seed of this is the most expensive because the crop is produced under practically garden conditions. Seed of the later, larger kinds is produced in a warmer climate and is comparatively cheap. But the late varieties take a long season for growth, they occupy as much space as the largest cabbages and there is some uncertainty as to their ever heading. The home gardener should plant the extra early dwarf sorts.—Journal of Agriculture.

MAKING A SMALL GARDEN.

The soil must be well drained clay loam, filled with humus by plowing in animal manure, or green crops. Generally it is better to plow or thoroughly work a liberal quantity of manure into the soil before planting, then supplement with composts and chemical fertilizers as needed. The better way is to use new clover sod for the garden every two or three years. If this is not done, it will need frequent applications of wood ashes or lime to prevent acidity of the soil. When the stalk or leaf is the edible part, feed the plant well with nitrogen, which is generally most available in vegetable or animal manure; when the fruit, bulb, kernel or root is used, feed well with wood ashes, potash and phosphoric acid in some form.

Plan.

The garden should be rectangular in form, at least twice as long as wide, and should, if possible, slope to the south or east. The bush fruits and vegetables not removed annually should be located all on one side of the garden or on a separate plat. Everything should be lined in perfectly straight rows, to facilitate cultivation.

Planting.

In planting seeds a good rule is to work the soil only when it is dry enough to crumble in the hand, to cover the seed to a depth of two or three times its thickness, and firm the soil over it with the feet or other means. Use the seed drill where practicable. Sometimes a light mulch placed over the surface for a short time and kept moist causes quicker germination. Plant varieties known to grow well in your own or similar localities, and experiment with novelties only in a small way. Plant seeds purchased direct from a reliable seedsman.

Cultivation and Tools.

Having the garden planned in long, straight rows, we are able to use the hand wheel and horse cultivators, and greatly reduce the labor of cultivation. Different forms of hand hoes and weeders are needed to work in the spaces between rows not reached with the wheel cultivators. Try to cultivate before the weeds appear, and keep an earth mulch an inch or so deep in the uncultivated spaces, to conserve moisture. Keep the surface level. Make no "hills" or "beds" for any crop.

CABBAGE WORMS.

Nearly every one who grows cabbage is troubled more or less with these pests and we are glad to note every remedy which has been tried by gardeners. We give two herewith which can be recommended to do what is claimed for them. Take a pint of barrel salt and dissolve it in a gallon of water. After the salt is thoroughly dissolved sprinkle it on the cabbage with a common garden sprinkler. The result is no worm-eaten cabbage.

Take alum and dissolve it in water and apply it to the cabbage with a common sprinkler as often as there are any worms to be seen. A few applications are sufficient. This remedy is entirely harmless, not very expensive and is sure destruction to the worms. Make the solution quite strong with alum.

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Potatoes planted three inches deep matured earlier and produced a larger crop than those planted four and a half and six inches deep.

Level culture proved more profitable than bedding and "hilling up" the rows.

In a complete fertilizer, potash over 6 per cent was unprofitable, while usually large percentages (8 per cent and 10 per cent) of phosphoric acid greatly increased the yield.

Cottonseed meal applied only a few days before planting was too slowly available to prove a desirable fertilizer for early potatoes.

Some one has said that tillage is fertilization. This may not be literally true, but it is true that with intelligent and thorough tillage thin land will nearly always produce better crops than richer land with insufficient tillage.

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A large assortment of choice Garden, Flower, Tree and Palm Seeds.

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All the Best Hybrids, all the Colors. 5c per oz.; 50c per pound postpaid.

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I have the ***Best.*** Price $2.50 per 1000. Write for ***my*** price on lots of 10,000 or more.

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Fruit Trees and Berry Plants of All Kinds.

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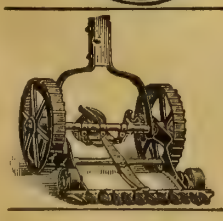

THE CLIPPER

Will cut tall grass and weeds and do all the trimming along the walks and drives. Your dealer should have them—if he has not drop us a line and we will send circulars and prices.

Clipper Lawn Mower
Dixon, Illinois.

Tulare grange favors the repeal of the Cartwright law.

The Ornamental Garden

POINTS ON BEAUTIFYING HOME GROUNDS.

THE following hints on beautifying home grounds are written by J. E. Mundell of the New Mexico College of Agriculture.

Site.

The trees and plants surrounding the house are analogous to the frame of a picture and should be so arranged as to give a good background to the buildings and help to present a natural view of the place.

Soil.

The soil in which the trees are to be planted is a very important consideration. If the soil is too sandy and gravelly so as to be deficient in plant food, good success with trees will be hindered unles the soil be well fertilized. On the other hand, the soil may be too heavy; but this condition can be overcome, somewhat, by the proper application of stable manures.

A good loamy soil is conceded to be the best for trees and ornamentals, and in some cases it would pay to haul this kind of soil to start the trees in.

Selecting the Trees and Plants.

Before selecting your trees, take a drive through the neighborhod to see what trees and plants are already growing with success in the yards of your neighbors. Then go to your nursery catalogue and order your trees and plants with a feeling of assurance that they will grow if you give them the proper care and attention.

Size of Trees to Order.

In ordering trees do not select those that are too large, because it has been found that the best success has been secured with smaller trees especially with conifers.

Time to Transplant.

All plants, to insure the best success, should be transplanted during the dormant season, and while they can be set out in the fall or winter, spring planting is preferable.

Transplanting.

In transplanting do not place the trees too close together or where they will obstruct the front view of the house. Plant the shrubs and ornamentals in front of the trees, also near the house to soften the outlines, and in the sharp angles made by the walks or beds. To prevent shading of shrubs and ornamentals they should not be planted too close to the trees. When flowers are planted they should be placed in front of the shrubs to finish the background. It is not a good plan to cut up the lawn in front of the house by trees or shrubs; a few small groups of shrubs planted in the proper places will break the monotonous outlines of the lawn.

Care and Management.

After planting the plants, they should receive good care and attention. Plenty of water must be supplied to them either naturally or artificially. The soil should never be allowed to become dry. The time to irrigate can be determined by examining the soil. If the soil around the plants cracks open too much after irrigating, the cracks should be closed by filling with soil or tamping it down. This should be done until the trees or plants are established.

Pruning the trees and shrubs should be practiced only when necessary. Plants should be pruned to give them form, to remove extra growth and dead branches. The natural form of the trees, shrubs, and ornamentals should be preserved as much as possible. Limbs removed should be cut off close to the trunk to insure quick healing of the wound.

HOW TO MAKE HYDRANGEAS BLUE.

IT IS a little late for this year, but it is good to remember. The monthly circular of the Women's Agricultural and Horticultural Union gives the following about hydrangeas:

As present there is a craze for the blue-tinted flowers; and for commercial purposes these are artificially colored, since there is no variety which can be depended on for blue flowers, which is also suitable for market use. Plants growing in the open ground will occasionally produce blue flowers, and revert to pink the following year. Iron in the soil tends to give the blue tinge, so iron-filings are sometimes mixed with the potting soil for this purpose, though water containing a solution of alum is more generally used. In one district of France, where the blue tint appears without extraneous aid, the properties of the soil are found to be silicious, with rich humus, phosphates and iron. Lime is almost absent, so should be avoided in the culture of hydrangeas, if the blue is aimed at. It is said also that where blue flowers occur naturally it is on plants that bloom late, when the wood is well ripened.

Some sandy soils, and others where fragments of slate predominate, have the effect of turning pink hydrangeas to blue. These are not available everywhere, so we must seek a good receipt for bringing about the transformation.

The following, which appeared some few years ago in the Revue Horticole, can be depended upon. This, in agreement with what has already been noted as to ripened wood, lays down the law that to experiment on young cuttings is useless; plants must be at least two years old, and healthy before being taken in hand. Turn them out of the old pots and wash the roots perfectly clean; then pot up in either of the composts:

(1) Sandy peat with 10 per cent iron-slag, 3 per cent sulphate of iron and 5 per cent dried and crushed animal manure.

(2) Sandy peat with 10 per cent powdered slate, 3 per cent sulphate of iron and 1 per cent ammonia.

In either case the plants are to be watered twice a week with water in which 36 grains to the gallon of sulphate of iron has been dissolved. It will be seen that the comparatively high price of blue hydrangeas is to be accounted for in two ways; first, that they will be three seasons old before fit for sale; secondly, that the process is somewhat tiresome, and involves the stocking of ingredients not usually required in the potting-shed.

This all applies directly to the English pot culture. In California a single plant grows as large as a small greenhouse in the open ground. The coloring prescription will, however, work under our superior conditions and produce a deeper blue than we now get from the iron which is naturally abundant in most California soils.—San Jose Mercury.

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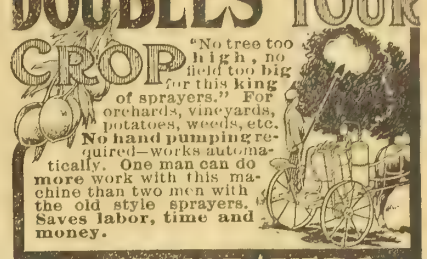

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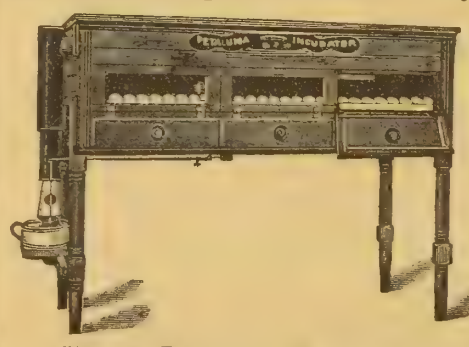
Is based on ***quality*** and it is quality in Poultry Food that produces eggs. ***Cheap filler*** and ***cheap grain*** will ***not*** make eggs. ***Midland Poultry Food*** contains only the ***choicest*** cereals and animal food the market affords. You ***can't*** afford to try and be successful and not get results. ***Midland Poultry Food*** will produce results. Try it and see. $1.95 per sack



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Send for our Illustrated Catalogue.

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Petaluma, California

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When the chicks are hatched don't feed them anything for 24 hours, then feed them the best dry Chick Feed you can get. We say that is

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Read what others say:

SAMUEL R. KELLAM, former president of the L. A. Co. Poultry Association, says: "West Coast Chick Feed is the best feed for young chicks I have ever used."

MRS. A. BASLEY, the celebrated poultry authority, says. "I want some more of your West Coast Chick Feed, for it is excellent. It is purer, cleaner and appears better balanced than other feed I had been using, and to tell the truth, I have been experimenting, feeding both together, and they always eat yours in preference."

Ask your neighbors, for there is more of "West Coast" sold in Southern California than all other kinds put together. If not sold by your dealer send us $3.50 and we will send a 100 lb. sack, freight prepaid within 300 miles.

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White Wyandottes

My San Jose Winnings: 1st, 2nd and 3rd Cock; 1st Cockerel; 1st, 2nd and 3rd Hen; 1st and 2nd Pullet. The above winnings were made out of ten entries.

Box 60, R. No. 1 Mrs. C. D. Hubbard San Fernando, Cal.

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EGGS FOR HATCHING—WHITE LEGHORNS—MITCHELL STRAIN

Large birds, heavy layers, bred for highest utility only. Order book now open for season 1909

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—WHY?—

Do All Prosperous Poultrymen Use

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Our Catalogue A Will Tell You. It Is Free.

Jubilee Incubator Company ***Sunnyvale, Cal.***

Profit in the Poultry Yard

By Mrs. Frank Metcalf

We solicit short articles of a practical nature from the fancier and utility breeder, giving their experience with poultry. All inquiries pertaining to feed, management, disease and its prevention will be answered through these columns.

ORGANIZE.

I ENJOYED a very interesting call from some ladies from La Habra recently, and one of them seems to have such good luck with her chickens that I must tell you about her.

They have large runs, and separate into 25 hens in a lot, and keep corn in the ear and dry mash before them all the time, and from 200 hens were getting $80 worth of eggs a month, while the feed cost on an average $5 a week. They have about 40 acres of land, but find the hens do better penned up in small flocks than at large, and their coops are of the simplest description. They are made mush-room fashion, of shakes, doubled over so as to leave no cracks, and are set up on legs so the wind blows freely under the birds. They are moved often, and sprayed inside, which can be easily done, as the coops can be tipped over sideways. They believe this method has many advantages over the house that is built to stand in one place, and as they have no sick birds their method is surely successful.

Some difficulty was experienced in marketing the eggs to good advantage, and their visit was partly to discuss some better way of reaching the consumer. But as time was too valuable for them to market directly to customers they sold to grocers. Could these people supply some hotel regularly, I mean could some hotel be found that would take these eggs regularly, these people would be very glad to furnish them, but so far, they have not found such a customer, and the plan suggested at the Poultry Meeting, that of organization on the part of the producers, and united effort to get at the consumer in the cheapest and most convenient way, is the slogan of egg farmers at present.

THE CHICKENS' KETTLE.

Until one keeps a kettle on the back of the range into which every little eatable scrap is thrown, one never knows how much good chicken feed goes to waste even in a small family.

There are potato peelings, scraps of meat and gravy, bits from the table, little dabs of sour milk, canned fruit, etc., and even the settlings from the dishwater make up a foundation for a mash that is highly relished by the biddies. And of course, whatever is relished. helps out the egg basket, so this form of economy certainly pays.

All eggshells should be carefully dried, and crushed to feed the hens, and when mixed in the kettle with other things will not teach egg eating.

Cold pancakes, and old biscuit which cannot well be used in any other way soak up nicely here. In fact there are so many scraps after the habit of saving them has once been fixed, that one wonders how one ever got along without it. Then if placed on the back of the range it is warm by the time breakfast is ready, and the biddies like that these damp cool mornings.

I use a plenty of black pepper in the mash these mornings, and so far have not had a sick bird on the place.

Chickens must have a little salt occasionally, or they will go to eating each others' feathers, so season the mash sometimes with salt.

I don't have material for a mash every day, even with saving every thing, but about twice a week I do.

Talk about saving, did you ever hear of the old lady who wouldn't allow guests to rock, "because it wore out the carpet so?" I was well acquainted with her but don't think our kettle quite so "near" as that.

One has some funnny experiences sometimes. A man once wished to get some late hatched R. I. Red pullets of me. I asked a very low price for them, and he asked me to catch them so he could look them over a little closer—R. I. Reds being very new and scarce at that time.

He looked them over, after I had chased around in the snow an hour to catch them, then offered me some "nice Plymouth Rock cockerels for them pound for pound" and seemed quite hurt because I couldn't deal that way. Frank never got through guying me about that "sale."—Mrs. Frank Metcalf.

PRESERVING EGGS.

Probably the water glass method of preserving eggs is preferred since its effectiveness has been so fully proven. It is however slightly more expensive than the other methods, especially where one is some distance from the market where water glass, sodium silicate, may be secured. For the benefit of all we give the following four methods of preservation.

Eggs to be stored should come from hens that have no males running with them; should be perfectly fresh and clean, for filth of any kind adhering to the egg will prove the medium through which the other eggs will become tainted. A dry, moderately cool cellar is the best place to store them.

Water Glass.

Take ten quarts of water which has been previously boiled and add to it one pint, or some prefer it stronger, even a quart, of water glass. When fresh eggs were used however and put up in June they were in excellent condition the following March with the weaker solution. Water glass varies in strength, and one must be guided by the thickness of it. If very heavy like thick honey less is required. Mix while the water is hot. This may be placed in a jar or tub and the fresh eggs added from time to time, always being careful to have at least two inches of the solution over the eggs.

Lime Water.

Another good preservative may be made as follows: 3 gallons of water, 1 pound of salt and 1½ pints of finely slaked lime. Mix thoroughly and allow the solution to stand a day or two and then remove the clean liquid by dipping or by means of a siphon. The clear liquid is then put into the vessel in which the eggs are to be kept and the eggs added from time to time.

White Rocks

Gutting's Superiors **Bred to Lay**

Again prove their superiority by winning all first prizes at the 20th Annual Show of the L. A. County Poultry Association. Send for circular giving prizes won and prices of stock and eggs. Buy eggs from prize winners and raise prize winners.

E. Gutting

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All dealers sell it. Ask for No. 2 Fine size especially manufactured for chicks. We have something new for poultrymen. Write for sample.

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Quality S. C. White Leghorns, Mammoth Imperial Pekin Ducks, Golden Sebright Bantams, Black Tailed Japanese Bantams. All prize winners this season. Write for prices.

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2,000 Laying Hens

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S. C. White Leghorns and Barred Plymouth Rocks

We can fill orders promptly from our selected matings of utility bred stock, at $5 per 100, $45 per 1000. Our prize winning Leghorn, $2 per setting of 13. Won all first and all but one second, also silver cup for best pen at last Chutes Park Show.

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A Talk on Hatching of Chicks we want to send you this Free. Send name and address on a postal to San Jose Hatchery 395 E. St James St. San Jose, Cal.

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THEY PAY
At Every Pop
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Bran or Salt.

Either one of these methods is reliable, but it must always be remembered to have at least two inches of either the salt or bran above the top layer of eggs.

Cold Storage.

This is doubtless the best method of all where it is possible, but owing to the limited number of storage plants it will be necessary to resort in many cases to one of the previously mentioned methods.

FOOD FOR LAYING HENS.

The hen requires more kinds of food than a cow or a hog. The cow needs no animal food; the hen does. The hen gives more consideration to cleanliness of the product than the cow; she seals it up in a shell of lime to keep it clean and she therefore must have a liberal supply of mineral matter. All food furnishes a certain amount of mineral matter, but not enough to supply all the shell material when hens are laying heavily.

What foods should they be fed? They should have grain; but grain alone won't do. What will happen if the hen eats nothing but wheat? Remembering that she puts nothing into an egg that she does not eat, that an egg contains about one-fifth ounce of fat and that if she ate nothing but wheat she would get enough fat for three or four eggs a day and about enough protein for half an egg a day, the thing that will happen will be that she will refuse to make eggs. The hen does not adulterate her product, otherwise she could fill up the egg with surplus fat like some people make butter out of spurious oil or beef fat. She will make an honest article or none at all. The point is that the hen should have such foods as will furnish the necessary food elements in proper proportions; in other words, she should have a balanced ration. There are different ways of balancing the ration. For instance, if the hen has access to wheat, to clover or kale and to grasshoppers, angleworms and grit, she will balance her own ration. She will eat a little wheat, a little clover and a few grasshoppers or angleworms, and eat enough of each to furnish the egg-making elements in right proportion. An occasional feed of corn or oats in place of wheat would improve the ration.

A hen is said to have the capacity of laying 600 eggs and no more—a few in her first year; from 320 to 375 in the next three, and the rest from the fifth to the ninth inclusive.

PETALUMA CHALLENGE CUP.

In the account of winnings of the Petaluma Poultry Show the Cultivator recently made the winner of the $50.00 challenge cup as Lippit & Lippit. As a matter of fact the cup was offered by Lippit & Lippit of Petaluma and was won by Mr. Frank E. Baldwin, the White Leghorn specialist of San Jose.

PIGEONS FOR PROFIT.

In starting a loft of squab breeders it is well to settle the birds all at one time, so they will quickly get down to breeding operations.

A young hen that is not full grown can not be expected to raise large squabs; and, even if she does, a few nests will prove such a strain upon her that the possibility is she will collapse, or probably next year become a non-layer.

There is no truth in the theory that

Coulson's Special Dry Chick Food

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COULSON'S SPECIAL DRY CHICK FOOD, during the five years it has been on the market has justly earned for itself its great reputation as a life-saver for little chicks by its special adaptation to their needs.

THE UTMOST CARE is observed in the selection of each of the dozen or more articles composing this unequalled feed; tender seeds, cracked grains blown free from dust, steel-cut oats, tiny pieces of dried meat and bone, willow and pure bone charcoal, are combined with other very necessary ingredients; every article being selected with special reference to its quality, strength, and desirability for the needs of the young chick.

FOR YOU TO BUY the many different articles composing Coulson's Special Dry Chick Food is quite impracticable; you could not be certain as to their quality for one thing, and the high cost of certain of them when purchased in small lots might lead to their being left out to the detriment of the chick.

TO MAINTAIN the high reputation of COULSON'S SPECIAL DRY CHICK FOOD, nothing is left undone to make it absolutely the best feed that can be made for the little chicks.

COULSON'S SPECIAL DRY CHICK FOOD can be fed exclusively to your little chicks for the first six weeks, at a cost of about four cents (4c) each; and what is of still greater importance, it will do all that can be done in the way of feed to bring them through that critical period of their lives in full health and vigor.

TO RAISE EVERY CHICK you hatch; to have fine, large, healthy chicks; to have chicks that will stand up and crow when eight weeks old; to raise chicks that you will be proud of, FEED COULSON'S SPECIAL DRY CHICK FOOD, THE LIFE SAVER.

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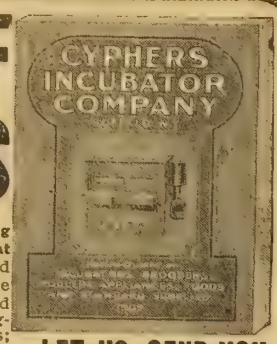

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Are now equipped with a moisture guage that will accurately register the moisture; relieves the operator of all guess work and assures better hatches than ever.

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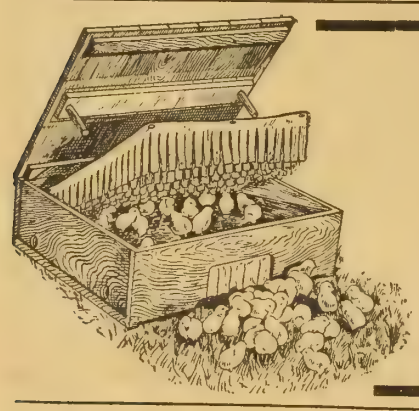

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So. Cal. Agents for Petaluma Incubators and Brooders and Midland Poultry Food.

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different colored birds mated together will give better stamina. The same theory was used some years ago in favor of the dunghill fowl.

When the birds are off their feed and sit about huddled up, with their feathers loosened, they will probably be found a have a prominent breast bone, and to be suffering from indigestion.

Squabs can be profitably raised on any farm located near a market.

When entering the loft, always walk slowly and make no quick movements.

When pigeons have their liberty they gather considerable weed seeds. In the crop of one bird killed at nightfall were found nearly 4,000 weed seeds, and the crop was only partly filled.

Pigeon-pox is caused by protozoa, and is more apt to appear in damp quarters and during wet, foggy weather. Protozoa, or fungi, multiply rapidly where there is moisture, while bacteria increase faster in heat.

The difference between chicken and pigeon-pox is that in the former the ailment is generally confined to the chicken's head, while on pigeons the disease will travel from the head down the neck, over the under surface of the body, and on the inner side of the wings and legs.

The fact that the squab business can be conducted in a very limited space, and that the breeder of squabs can conduct his little business without interfering with his regular work, makes squab raising one of the little side industries which may be made to amount to a princely sum in the course of a year.

When you pluck squabs that are too old, and dress them, and plunge them into cold water to plump them, their skin is not smooth and pleasing to look at, but has the appearance of goose flesh and shows where the feathers were pulled out due to the fat, which is the valuable part of the squab, having been absorbed into its system as soon as it commenced to exercise.—Orffs.

TURKEYS, DUCKS, GEESE.

Remember the breeding toms are half the flock in the spring and keep the best for that purpose.

When buying new stock to improve the flock, be sure that it is from a hardy family and not from an ancestry afflicted with disease.

Although corn is a fattening food and breeding turkeys should not be very fat, a fair amount of that grain should be fed to supply heating elements to the body.

Charcoal is as good for turkeys as it is for hens and a supply of it where the turkeys can get at it at all times will do much to prevent stomach and bowel troubles.

Never allow the turkeys to roost in the chicken house or to eat with the hens. They must be kept separate or good results cannot be obtained from either turkeys or fowls.

Geese should have principally dry grains of which corn, wheat and oats should form the greater part during the winter time.

Although small ducks should not be bred from, the extremely large ones do not prove as prolific as those which are simply rather above medium size for the breed.

Four ducks to each drake in the cold months and five and six in the warmer months is the proper proportion and twenty-five or thirty may be penned together with satisfactory results.

Toulouse, Embden and White Chinese are the most popular geese among America's poultry keepers. The other varieties are good, however, and all geese are profitable if properly handled.

If early ducks are to be most profitable, the first eggs must be set in February, and that means that the breeders should now be mated up and the food should contain more beef scraps.

A good mash for breeding ducks is two parts bran, one part corn meal, one part cooked mashed vegetables or steamed green cured clover and about ten per cent of high grade beef scraps by bulk, the whole mixed together dry and moistened with milk, skim milk or water.

WHITE CHINAS.

China geese are the most prolific of layers and the feathers are much softer and finer than those of any other breed; are as soft as any duck feathers and yield an abundance of them. White China geese are very gentle and can easily be made as great pets as a cat or dog; are splendid watchers in the poultry yards, the slightest unusual noise is soon told abroad by their noise, which by its tone will enable one to know whether anything is wrong or not. I have imagined that the White China geese were the ones that saved Rome.

They often commence laying in November and continue right along until June. I have been raising them five years, and shall always have a flock of them as long as possible. Aside from their value from a practical financial side they are very beautiful and graceful, called by many not only the Leghorn of the goose family, but White Swan geese. They are admired by everyone; many in passing stop just to admire and ask about them. They are very attractive, and admired not only at home, but in the show room.

The best poultry food is that which sends the hens to their nests every day.

The feed is important, but it isn't all. The hen house needs constant care.

Board floors are better than wet ground but dry ground is best of all.

The best poultry men on most farms are women.

One well fed hen is better than two half starved ones.

POULTRY QUERIES.

Hatching Turkeys.

When do you think is the best time to hatch turkeys?—W., Chino.

The best time to hatch turkeys is as soon as the rains are mostly over, and before the weather becomes hot and dry. Green growing things are necessary for the young poults, therefore the spring months are considered best. Much depends upon the use to be made of them, however, for if breeders are wanted, the earlier one can get them out of the shell the better, while if only for market purposes, they may be hatched at late as one pleases.

Here turkeys may be raised the year around, but the extra care needed during the rainy season scarcely justifies one in attempting to crowd them too soon. Unless, as I said before, breeders are wanted, or show birds to be raised.

Some of the best turkey raisers feed very lightly for a while after February on purpose to retard the laying, so as not to have the poults before the first of June, then later feed heavily to keep up the laying as long as possible, but a hen that has laid late in the fall, will be much exhausted and will be long getting in shape again. For the late poults shade must be provided, or sun-sickness will result. So April and May turkeys should be the best of the year, for market purposes.—F. M.

BROWN EGG AND WHITE.

It is a curious fallacy that the brown colored egg is necessarily superior to the ordinary white egg, a belief which has led to the practice of artificially coloring the latter in imitation of the former. It is doubtful whether the color of the shell bears any relationship to the nourishing quality of the egg. As those who rear poultry know, it is merely an indication of the strain of the laying bird. Still, a preference is very commonly shown for the brown or coffee-colored egg; the color is attractive, and, led by the eye, the choice is very generally made in favor of what is regarded as the richer and superior article. The practice of deception is thus encouraged. The shell of the white egg is stained in the simplest possible way, perhaps by immersion in a decoction of coffee berries or by means of an aniline dye. This resource may satisfy the eye, but, after all, there is probably not the slightest difference from the nutritive point of view between the naturally brown colored egg and the white one.

There is most probably, however, an important dietetic difference between two eggs, the yolk of one of which is very pale yellow in color and that of the other a rich, almost reddish color. It is a notorious fact that the country-produced egg may usually be placed under the latter description, while the egg produced by the hen who is under an unhealthy and limited environment shows an anaemic color, generally a very pale yellow. The eggs of wild birds, as for example, the plover, show a yolk of rich reddish color.

The substance which contributes color to the yolk of the egg is iron, just as it is iron which gives color to the blood, and there seems to be little doubt that the iron compound in the yolk of the egg is of similar nature to that of the blood. It is easily assimilated and eggs are regarded as a suitable food for the anaemic person, as they present a concentrated and generally easily digested form of nutriment rich in iron. The iron compound of the egg has, in fact, been termed a "hamatogen," because it is probable that from it the blood of the chick is derived. The amount of iron in the yolk of an egg would appear to increase with the intensity of the color, and there can be little doubt that the maximum is reached in the richly colored yolk of the egg produced by a fowl existing in healthy surroundings, for then its processes of nutrition would be working under very favorable conditions. As an article of diet, therefore, the egg should be judged, not by the color of its shell, but of the yolk, which should be of a rich reddish rather than of a pale yellow color.—Orff's.

FOR "CROPBOUND."

"Cropbound" in turkeys is universally caused by eating too freely of dried grasses, thus forming a hard ball in the crop. Pull out a few feathers near center of crop on line with breast bone. With a very sharp knife make incision one inch long of outer skin. Push this lightly aside. Make incision three-quarters of an inch long. Remove contents with finger. Be careful to see that every particle is removed from passage way to gizard. Take three or four stitches in the crop, make each one separate, same in outer skin. Use fine white cotton thread. Place bird in dry coop; feed lightly on soft food for at least a week or ten days. After turning out provide plenty of good grit. This treatment may seem a little severe, but it is the only way to save the birds.—Successful Farming.

Have you a dirt floor in the hen house? Then shovel out about two inches of it next fall and put in fresh earth. The old dirt is worth a lot on the garden, and it's too full of vermin to be healthful in the hen house.

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Inglewood, Cal., June 2, 1908. My 612-egg Success Incubator runs more evenly and hatches better and stronger chicks than any of the other makes I have. I will sell off all others aud use the "Success," they are the best.
CARL MATSON.

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ANNOUNCEMENT

We stand for strong, healthy chicks and will spare no efforts to secure them. Our aim is quality rather than quantity. From the eggs we hatch we want the best chicks that can be secured. We shall limit our capacity to 12,000 eggs—six of our 2,000 egg incubators.

Three factors in securing chicks are—the breeding stock for hatching eggs; the incubator and the man to do the work.

We take great care in selecting our breeders from which we secure eggs. The stock must come up to our standard. Our Mr. Langenschwadt attends to this. He is a practical poultryman.

The incubator we use has been tried out and demonstrated for several years past what it can do. We consider it the best we have come across so far. The success poultrymen are having with chicks it hatches is proof sufficient.

In Mr. Henry Langenschwadt, our manager who attends the incubators, we have a man whom we are satisfied understands his business and he is demonstrating this by results.

At present can furnish following breeds and shall add to them as we can secure stock. All from utility stock:

White Leghorns we hatch regularly in two grades—No. 1 and special. Will hatch lower priced to order but cannot recommend them.

No. 1. White Leghorns: $9.00 per 100; $25.00 for 300; $40.00 for 500; $75.00 for 1,000.

Special White Leghorns: $12.00 per 100; $34.00 for 300; $55.00 for 500; $105.00 for 1,000.

Brown Leghorns, $10.00 per 100. Black Minorcas $12.50 per 100.
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Lots of 50 add one cent each. Less than 50 chicks do not recommend to ship.

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Prize winning stock never beaten at any poultry show.
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OFFERS
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Eggs at $1 to $2 per Setting
Order stock early and get advantage of best selection.

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ALL SIZES

150,000 feet of this shipment is second-hand pipe, practically as good as new, and is now on sale at a big discount by the Adams Pipe Works, 2025 Bay street. Sizes and prices: ¼-inch 2 cents per foot; ⅜-inch, 2 cents per foot; ½-inch, 2¼ cents per foot; ¾-inch, 3 cents per foot, 1-inch, 4¾ cents per foot; 1¼-inch, 6 cents per foot; 1½-inch, 7 cents per foot; 2-inch, 9¾ cents per foot; 2½-inch, 15 cents per foot; 3-inch, 19 cents per foot; 3½-inch, 24½ cents per foot; 4-inch, 30 cents per foot.

Oil well casing prices and sizes: 2-inch. O. D. 7 cents per foot; 2-inch, I. D. 9 cents per foot; 3-inch, 13½ cents per foot; 3¼-inch, 16 cents per foot; 3½-inch, 17 cents per foot; 4-inch, 20 cents per foot. All pipe is carefully inspected, new couplings and new thread are put on every piece, every joint is guaranteed to be first class, serviceable pipe. Mail orders promptly filled. To reach the Adams Pipe Works in Los Angeles, take car marked Pacific Boulevard, starting east on Seventh street from Broadway. Ask conductor to let you off at Bay street and go east half a block. Phones, F1917, Broadway 1264.

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Balled in moss and leaf mould. Need less water and can be planted later. Uniform size and being balled have fine roots. Fine to grow. Boxes of 100, sample lot, in flats and protected tops, only $1.60. Try them and you will use no other. Write for circular and special prices on large lots.

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Irrigation and Forestry

UNDERGROUND WATERS OF SOUTHERN CALIFORNIA.

IN THE intensively cultivated horticultural districts which have made Southern California world famous, ground-water development for purposes of irrigation has been increasing in importance for a decade or more. Many of the largest irrigating systems, which a few years ago obtained their water wholly from mountain canyons, now depend on their subsidiary pumping plants to keep up the supply during summer and fall, and in a number of places pumped or artesian waters are the sole dependence of thriving communitites. So extensive has been this development that a conservative estimate indicates the proportion of underground water to surface water now used during the late summer period after dry winters, when the surface supply is lowest and the pumps are busiest, as three or four to one.

Reports Published by Geological Survey.

In the summer of 1903 W. C. Mendenhall, of the United States Geological Survey, began field work on a series of studies of the conditions under which the ground waters of Southern California occur, as a result of which five reports have already been prepared. The earliest issued were three (Water-Supply Papers Nos. 137, 138 and 139) relating to the coastal plain, which lies between the Coast Range and the Pacific Ocean. These papers did not embody close geologic determinations, but were rather records of the developments of underground waters which had taken place at the time of their issue. A fourth paper (No. 142) on the San Bernardino Basin, was more complete and critical and contained such significant geologic and economic information as had been brought out in the course of a rather careful general study of the valley. The fifth of the series has just been issued as Water-Supply Paper No. 219.

A Report on the Foothill Belt.

This latest report presents evidence and conclusions which will be of value to water users in the important region that lies along the south base of the San Gabriel Mountains from Cucamonga westward to Los Angeles. The belt embraces a small area in the extreme western part of San Bernardino county, but it lies for the most part within Los Angeles county and is conveniently and appropriately designated the "foothill belt.'

The foothill belt comprises only about 450 square miles of lowlands, but between 55,000 and 60,000 acres (exclusive of the municipalities) are under irrigation, a large proportion being in citrus fruits. This irrigated land ranges in value from $200 to $2000 an acre, and may be conservatively estimated to be worth $20,000,000 to $25,000,000. In the same area there are about 40 flowing wells and nearly 400 pumping plants, representing an investment of at least $1,000,000 in wells and plants alone. It is estimated that the pumping plants supply the equivalent of 80 to 100 cubic feet of water per second, continuous flow, used largely for irrigation.

Source of Ground Waters.

The conditions that affect the occurrence and circulation of ground waters are discussed fully in Mr. Mendenhall's report, and the ground-water districts and irrigation enterprises are described in detail. Concerning the source of the ground waters Mr. Mendenhall says:

"The statement has frequently been made that the underground waters are just as dependent as the surface run-off on precipitation within the local contributing drainage basins, but the tenacity of the oft-asserted belief that these subterranean reservoirs have some other source than local rainfall makes it desirable to repeat this statement with emphasis. Each of the important subterranean basins in Southern California is supplied exclusively by the water which falls upon its surface or flows into it through some tributary stream. Any other hypothesis, as, for example, that the waters from the distant Sierra or the Colorado River or the Pacific Ocean may, by underground channels or by seepage, reach the San Gabriel valley or the Pomona neighborhood, is erroneous, and conclusions based on it are wrong and lead to a false policy in the utilization of the ground waters."

Maps of the Region.

All of the foothill belt and many square miles of mountains north of it are shown on three of the United States Geological Survey topographic sheets—the Cucamonga, the Pomona, and the Pasadena—drawn on a scale of about 1 mile to the inch. On these maps as bases all the information in regard to the water supply of the foothill belt that is capable of graphic presentation has been assembled, such as lands irrigated, chief pipe and canal lines of the various irrigating companies, pumping plants, artesian wells, a few of the domestic wells, ground-water levels (indicated by hydrographic contour lines) and artesian areas past and present.

RURAL TELEPHONES.

Rural free delivery, good roads and the rural telephone, as benefits to the farmer, can hardly in equity be compared, as they are not in competition with each other. But the rural telephone is already out-stripping both of these in the number of farmers it is reaching and the ways in which it is benefiting them.

The low first cost of the rural telephone puts it within the reach of all. On lines less than 12 miles long the cost is $4.94 per mile, not including poles, the latter to be cut and furnished by the farmer. On lines over 12 miles long the cost is $6.87 per mile, same arrangement about the poles. The cost of the telephone set complete is $13.00. This represents standard "ground" one wire construction and long distance telephones. It is a simple matter to build the line and no operator is required. The annual maintenance expense is not over 75 cents for renewal of dry batteries. The farmer can run the line to town and there connect with the town exchange and long distance service.

The rural telephone in sickness or fire or other emergency enables the farmer to summon immediate aid. It gives protection to the woman alone on the farm. It saves time in doing errands. It is used a great deal for social intercourse, everybody being able to "get in" on the line at the same time if they so desire. The farmer learns the market prices and so gets more for his products. It is customary to furnish weather bureau reports each morning. For instance, at nine o'clock the telephone company in town gives three long rings over each rural line entering its exchange and those who desire may, on taking the receiver down, hear the weather report read. Prevailing market quotations are also often given out at this time.

There are about seven million farmers in the United States; of these more than two million have already adopted the telephone and its use is being rapidly extended.

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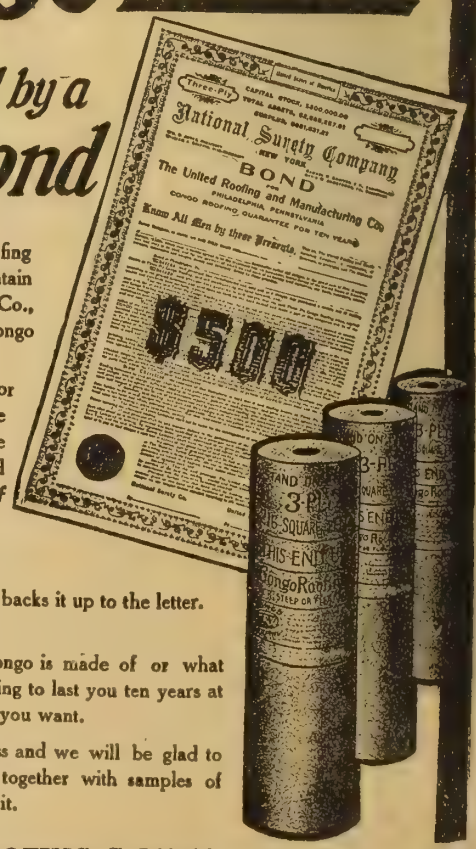

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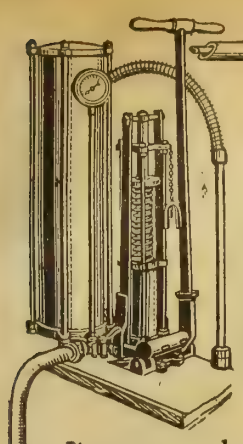

See That Patent spring?

It means much to the fruit grower who realizes the need for effective spraying, but deplores the ordinary pump with its exhausting labor, its unsatisfactory spray and its continual clogging and bother. This spring is found only in

Bean Magic Spray Pumps

It would be found in others, but the Bean Patents prevent it. This spring divides the work, permitting the operator to do half the work at each stroke of the handle. And he works against but half the pressure indicated on the gauge. It saves just one-third the labor. Two sizes of Bean Magic pumps; both have Bean patent spring, non-clogging ball valves, and other exclusive features.

Our illustrated catalog No. 21 describes ten sizes of hand pumps, and contains much valuable spray information, and formulas. Catalog No. 22 describes Power Sprayers. Both books sent free. Write for our special offer; state number of acres and kind of fruit.

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French Prune, small trees, on Almond.
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Blackberries, Mammoth and Rathburn, 75c doz.
Phenomenal Berry, London Red, Golden Queen, 75c doz.
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Asparagus Roots, Barrs, Palmetto, Columbia, 1 yr., 30c doz.
Walnuts, Fruit Trees, Flowers.

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Trees French Prunes on Peach, and Apricots, Muirs and Tuscan Clings, and many other varieties of Peach Trees; all fine budded stock. Large stock of all the leading varieties of Apples, grafted on whole roots and free from all pests. Also a fine stock of Cherries, Pears, Plums, etc. Send for price list.

A. E. SCHEIDECKER **SEBASTOPOL, CAL**
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Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Spineless Cactus.

What is your opinion of spineless cactus as feed for cows? Will it grow well on good, strong land without irrigation?—F. D. S., La Habra.

As I understand the spineless cactus it is not recommended for soil like you possess. Surely on your land this wet season a good and valuable crop can be grown of hay or of sorghum or something less costly than cactus. The first cost of the plant at present prices would mean a large sum. The leaves are eaten and that means the plant. If used for fodder it could not be used to propagate more plants so that the cost of enough to grow feed for even one cow would probably buy several seasons' feed for her. Any crop that can be sown is always less expensive than one that must be planted by hand like shrubbery. As I understand it the cows are not allowed to browse on it but it is cut and hauled to them. Do you want my advice? Well, if I was going to try it, I should buy $5.00 worth of cuttings and try to grow from them. These would be enough to test it and then if I found it good I should hope that so many others had bought it also that I could buy more cuttings at a more reasonable price. That it will grow and that the cows will eat it is assured, but will it pay you to grow it? I cannot decide that question for you. I know it would not pay me to do so.—M. E. S.

Feed for Cows.

How can we provide an ample supply of good hay for the coming year? Have some alfalfa and much bermuda plowed, some sown to barley. A field almost ready has a portion quite tinged with alkali. Would it be advisable to seed with barley and field peas, or with oats and peas, trusting the peas to provide hay should the barley not do well? Would there be any difficulty in "curing" the barley and peas together? Or would it be better to seed simply barley now and the peas or sorghum or corn later, after the barley is cut for hay?—M. R., Fresno.

Why not use some gypsum on the alkali land? Four hundred pounds to the acre will keep it from corroding the stems at the surface of the earth if it is only tinged with alkali. Corn and sorghum seem sensitive to alkali. I do not plant them if the land is at all impregnated with it. Barley will stand considerable and sugar beets more than any other thing I know of, excepting bermuda grass. Peas and oats do better together than peas and barley. The peas come first and grow rapidly and the oats come on later; when the barley is sown with the peas it comes first and crowds the peas badly. There is no trouble in cutting or curing the crop; it dries readily. We cut it when the cereal is ready without regard to the peas. We are anxiously waiting for the ground to be dry enough to put the peas in on a piece. We will plow the land with the pony gangs, using four horses, then plant the peas with the corn planter, broadcast the oats and harrow it in lightly, aiming to put the peas about four inches deep in the loose soil and planting them four or five seeds every three or four feet, in rows three feet apart; this will take about 20 pounds to the acre, and then thirty to forty pounds of oats will be used. The peas are the common green pea. The red or black oats grow better than the white oats for this purpose.

Sorghum or Indian corn come as the summer crops on the same land, and either can be sown any time from April first to July and give abundant yield.

Do not mix the cow pea with the common pea; the cow pea is a bean and only does well in the summer in this valley. For a hay crop why not use sorghum? It cures very well with us. We plant it in drill rows in April, and when it is four or five feet high cut it with the mower, haul it away and dry it. The mower is set high enough not to cut below the first joint. The field is then irrigated and cultivated until the sorghum grows up when it is again cut. Usual seasons it will give three cuttings and a large amount of fall pasture. The hay is liked by all the stock, and with the cows ten pounds of it with ten pounds of alfalfa hay balances up their feed very nicely.

Of course we have nothing we can grow that will pay for feed equal to alfalfa; then comes Indian corn; then I try to fill every corner I can with pumpkins. They seem to grow in the night here. The heavy crook neck Cushaws are the most profitable; we have them good and sound now, long after the big round fellows have all perished.—M. E. Sherman.

Scale on Berry Bushes.

I have about 1½ acres of nice young raspberries, planted last year, but a great many of them are badly affected with white scales. How shall I exterminate the scales?—J. P. J., Ventura.

Kerosene emulsion will destroy them. It can be bought in concentrated form from almost any prominent seedsman for about 25 cents per gallon and is ready for use by adding 25 to 50 parts water to one of emulsion, according to what is sprayed. Plants should be dormant when sprayed and for raspberries 1:40 would be strong enough. If it were my case I should spray twice at an interval of two weeks.—Q. A. L.

Black Scale.

Enclosed you will find leaves from the Veronica which are infested on the under side with small brown insects resembling aphids. Please give me name and a remedy. Will Veronica bear pruning?—M .D. W., Alameda.

If there were any aphis on the leaves when they were mailed, they were crushed and destroyed in the letter. But there are abundance of the young of black scale and the accompanying fungous growth which is induced by such insects. The scale is easily killed by spraying with kerosene emulsion. The Cultivator has given instructions regarding its mixing, or if you want only a small quantity it may be had of any seedman and may be diluted and applied through a spray pump according to di-

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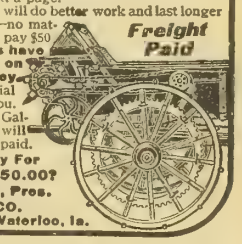

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rections. It will stand a dilution of 30 to 40 gallons of water to one gallon of the mixture which you will buy.

Suckering Date Palms.

Have several hundred date palms 5 years old around edge of fence, the major portion being males. Some of these males have as many as ten suckers, some of which are very large. I have pruned these suckers off even with the original trunk, leaving original palm intact. Will you kindly advise the cheapest way of preventing these suckers coming out again without injuring the original palm? It is entirely too expensive to take them off with a chisel as in the case of a female.—Subscriber, Phoenix.

Mr. Rixford of San Francisco answers: At the age of ten to twelve years the date palm usually ceases to throw out suckers, therefore in this case there seems to be nothing to do but to be patient and let nature take her course.

A few days ago the writer saw a large date palm at Modesto, on which the offsets had been suppressed by cutting them off near to the trunk, without the use of a chisel. The old stubs were three or four inches in length, but all dead, though not ornamental. In this case it was unfortunate that the palm had ceased to sucker, as the fruit was two and a half to three inches in length and an inch in diameter—one of the largest ever seen in California. The season at Modesto is not warm enough nor long enough to ripen the fruit; so that by constantly suppressing the suckers the chance to propagate, perhaps what would be a valuable variety, is lost for ever.

Grafting—Colure.

I have a vineyard of Mission grapes nine years old. Would like to graft to other kinds. Can it be done and how? I also have peaches same age and would like to change. Can this be done? Should Muscats be sulphured in the Pomona valley? If so at what time? I sulphured mine last year at blossom time and bunches did not set full but were long and ragged. Was it caused by sulphur?—A., Pomona.

Your first question was practically answered by Mr. Mills two or three weeks ago. In theory a vineyard may be grafted but in practice it does not work well and the best way will be to uproot and plant new vines. Your second query may be answered in the same way. That is, peach trees nine years old have so short a lease on life that it would not pay to cut off tops and graft to plums or other fruits. Muscats should be sulphured to protect from mildew, which may be done soon after leaves start in the spring and occasionally thereafter as may be needed. The sulphuring was not the cause of your straggling bunches of grapes, neither will lack of it make the trouble any worse. The cause was probably colure, which is a disease or a physical condition which is not fully understood and no remedy is described for it.

Legal Queries

Edw. L. Payne, attorney, 301-304 Douglas Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Payne is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Right of Way.

I bought a piece of land and in the deed was a clause calling for private right of way 20 feet wide along the east line so my neighbor (back of me) could get out to the public road.

He has since bought a piece of land so he has a strip 500 feet wide clear to the public road, so I want to fence my place and expected to put a gate at each end of the 20 foot strip, so he can travel that way if he wishes.

Can I put up the gates and does he have to shut them? And having land of his own clear to the road does that make his private road over me null and void?

If a man has a lot in town can he plant it to blue gums without consent of surrounding lot owners, and if he plants and there is no objection for a year or two and then someone buys a lot or a present owner kicks, does he have to chop them down?—G. B., Nordhoff.

If a private right of way is reserved by the deed conveying the land you mention, the effect is the same as though you had granted to the party for whose benefit the right is reserved a right of way, and you have no right to obstruct his travelling along said right of way by gates or otherwise, unless such right was reserved to you in the contract or deed.

The fact that he has since bought a strip of land, which gives him access to a public road, would not change his right with respect to the way previously granted or reserved.

You have a right to plant trees upon your town lot, and adjoining owners cannot require you to remove those trees, but such circumstances might arise as would entitle an adjoining owner to damage because of overhanging trees or the extension of roots on to his property, and I cannot answer your question in full without having a more detailed statement of facts.—E. L. Payne.

Married Woman's Rights.

What are a married woman's rights to property in this state? Property purchased since marriage and by savings on the part of both, but deed to same in husband's name, he having died, leaving no will.—Subscriber.

Answering query of subscriber concerning married woman's rights to property in California, purchased after marriage, out of savings on the part of both husband and wife, but deeded to husband at the time of purchase, and the husband having died leaving no will, I would say that it would be necessary to have the estate of the husband administered upon by the proper court, and that after the payment of his debts, family allowance and the charges and expenses of administration, one-half of

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Foxtail for Silo.

I had thought of building a silo this spring and my idea was to fill it with the first cutting of alfalfa, which means principally foxtail. Can I cure that as silage? Will it be absolutely necessary to get a cutter and power, or could it be packed in, as it comes from the field? At what stage would it be best to cut it, green, medium, or well advanced? Would foxtail beards have any objectionable qualities after being made into silage?—Subscriber, Hanford.

Have the readers of the Cultivator ever tried siloing first crop alfalfa in which there was about 60 per cent foxtail? I am preparing to put a crop in as soon as it is ready so that I can use it for summer feeding. The whole San Joaquin valley is overrun with foxtail. It spoils all of the first crop hay. Thousands of tons of it are burned annually on account of the sharp beards that go through the jaws of the horses and cattle and it is a pest to every animal. I have skined sheep and found foxtail heads had gone clear under the skin and into the flesh. At the present time the whole valley is green with it and it is an excellent cow food until it begins to ripen, then it must be burned. If cut before the heads are ripe it will head again and spoil the next crop of alfalfa. Will not the heat and moisture of a silo soften the beards and make a good feed of it? There is enough of it burned annually to keep all the cattle in the valley if it can be utilized. I have seen a few horses who were able to handle it without its injuring their mouths and they invariably kept fat on it. I am going to experiment with it but would like to hear the experience of any one who has tried it.—B. F. B., Bakersfield.

Both the above are answered in Mrs. Sherman's article on Dairy Page last week.

Cow Eats Wood.

I would like to ask the cause of a cow eating wood. I have two cows and a yearling, loose in good sized corral. Feed dry alfalfa and citrons. They seem ravenous to eat wood, get hold of a lath or piece of board and devour it. What will stop them of the habit?—G. R. S., Santa Ana.

These cows need some rougher food to help in regurgitating their alfalfa hay. If you can give them a little coarse grain, hay or straw, or failing that some fruit tree wood prunings they will stop eating boards. I have sometimes given them bone ground up when they showed excessively depraved appetites.—M. E. S.

Gum Disease.

I send pieces of bark of different peach trees in my orchard. Please examine these and give explanation what to spray with and at what time.

Please advise me in regard to vines what to use to take off moss and keep in a healthy condition.

I've been taking your paper for a long time and find it a leading paper and wouldn't be without it. I would advise all of the growers to subscribe for the Cultivator.—Henry Barkema, Oleander.

Prof. Smith answered a similar question in last week's paper, page 138, to which the inquirer is referred, and in addition he now adds regarding this case: The samples of peach bark included with the letter of your correspondent from Oleander do not show anything specific as to the trouble with the trees. It is very probable, however, that this case may be similar to that which was referred to in a former query, as it occurs in a section which is subject to the same conditions.

In regard to removing moss from vines, I would say that the Bordeaux mixture will do this very effectively. —Ralph E. Smith.

Apple Troubles.

My Pearmain apple trees bloom full and set fruit which all fall off in a short time. They have been doing this for four years. The trees look healthy but die here and there by turning black at the trunk. The land is rich bottom land 18 to 20 feet. Can you tell me the cause and remedy?—C. M., Arroyo Grande.

No doubt your apples drop on account of mildew. This comes as a white covering on the young fruit and leaves. Your trees die, no doubt, from blight, the same as pear blight. The branches and trunk turn black as you describe. For mildew, spray with Bordeaux mixture before the leaves or bloom come out, and again shortly after the greater part of the blossoms drop. This spraying can be combined with the first Paris green spraying for codling moth. The blight can only be held in check by cutting out and burning all affected wood.—J. W. M.

Plums.

What is the best shipping plum to plant that will do well here? I am ten miles east of Fresno. The land is sandy loam. I want a large plum with beautiful color that is attractive to the eye. Would you favor such a plum as the Yellow Egg, which I am told canners buy and is also a fine shipper. I have had recommended the Wickson, Tragedy, Giant Hungarian, and others. It is my design to plant these trees along a ditch bank. They would be more out of the way if on the top of the bank. If cultivation is necessary, it would need to be done with a hoe. Would they do best on top of the bank or by the side of it? —W. J. P., Sanger.

Plant Hungarian prunes. If the ditch bank is situated along a water course, cultivation will not be necessary, in which case use Myrobalan roots. If no water is running along your ditch banks, cultivation is necessary.—J. W. M.

Concord Grapes.

What is the best way to plant Concord grape vines? I have been pruning them the way I think best but they don't bear well.—D. C., Los Alamos.

Concord grapes should be pruned long and grown on a trellis or arbor. Prune so as to leave canes of last year's growth two or three feet long or with five or six buds. At the base of each of these or near the base leave a short spur with two buds on last summer's canes. These will provide a long cane and one for a two bud spur next pruning time.—J. W. M.

Fertilizer for Potatoes.

I have grown potatoes on a rich sandy loam for three years. Am not situated so as to rotate crops and would like to know how best to fertilize to best advantage for this year's crop, also potatoes. Should I use complete fertilizer or will a potash be sufficient? Is not stable manure objectionable because of fungous troubles it may carry into the soil?—F. K. D., Compton.

In order to get the best results from the soil you must plan to keep up a supply of humus. If we allow the fear of fungous troubles to deter us from using stable manure it will inevitably result, after a time, in crop failure. I should prefer a complete fertilizer if I were depending on anything aside from stable manure, Potash alone would not be adequate any more than nitrogen alone or phosphoric acid alone. I should have little fear of fungous trouble from the use of manure if the seed was good and properly treated before planting. This refers to potatoes.—Q. A. L.

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WANTED—LADY THOMPSON, TEXAS, and A-1 strawberry plants, also Loganberry. State number and lowest price. None but first class plants wanted. Address, G. H. HOPKINS & SON, Burbank, Cal.

FOR SALE—BERRY PLANTS; LOgans, Giant Himalaya, Mammoth and Lucretia dewberries. Would exchange for rooted Tokay. A. P. HENNING, box 225, Cottonwood, Shasta Co., Cal.

FOR SALE—LOGAN, MAMMOTH, PHEnomenal, Himalaya, Blackberry, Dewberry; strong plants, $10.00 per thousand. Strawberries, $3.00 per thousand. GRIDLEY COLONY NURSERY, Gridley, Cal.

FOR SALE—BERRY PLANTS, BLACKberry, Dewberries $10.00 per thousand. Mammoth Logan, Phenomenal $1.50 per hundred. H. O. SORKNESS, Hemet, Cal.

FOR SALE—LOGAN, MAMMOTH AND Himalaya berry tips, ten dollars ($10) per thousand. F. O. B., Laton, Cal., ADELBERT COOLEY, Laton, Cal.

CLEARING UP PRICES ON ALL kinds of berry plants, pear on quince root, and nursery stock. State your wants. TRIBBLE BROS., Elk Grove, Cal.

FOR SALE—WELL ROOTED, HARDY, everbearing Raspberry plants, $10.00 per thousand. SUMMERS BROS., R. D. 36, Box 226, Los Angeles, Cal.

SITUATIONS WANTED.

A GOOD FLORIST, ORCHARDIST and nursery man, has experience in budding and grafting, also in drying fruit and poultry business. 55 years of age, married, no children, German, wishes a position on a country residence orchard or nursery as superintendent or foreman. Has resided in California about 18 years. References, under letter, A. S., Bureau of the California Cultivator.

MACHINERY.

FOR SALE—SEVERAL SMALL MOtors up to 5 H.P. Also some large size ones, both A.C. and D.C., new and second hand. See us for all kinds of electrical machinery. BAILLIE & BRANDT CO., 943 N. Main, St., Los Angeles, Cal.

FOR SALE—RENT OR EXCHANGE, boilers and engines, gas engines, pipe and oil well casing, pumps, all sizes and makes; get our prices before you buy. A. CANNADY & CO., 691 N. Main St., Los Angeles, Cal.

FOR SALE—25 and 21 H.P. DISTILlate engines, both high grade make and as good as new, at a bargain. MACHINERY EXCHANGE, N.W. Cor. Main and Bruno Sts., Los Angeles, Cal.

FOR SALE—MEHRING MILKING MAchine with extra parts and covered pail, all in good order. WM. H. BIRD, Box 6, Compton, Cal.

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FOR SALE—UNION GASOLINE ENgines for irrigating plants, both new and some gargains in slightly used. See us before buying. BAILIE & BRANDT CO., 943 N. Main St., Los Angeles, Cal.

FOR SALE—LARGE NO. 12 MANN'S green bone cutter, with pulley for power, good as new. $15.00 takes it. WM. MANTZ, Santa Maria, Cal.

TREES.

THE SANTIAGO FROSTLESS NURSERY still has some extra fine Eureka lemon trees, choice buds, but they are going fast. There are none better. L. F. THURSTON, Proprietor. Sunset Telephone 354 Orange. Address Santa Ana, R. D. 1.

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WALNUT TREES—3 YEAR OLD Seedlings from selected grafted seed of **Placentia Perfection.** Best and cheapest trees in market. G. W. SHERWOOD, Fullerton, Cal.

FOR SALE—LEADING VARIETIES PEACH and apple trees, good stock, bed-rock prices. GRIDLEY COLONY NURSERY, Gridley, Cal

GRAPE CUTTINGS.

FOR SALE—500 THORNLESS CACTUS (Mission) leafs for only 25c per leaf, worth $1.00; 5,000 Cornichon grape cuttings at $5.00 per 1,000; 500 large Bartlett Pears; 500 large Satsumas on Peach; 500 large Satsumas on Apricot; 1,000 Thompson Seedless vines, very large and fine; 1,000 Malagas, the very best and 100,000 other fruit and ornamental trees at very low prices.
H. L. BAUER & SONS,
737 S. Spring St., Los Angeles, Cal.
Catalogue free. Mention Cultivator.

CHOICE GRAPE ROOTS AND CUTtings. Thompson Seedless, Flame Tokay, Cornichon, Muscat and Red Emperor. Cuttings, price per 100, 50 cents; per 1000, $3.50. Price for rooted vines, Thompson Seedless, Flame Tokay, Cornichon, Red Emperor, Rose Peru, $3.00 per 100 and $25.00 per 1000. J. C. SMITH, Burbank, Cal.

FOR SALE—THOMPSON SEEDLESS and Zinfandel rooted grape vines—first class—$10.00 per thousand. GRIDLEY COLONY NURSERY, Gridley, Cal.

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FOR SALE—CALIFORNIA BLACK walnut seed in sack lots. Wanted: Mayette, Franquette and Parisienne Walnut scions, also Rupestris St. George, Rip. x Cord. x Rup. 106-8, Rip. x Rup. 3306 and 3309 cuttings, grafting size. Address FANCHER CREEK NURSERIES, Fresno, Cal.

VINES WANTED.

WANTED—A FEW THOUSAND MUScat, Thompson Seedless, and Malaga well rooted vines. IMPERIAL VALLEY NURSERIES, El Centro, Cal.

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REGISTERED BERKSHIRE AND POland China hogs, both sexes. C. A. STOWE, Stockton, Cal.

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FOR SALE—WHITE WYANDOTTES, Hayes "Bred to Lay" strain. Eggs for setting, $1.50 and $2 per 15, $6 to $8 per hundred. Hens, $1.50 to $3; cocks, $3 to $5; trios, $6 to $10. Discount of 25 per cent. on hens and pullets in lots of 50 or more. Write for particulars. F. E. JUDSON, Carson Heights Ranch, San Pasqual Valley, Escondido, Cal.

BUFF ORPINGTONS—BLOOD AND breeding tells. Five years careful selection for points and laying; results, first prize pullets last year and 50 per cent. egg yield during moulting season this year. Eggs, $1.00, $1.50 and $2.00. Special prices on incubator lots. E. G. WALL, 1920 Monticello Ave., Hollywood, Cal. Phone Hollywood 1943.

HOW TO MEASURE MOISTURE IN your incubator with one thermometer, blue print with table, 50 cents. How to predict night frost with two thermometers, blue print and blank, 60 cents, both for $1.00. CAPT. C. NIELSEN, Sebastopol, Cal.

SILVER CAMPINES, GREAT LAYers, non-sitters, beautiful fowls, splendid foragers. Recently imported from Belgium. Eggs for hatching $3.50 per doz. Write for circulars. E. SMITH, 3610 East First St., Los Angeles, Cal.

LIGHT BRAHMA, FIRST PEN, FIRST Cockerel at 20th Annual L. A. County Poultry Assn. show. Cockerels from same mating $3.00, $4.00 and $5.00 each. H. J. SHOW, R. 1, Santa Barbara, Cal.

WHITE ROCKS—SNOW WHITE, prize winning, bred to lay. Eggs $1.50 and $2.00 per sitting. W. E. B. SMITH, 820 Elm Ave., So. Pasadena, Cal. Phone Sunset, Main 2866.

HOUDAN EGGS, FINEST WINTER laying strain. Setting of 15, $2.00; 30, $3.75. Square deal assured. Order now. MRS. R. HEGI, Box 272, Dixon, Cal.

CHAS. E. SMITH—BREEDER OF Barred Rocks exclusively. Winners of the blue wherever shown. Eggs $3.00 per 15, stock for sale. GARDENA, Cal.

BLACK BEAUTY POULTRY YARDS—Some of the best S. C. Black Minorcas on the Coast. Chicks, $12 per 100; eggs from selected matings, $1.50 per 15, $6 per 100. MRS. A. F. FRESE, box 456, Dixon, Cal.

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FOR SALE—THIRTY HENS, 3 COCKS, thoroughbred Buff Orpingtons, $1.50 each. Come quick if you want any. LOUIS S. FLETCHER, Rose St., East Anaheim, Cal.

FIFTY MAMMOTH BRONZE IMported gobblers for sale at $5.00 each. For particulars address J. R. SNEAD, Dixon, Cal.

BLUE ANDALUSIANS, NORTHERN strain. Have bred them nine years, eggs $1.50 and $2.00 per 14; $2.50 and $3.50 per 28; $7.00 per 100, order early. L. A. WILSON, Winters, Cal.

FOR SALE—BUFF ORPINGTONS Steward Strain, eggs for hatching, $2.50 and $5.00 per 13, 100 per cent. fertility guaranteed. ELIZABETH A. WARD, Carpinteria, Cal.

FOR SALE—WHITE MINORCA EGGS for hatching. Day old chicks on order. Selected prize winning stock. MRS. E. BANTA, Calistoga, Cal.

PRIZE - WINNING WHITE MINORCAS. Eggs for setting, $2 for 15; $3 for 30; $6 per hundred, f.o.b. express. C. S. LANE, Santa Barbara, Cal.

FOR SALE—BABY CHICKS, ALL VArieties, 100 lots upwards. J. STANSFIELD, 3301 East 14th St., Fruitvale, Cal.

RHODE ISLAND RED EGGS FOR hatching. Ferfility guaranteed. $1.50 per 13; $7.00 per hundred. SCOTT WILSON, Altadena, Cal.

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WANTED—TO BUY ALL .KINDS .OF early vegetables from growers direct. References, Wells Fargo and any bank. MRS. M. VETTER, Santa Maria, Cal.

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FOR SALE—ONE REGISTERED JERsey Bull. Dam has given 6,300 pounds of milk with this, her first calf. Price, $50.00. GEO. W. THOMAS, West Central Ave., Riverside, Cal.

ARTICHOKES.

FOR SALE—JERUSALEN ARTIchokes, the great winter hog feed. Address, FANCHER CREEK NURSERIES, Fresno, Cal.

the community property would be distributed to the surviving wife.

This is a case in which the subscriber should consult a reliable attorney without delay, as a court proceeding is necessary.—Edw. L. Payne.

Veterinary

Answers in this column by Dr. R. T. Whittlesey, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Distemper in Dog.

I had a dog which died apparently of poisoning. First he began to discharge watery substance from his mouth, which continued for nine days when he died. He had short coughs occasionally. Had no appetite, would eat nothing the last few days. His throat seemed to be badly inflamed, could hardly swallow. Bowels showed some blood toward the last. Was it a case of distemper or slow poison? Gave lard and sweet oil, also a solution of lard and coal oil and also sulphur. He did not suffer much until the last two days.—C. N., Moneta.

It was probably distemper with bowel and lung complications. Distemper has almost as many forms as there are different dogs, and very few dogs escape it as it is very contagious although one attack renders immunity to a subsequent attack, like measles or small-pox in the human.

Vertigo.

Will you please note the following symptoms and see if you can ascertain what is the matter with our mare: Age twelve years; weight 1050; probably has considerable German Coach horse blood; is a splendid driver, rather speedy; but when left at hitching post for any length of time will stagger and fall as though she could not see. The attack is usually over in a minute or two and then she goes along as though nothing had happened. When being unhitched she has acted as though she were asleep and on two occasions has fallen in her tracks. There is a peculiar condition of her eyes which may have some bearing on the case; the iris seems to be nearly closed by some overhanging warts which leave only a small opening at either side. Her bowels are generally constipated. These attacks seem to occur when she is not worked and is not getting much exercise. We use her in vineyard work and at such times she seems quite well.—C. D. H.

The condition you describe is a vertigo, caused by a congested condition of the brain and may be from different causes, poor return circulation of the blood from the head, or it may be from a diseased liver. There seems to be no treatment that does much good. The little bodies you see in the eye attached to the iris are the Corpora Nigra, or soot balls. If you look at your other horses you will find the same thing. You are not the first one to think he has made a discovery.

Sores from Needle Grass.

My mule has a running sore from the root of her tongue to the outside under her lower jaw. It has a very foul smell. Was caused by eating needle grass. I have been washing it out with carbolic acid water.—E. E.

Sores such as you describe are very frequent in California from eating barley hay, foxtails or needle grass. There is a mass of them lodged in the sinus and it can not

(Continued on Page 207.)

Have the Time of Your Life

with my Portable Billiard and Pool Tables. Send for Catalog and let me show you good, practical Tables at the price of toys. Used anywhere. No special room required. **C. RIDDERHOF**
Merchants Trust Bldg., Los Angeles

Possibilities of Arizona

Mr. H. G. Hutchins, a representative of the Cultivator, has been spending a few weeks visiting the more productive sections of the Gila and Salt River valleys in Arizona. His stay in Yuma and a view of the agricultural lands thereabout was very limited. However, from his observations there we quote below and later give other items secured in his visit about Phoenix and Tempe. On first page of cover this week will be seen a view of the Granite Reef Dam, about 25 miles east of Phoenix near the mouth of the Verde river. That dam has no comparison, of course, with the Roosevelt Dam farther up which will cost in excess of six millions of dollars. These irrigation facilities in the territory of Arizona are increasing more and more the productiveness of the wonderfully rich valleys along the river bottoms. We hope to have more information regarding Arizona agriculturally from Mr. Hutchins in a later issue.

The Yuma Valley is coming to the front. The Cultivator representative has just made a carful investigation and canvas of the section and finds conditions most promising for the future.

The Laguna Dam.

The great Laguna dam is about completed, and as soon as the siphon for conveying the water across the Gila river is ready, will supply water to irrigate 100,000 acres and over. At present only a part of this acreage is under cultivation though practically all is taken up and the owners ready to commence operations as soon as the water is ready. There are enough however in the field to determine the great productiveness of the soil. Practically everything can be grown. Yuma oranges are fine. Alfalfa is probably the most common crop and demands good prices. The melon industry had a setback on account of the poor returns last year and not near the acreage is to be put out that was last year. The writer's impression is, however, that this would be a good year for that crop.

The experiment station under the supervision of Prof. Forbes of the University of Arizona is doing a good work in the valley in determining the values and adaptability of various crops. Cotton has been grown on test and by many it is believed that it will become quite an industry, as the conditions seem to suit it. As yet the produce of the valley is only sufficient for local consumption and not always equal to that. A local creamery uses the dairy output of several ranchers with capacity and demand for more. The prospects for the rancher in the valley are surely bright and the Cultivator notes with pleasure the great progress which is being made toward making the desert bloom. The word desert, however, is misleading, for the examination of the soil does not warrant its use. Instead of a light sand as one would expect, one finds as nice a sandy loam as can be found any place in the west.

* * *

The Secretary of the Yuma County Water Users' Association writes regarding these lands:

"That all of the public lands on this side of the river have been filed upon or are claimed by some one, but some of these claims are for sale. The Yuma Indian Reservation on the California side just opposite the town of Yuma will be open for entry when the water from the Laguna Dam is ready for delivery. The plan to be adopted by the government in opening the reservation has not yet been announced by the department. Forty acres or less will be the greatest amount allowed to any one person. The cost of the water rights on these lands will be from $35.00 to $40.00 per acre. Twenty acres of this land with a sure water supply is considered ample for any family to make a living on. If you wish to buy patented land it will cost from $30.00 to $150.00 per acre according to location and distance from town and the improvements that are upon it. Patented lands are lower now than they ever will be in the future, due to the fact that a great many old settlers have more land than the reclamation act will allow them water for, consequently they must sell within the next two years.

"The climate is without compare for nine months in the year; the three summer months are very hot, but as it is a dry heat people do not suffer and such a thing as a sun stroke is unknown.

"The Yuma Project will be completed, as near as we can now figure, about December 1909. The government has already given us a water supply for 15,000 acres and with gravity water from the dam in the near future, the year round, this valley will be a garden spot in a few seasons. No other valley in the entire country is so favorably situated. With almost continuous sunshine, a soil that has no equal, and cheap and abundant water, nearly everything is possible."

At Phoenix.

Phoenix is the largest city in the territory of Arizona, and is located on the Salt River in the midst of a wonderfully productive farming section. Near it are lands which have been wealth producers in the production of alfalfa, and in the matter of citrus fruits are beginning to attract attention to the fact that many most profitable orchards are already established. Population of the city is now in excess of 18,000, and has its greatest population in the winter time when many Eastern people flock there because of its delightfully healthful conditions.

The Salt River Valley has within it about 200,000 acres of land in private ownership. Only three-fifths of this area now is cultivated, for the Salt is an erratic sort of stream. For weeks its flow may forbid passage at any ford, and yet within a month the traveler may cross dryshod. The land generally is magnificent in quality, capable of growing almost any fruit or grain, and sloping so uniformly and so readily adapted to irrigation that there are theories that possibly the ancients leveled the farms, with resultant benefit to a people who followed them ages after.

Salt River Valley.

The waters of the Salt River which pour in such floods during the wet season are already being stored by the great Roosevelt Dam. This dam is already at a height capable of storing 100 feet deep of water, and is planned so that when finished its height will be increased to 284 feet. It is 1080 feet on the roadway that will cross its crest. Practically, it will be a single solid stone, of 340,000 cubic yards, without openings, keyed firmly to the walls and the rock beneath the river bed. The cement for it is made upon the ground, the Government finding it better to build its own mill than pay exorbitant prices demanded for an article already in light supply. No water will pass over its crest, for waste ways have been arranged for that will handle any flood known to history.

The dam and reservoir works at Roosevelt and in this valley will cost $6,000,000, including the cost of the new irrigation works that will be required in the valley. The cost of these great works is being advanced by the general government from the fund that has been gathered by the sale of lands in the West, but every cent is to be repaid by the land-owners in a term of ten years, without interest, commencing with the completion of the dam.

In fact we believe the recent action of Congress has extended this period of ten years which will make the payment for this great improvement less burdensome. The land-owners have banded themselves into a Water Users' Association, through which the government is being dealt with. About 200,000 acres of land are represented in its membership. Thus the tax upon each acre per annum will be about $3. It can be seen most readily that the added crop return from an absolutely assured water supply, when irrigating water is needed, will far more than return the farmer his annual assessments.

(Continued on Page 207.)

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when you get it. Just mix with water and moisten the seed or spray on soil or young plants. The bacteria will increase rapidly, by the millions, in the soil, and draw nitrogen from the unlimited supply in the air, feeding it to the growing crop and storing it in the soil for future crops.

Alfalfa, Clover, Peas, Beans, all legumes, thrive best and enrich the soil in nitrates for future crops only when well supplied with their special bacteria. Otherwise they drain the soil instead of enriching it. Because Farmogerm supplies the right bacteria in the right way and in the right form, it increases the yield and the food value of the immediate crop, and

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Household Department

BATTLE OF BUNKER HILL.

The seventeenth, at break of day,
The Yankees did surprise us
With the strong works they had thrown up
To burn the town and drive us.

But soon we had an order come,
An order to defeat them;
With three good flints and sixty round,
Each soldier hoped to beat them.

At noon we marched to the Long Wharf,
Where boats were ready waiting:
With expedition we embarked,
Our ships kept cannonading.

And soon our boats all filled were,
With officers and soldiers,
With as good troops as England had,
To oppose who dare control us.

And when our boats all filled were,
We rowed in line of battle;
With grenadiers and infantry,
While grapeshot loud did rattle.

And when we landed on the shore,
We formed in line together;
The Yankee boys then manned their works,
And swore we shouldn't come thither.

Brave General Howe, on our right wing,
Cried, "Boys, fight on like thunder;
You soon shall see those rebels flee,
With great amaze and wonder."

But such stout Whigs I never saw;
To hang them all I'd rather
Than mow their hay with musket balls
And buckshot mixed together.

As for their King, that John Hancock,
And Adams, if they're taken,
Their heads for signs we'll raise aloft
Upon their hill called Beacon.

But our conductor, he got broke,
For his misconduct, sure, sir;
The shot he sent for twelve-pound guns
Were made for twenty-fours, sir.

—A British Soldier.

THE MYSTERY OF LIDA.

MRS. DILPECK paused, hand in air over her daughter's dresser, paralyzed for the moment. She had wandered in as usual to banish the disorder which Lida always left behind her and for the first time that her mother could remember there was nothing to straighten up. The top of the dresser was in precise array, not showing even a collar bow or a hairpin thrown down carelessly. The mirror surface itself was dusted.

"Well!" breathed Mrs. Dillpeck. "Well!"

The phenomenon came back to her mind several times that day, but Lida was down town shopping, so Mrs. Dillpeck said nothing. In fact, all her life Mrs. Dillpeck had said nothing.

For one reason, Lida was so very pretty that the sternest resolutions melted to treacle at her smile and it was easier to follow around doing the things Lida should have done than to scold her about the omission. And then, to her mother, Lida was still a mere child, who doubtless would reform when she grew up.

Asking in a rather hopeless way that afternoon whether Lida remembered to get the silk she wanted and receiving an affirmative answer from that young person, Mrs. Dillpeck was actually alarmed.

"Does you head ache, Lida?" she inquired. "You are sure you aren't feverish or anything?"

"Good gracious, no!" her daughter told her. "I never felt better! Why?"

"Nothing," said her mother. "There's so much sickness around. I just hope you aren't going to be sick!"

* * *

Two days later Mrs. Dillpeck had another shock. Entering the library, she found her daughter rearranging the tables and chairs.

"Don't you think it looks homier this way, mother?" asked Lida.

Up to that time Lida, with her laughter and harumscarum ways, apparently had never observed whether the chairs were placed on the ceiling or side walls, not to mention the floor.

Mrs. Dillpeck sat down heavily.

"I guess so," she said, anxiously, as she gazed at her daughter.

The rose bloom on the check was perfect, the eye was bright. Still, Mrs. Dillpeck was not satisfied. She felt Lida's pulse.

"I just know you're going to be ill or something," she lamented. "Oh, I don't know—I have a feeling! No, you look all right, but one can't tell by that. I never saw any one look better than my own cousin the very day before she was taken down with typhoid!"

It was the cook's day out and when Mrs. Dillpeck started into the kitchen to prepare the family dinner Lida followed her. There was a hesitant look upon her face and she stumbled in her speech.

"Mother," she said, "won't you please let me get the dinner tonight? Honestly, I'd like to try! I never have, you know!"

Mrs. Dillpeck held to the gas range. Through her mind flashed the succession of Thursdays since Lida had grown up and the cook had been out. A book or a call always had interfered with her mother's desire that her daughter should learn to keep house. It had always seemed too bad to break into Lida's engagements. And now—

She gazed, mystified, at the beseeching young creature before her, whose yearning eyes were on the saucepans.

"Why, you'd spoil everything!" objected Mrs. Dillpeck. "You run along—I don't mind doing it!"

"You never let me," Lida mourned, rebelliously. Then she brightened. "I can set the table, anyhow!" she said triumphantly, and darted into the dining-room.

Mrs. Dillpeck was so preoccupied that she salted the coffee and flavored the custard with onion extract. Certainly something was wrong with Lida! The child's conduct was unnatural and her mother was vaguely worried.

After dinner, when Lida had departed for the theater, her mother sat thinking and frowning.

"What's the trouble?" asked Dillpeck over his evening paper.

"I don't know," confessed his wife. "I don't feel right about Lida. She seems well, but I'm afraid she's coming down with something. She doesn't act like herself!"

"Pooh!" said Dillpeck. "She looks well and happy to me! She's all right!"

"You haven't got the eyes of a mother," said Mrs. Dillpeck. "To crown it all, I found her trying to cut out a shirt waist this morning, and she has always loathed sewing! And she was singing—actually singing, over it. Then you try to tell me!"

"How do you make mince pies,

mother?" Lida asked the next night, at dinner.

Even her father stared. "My!" he said, with clumsy playfulness. "What's struck you?"

Lida blushed. "I just wanted to know," she said.

* * *

It was the next day that young Flickworth broke the news to them that he and Lida wanted to get married. After the excitement had calmed down Mrs. Dillpeck wiped her eyes and smiled a watery little smile.

"Anyhow," she said, "I'm glad it's only matrimony and not typhoid fever that made Lida act so odd! I knew it was something!"—Chicago Daily News.

About the House

One of my duties for February, since I have been living in the land of oranges, is to make orange marmalade. Perhaps I could make it just as well in January or March, but I never do. I have always used the one recipe and the marmalade is very nice, but I like to try new ways and if some of the Cultivator readers send their tried recipes it would benefit not only the writer but a host of others. I contribute "my way" of making orange marmalade.

Take firm oranges and slice just as thin as possible and to every pint of the sliced oranges add three pints of cold water and let stand twenty-four hours. Then cook until you can pierce the rind with a straw, then set aside for another twenty-four hours. Then for every pint of this take a pint of granulated sugar and cook it until it "jellies." Then put in jelly glasses and cover with paraffine. I usually put in a few slices of lemon, about one lemon to every six oranges, but it is not necessary. Don't slice too many oranges to begin with. I had every crock in the kitchen full the first time I tried it, for I made no allowance for the three pints of water to each pint of oranges.

And if any one knows how to prepare the candied orange peel, I wish they would tell the Cultivator family.

Do not forget that "Washington Pie" is an appropriate dessert for dinner on February 22. It is a dainty quite worthy of being named for our first president. Bake any simple cake in one thick layer and while still hot split in two pieces. Spread one piece with a thin layer of jam and a thick layer of custard. Place the other half of the cake on the custard, spread with jam and sprinkle generously with powdered sugar. To make the custard take one cup of milk, one egg well beaten, one teaspoonful of corn starch dissolved in a little of the milk, add sugar and flavoring and cook until thick.

Kitchen holders made of ticking or any heavy cotton goods are quickly made and easily washed when soiled. Cut two thicknesses of cloth about five inches square, stitch all around and put a loop at one corner.

If your window shades are soiled and shabby and you would like to make them last until the spring house-cleaning, take them off the rollers and turn them upside down. They will look well for some time.

If you want a change from potatoes, "baked, boiled or fried," try "Club House Potatoes." One pint of potatoes cut in small cubes should be parboiled three minutes. Pour off the water, add a scant fourth cup of butter and a little pepper and salt and cook until done. Add a cup of thin white sauce and serve at once. If you have the parsley, a spoonful of it cut fine and sprinkled over the potatoes improves them both in looks and taste.

A cheese pudding is quickly made and furnishes just the hot dish that is liked these winter days. Butter a baking dish and put in a layer of bread, small pieces, then a layer of cheese, either grated or cut in thin slices, a little cayenne pepper, salt and a tiny pinch of baking soda. Repeat until the dish is full, with cheese for the top layer. Pour on milk to cover all and bake for about one half hour.

A dainty way of serving oranges is to separate the seedless oranges into sections and carefully dip each section into a sugar syrup, so stiff that it will "thread." Pile the sections on a pretty dish and slowly pour the syrup over them until they are well coated. Serve very cold with whipped cream.—Elbepe.

A QUESTION FOR HIS HONOR.

A Missouri lawyer relates the following court episode: "A colored woman was charged with inhuman treatment of her children. Evidence was clear that the woman had severely beaten one youngster, aged some 9 years, who was in court to exhibit his battered condition. Before imposing sentence the justice asked the woman whether she had anything to say.

"'Kin I ask Yo' Honoh a question?' inquired the prisoner.

"'Certainly you can', the court responded.

"'Well, then, Yo' Honoh, I'd like to ask yo' whether yo' was ever de parent of a puffectly wuthless culled child?'"

FLATTERING SCALES.

When Grover Cleveland's son Richard was born his good friend Joseph Jefferson drove over to Gray Gables to congratulate the father.

"How many pounds does the child weigh?" asked the noted actor.

"Fifteen," was the reply.

"Nine," said the attending physician, who had just come in.

Mr. Cleveland assured the doctor that he must be mistaken. "The child weighs fifteen pounds," said he; "I weighed him myself with the scales Joe and I use when we go fishing."—Success Magazine.

"Yis, ma'am," said Bridget, "I'll be lavin' ye. I don't like that snip of a dude that does be callin' on Miss Mabel."

"The idea," exclaimed her mistress. 'He doesn't call to see you, so what—"

"I know he don't ma'am, but I am afraid some of the neighbors might think he does."—Philadelphia Press.

"Why don't you get up and give that seat to your father, Bobby?" reprimanded the woman. "Doesn't it pain you to see him reaching for a strap?"

"Not on a train," chuckled Bobby. —Philadelphia Inquirer.

"Can't you find any work at all?" "Plenty, sir; but everybody wants references from my last employer." "Can't you get them?" "No, sir; he's been dead twenty-eight years."

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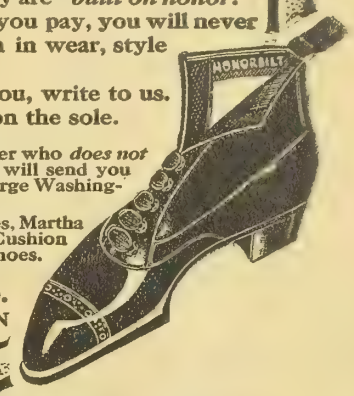

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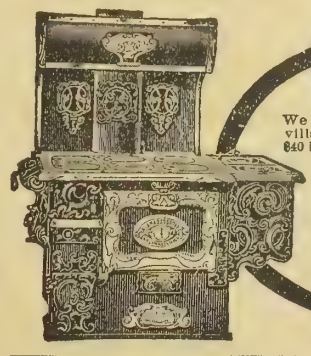

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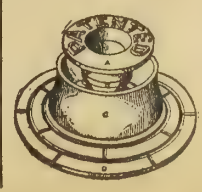

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The Produce Markets

Los Angeles Markets

LOS ANGELES, Feb. 17, 1909.

Butter.

Butter remains exactly as last week. It was to be lowered by resolution of the Produce Exchange, but owing to a little jobbing of the market, prices paid to the purchaser were at the reduction and supplies were then sold to trade at the former higher price. It will doubtless be marked down tomorrow.

Produce Exchange wholesale quotations are as follows with actual selling price to the trade 2½c advance on Extras.

Creamery ex per roll	.75
Firsts	.70
Eastern extra per roll	.70
Cooking	.23@25
"Butterine"	.16@20

Cheese.

Southern California Anchor	.15½
Northern fresh	.16@16½
Longhorn	.19
Eastern singles	.17
Cheddars	.17
Swiss	.16½
Imported Swiss	.27@28
Daisy	.17@17½
Limburger	.18@21
Oregon triplets	.16
Twin	.17

Eggs and Poultry.

Eggs have declined almost every day and to such an extent that a 16 cent decline is noted during the week. This decline will probably now be stayed or at best cannot be so rapid.

Eggs local candled	.26@28
Eggs case count buying price	.22@23

Dealers pay for live stock.

Hens per pound	.15
Young roosters per pound	.16
Fryers	.20
Broilers per lb	.22@25
Roasters	.18
Old roosters	.8
Turkeys	.16@20
Geese	.14
Ducks	.12
Squabs	.1.25@1.75

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs from 175 to 200 pounds	6¼@6¾
Prime steers	.4¾@5
Heifers	.4@4¼
Calves per pound	.5
Sheep ewes per head	.3.75@4.00
Lambs per head	.3.00@3.50
Wethers	.4.50@5.00

Potatoes.

Wholesale prices are:

Sweets per ctl	.1.25@1.75
Sweets choice	.1.25
Highland fancy	.1.85
Highland choice	.1.70
Coast	.2.00@2.15
Salinas	.2.10
Idaho's	.1.70@1.85
Oregon Early Rose	.2.50
Colorado's	.1.85

Onions.

Wholesale quotations:

Australian Browns	.2.50
Danvers	.2.75@3.00
Silverskins	.2.50
Oregons	.2.75@3.00
Garlic	.12

Vegetables.

Artichokes per doz northern	.1.00
Asparagus per lb	.25
Beets per doz	.35@40
Bell peppers per lb	.20@22
Beans string	.15@16
Beans Limas per lb	.8@10
Brussels sprouts per lb	.10@11
Cabbage Red per lb	.3
Cabbage sack	.1.25@1.50
Celery per crate	.2.85@3.00
Chili per lb	.20
Chili dried	.10@12
Chicory per doz	.40
Cucumbers per doz hot house	40@1.75
Cauliflowers per crate	.1.50@1.75
Carrots per doz	.35@40
Egg plant per lb	.8
Green onions per doz bunches	.25
Horseradish per lb	.12
Lettuce per crate	.35@1.25
Lettuce choice	.75
Mushrooms per lb	.35
Peas sugar per lb	.4@6
Parsley doz	.20
Parsnips	.35@40
Rutabaga per doz	.40
Rhubarb	.75@1.00
Radishes per doz	.15@20
Salsify	.40
Summer squash per box	.1.00@1.25
Spinach per doz	.20
Turnips doz bunches	.25@40
Tomatoes crate	.2.00@2.50

Citrus Fruits.

Navels fy	.2.00@2.50
Navels ch	.1.75
Tangerines	.1.45@1.60
Grapefruit seedless	.3.25@3.75
Grapefruit seedlings	.2.25
Lemons fy	.2.25
Lemons choice	.1.75
Lemons choice	.1.25
Limes per basket	.50

Fresh Fruits.

Wholesale prices on the market are:

Baldwins 3½ tier	.1.65
Bellflowers	.1.15
Newton Pippins	.1.25
Fall Pippins	.1.25
Red Pearmains	.1.25
Spitzenberg	.2.50
Grapes Red Emperors	.1.50
Guavas per lb	.6
Cornichons	.1.25
Guavas	.6
Pears lug obx	.1.25
Persimmons per box	.2.25
Pomegranates per box	.1.75

Dried Fruits.

Wholesale prices are:

Apricots	.9½
Exap. apples fy per lb	.6½@7½
Figs loose white	.5
Figs blk	.5
Peaches in boxes	.7½
Peaches sacks	.6
Pears	.9
Plums, pitted	.10
Nectarines	.9@10
Prunes 30's to 40's boxed	.8
Prunes 40's to 50's	.7½
Prunes 50's to 60's	.7

Beans Dried.

Wholesale prices are:

Limas per ctl	.4.75
Pink No. 1	.3.20@3.25
Lady Washington	.4.75
Small white	.5.50
Black eyes	.3.50
Garvanzas	.4.50
Lentils	.3.00
Bayou	.3.50

Nuts.

Almonds IXL per lb	.11
Almonds choice	.11½
Pecans polished	.12@17
Peanuts Virginia	.6½
Peanuts California	.5
Walnuts No 1	.12@12½
Chestnuts	.8@8½

Honey.

Wholesale quotations:

Extracted water white	.8
Extracted Light Amber	.7
Comb W W	.15
Comb white	.14
Beeswax	.30

Hay.

Prices paid to producers f. o. b. Los Angeles are as follows:

Barley No 1	.20.00@22.00
Barley No 2	.15.00@17.00
Alfalfa northern per ton	.14.00@15.00
Alfalfa local	.15.00@18.00
Tame Oat No 1	.20.00@22.00
Wheat No 1	.18.00@20.00
Wheat No 2	.15.00@17.00

Grains.

Wholesale selling price f. o. b., Los Angeles.

Wheat new per ctl	.2.00
Kaffir corn	.1.80
Corn Eastern sacked	.1.75
White oats	.1.90
Seed Rye	.1.80

Feed Stuff.

Wholesale selling price f. o. b., Los Angeles:

Cracked corn	.1.80
Shorts	.1.80
Bran	.1.65
Oil cake meal	.2.50
Feed meal	.1.85
Rolled barley	.1.55

San Francisco Markets

SAN FRANCISCO, Feb. 15, 1909.

Butter.

Butter has advanced and declined during the week and now stands at one cent in advance of last week's quotations and with market strong at this writing.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras per lb	.36
California firsts	.33
California seconds	.30½
Ladies extra	.23½
Storage Cal ex	.32½

Cheese.

California flats fy	.14½
Firsts	.12½
Cal Young America fy	.16½
Firsts	.16
Seconds	.11½
Young American Oregon fy	.16½
Eastern N. Y. Cheddars fy	.17
Oregon flat fy	.14½

Eggs and Poultry.

Eggs took their hardest tumble Saturday when they dropped 7 cents. Receipts are liberal. It is felt that no more such heavy decline can come again.

Official quotations of the S. F. Wholesale Dairy & Produce Ex. are:

Fresh ranch extras	.30
Eggs first per doz	.28½
Eggs second	.28
Pullets selected	.28

Hens per doz	.5.00@6.50
Hens extra	.7.00@9.00
Young roosters	.7.00@7.50
Old roosters	.4.00@5.00
Fryers per doz	.6.50@7.00
Broilers per doz	.4.50@6.50
Geese per pair	.2.00@3.00
Goslings per pair	.1.75@2.00
Ducks young	.5.00@9.00
Live Turkeys	.19@21
Dressed Turkeys	.20@26
Pigeons young	.2.00@3.00

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

Live Stock.

San Francisco prices gross weight:

Steers No 1	.5
Do second quality	.4½
No 1 cow and heifers	.4
Second quality	.3½
Hogs 100 to 130	.6
Hogs 130 to 250	.6⅜@6½
Rough heavy	.4½@5
Calves per lb	.4@5
Lambs spring	.6½
Wethers No 1	.5¾@6
Ewes No 1	.5¼@5½

Potatoes.

Wholesale market quotations:

River white fy sacks	.155@1.60
Early Rose	.1.75@1.85
Salinas Burbanks	.1.75@1.85
Sweets per crate	.1.75
Lompoc Burbanks	.2.00
Early Rose seed	.1.25@1.30
Oregons	.1.65@1.85

Vegetables.

Wholesale quotations:

Asparagus per lb	.20@25
Bell peppers per lb	.25
Brussels sprouts per lb	.3@5
Celery per doz	.40
Celery per half crate	.1.00
Cucumbers per doz	.75@1.25
Chili peppers per lb	.17½@22½
Egg plant per lb	.25@30
Green peas per lb	.4@12½
Mushrooms per lb	.12½@25
Marrowfat squash per ton	20.00@22.50
Squash per box Southern	.1.00@1.50
Onions green per box	.65@75
Okra per box	.1.25@1.50
Rhubarb per lb	.7@10
Tomatoes box Los Angeles	.1.25@1.50
String beans	.15½@17½
Wax Beans	.10@12½
Garlic new	.8@10

Onions.

Onions	.2.00

Citrus Fruits.

Navels fy & large sizes	.2.00@2.50
Tangerines crates	.1.00@1.50
Mandarins	.75@1.00
Grapefruit seedless	.2.50@3.50
Grapefruit seedlings	.75@1.25
Lemons ch	.2.00@2.50
Lemons fy	.2.50@3.00
Limes	.6.50@7.00

Fresh Fruits.

Bellflowers	.90@1.00
Bellflowers No 2	.50@85
Spitzenberg	.1.25@2.00
Newton Pippins	.1.25@1.75
Ben Davis	.1.25@1.50
Winter Nellis	.75@1.00
Persimmons	.75@1.00

Dried Fruits.

Prunes 4-size basis	.2¾@3½
Santa Clara	.3¼@3¾

½c premium for larger sizes

Apricots per lb; Choice 8½; fancy	7@10.
Peaches—Choice	.4; fancy .6½
Apples, evap	.5@6½
Pears	.4@8
Figs	.2@4
Nectarines	.5@6

RAISINS—1908 crop, r. o. b.: Clusters and Layers, 20-lb bxs—Imperial Clusters, 6-crown, $2; Dehesa Clusters, 5-crown, $1.75; Fancy Clusters, 4-crown, $1.40; London Layers, 3--crown, $1.15; do, 2-crown, $1.05. Seeded, 25-lb bxs—Fancy bulk per lb, 5¼c; Choice bulk, 5c. Loose Muscatels, 50-lb bxs—Standard, 4-crown, 4c; do, 3-crown, 3¼c; do, 2-crown, 2¾c; Seedless, 3½c. Seedless Sultanas—Unbleached, 4¼c. Thompson Seedless—Unbleached, 4¾c. Dried Grapes, 2½c.

Nuts.

Walnuts S S No 1 new crop	.9½
Walnuts No 2	.6
No 1 Standard	.8½
No 2 Standard	.4½@5
Almonds Nonp	.11½
Almonds IXL	.10½@11
Ne Plus Ultra	.9½
Drakes	.8½@9
Chestnuts	.9½@14
Peanuts Cal	.5½@6

Beans Dried.

Limas	.3.75@3.85
Pink	.2.55
Small white	.5.20@5.30
Large white	.4.20@4.30
Black eyes	.3.60
Red Kidneys	.3.75@4.00
Garvanzas	.2.75@3.25
Bayo	.3.20
Horse beans	.2.00

Hops.

Hops new crop	.5@10

Honey.

White comb	.15½@16
Light Amber	.9@10
Exracted W W	.7@8
Extracted light amber	.5½@6
Beeswax No 1 per lb	.28@30
Beeswax No 2 per lb	.23@25

Hay.

Choice wheat hay	.21.00@23.50
Good wheat hay	.19.00@21.00
Other grades same	.17.00@18.00
Wheat and oat	.16.00@21.50
Tame oat	.16.00@21.50
Wild oat	.15.00@18.50
Stock hay	.11.00@14.00
Alfalfa	.16.00@19.00
Straw per bale	.50@80

Grains.

Wheat No 1	.1.75@1.77½
Barley	.1.40@1.42½
Corn large yellow	.1.60@1.65
Oats white	.1.82½@1.95
Oats gray	.1.80@1.90
Rye new crop	.1.75@1.85
Corn Egyptain	.1.60@1.65

Feed Stuff.

Bran per ton	.29.00@30.00
Feed cornmeal per ton	.39.50@40.50
Cracked corn per ton	.40.00@41.00
Rolled barley per ton	.28.50@30.00
Oil cake meal per ton	.38.50@40.00
Cocoanut cake per ton	.26.00@27.00
Middlings	.33.50@36.00
Shorts	.32.50@33.50

Citrus Market

NEW YORK, Feb. 11.—Only nine cars navels sold owing to late arrival of fruit train. Market very strong, higher. Cloudy, cold, snowing.

NAVELS—	Average.
Rialto Girl imp fy Growers' Ft Co	2.80
Rialto Girl ch do	2.60
Rialta Girl fy do	2.60
Rialto Girl ch do	2.55
Independent do	2.70
Stock Label, do	2.45
Orchard imp o r National O Co	3.25
Standard imp sd do	2.65
Orchard o r do	2.95
Redlands Best x fy Mutual O D	2.65
Redlands Best e fy Mutual O. D.	2.65
Redlands Pride x ch do	2.40
Redlands Best x fy do	2.65
Pointer imp ACG Ft Ex	2.75
Jameson QC Ft Ex	2.65
Justrite do	2.50
Violet DM Ft Ex	2.75
LEMONS—	
Southland Beauties QC Ft Ex	2.30
TANGERINES (Halves)—	
Stag ACG Ft Ex	1.80

PHILADELPHIA, Feb. 15.—Nine cars oranges and two cars lemons sold. The market is unchanged on lemons and easier on oranges. The offering consisted of poor stock. Weather cloudy warm. Twenty-two cars Florida oranges sold from $1.80 to $3.15. Stock was good. Market was strong on Floridas.

NAVELS—	Average.
Rialto Girl fy Growers' Ft Co	2.44
Rialto Girl ch do	2.43
Rialto Girl imp do	2.62
Highlander xf Highland F G Assn	2.45
A.One fy or E Peycke Co	1.56
Deal sd E Peycke Co	1.42
Chariot RH Ft Ex Red Jct	2.14
Anona RH Ft Ex Red Jct	1.98
Quail OK Ft Ex	2.32
Swan or RH Ft Ex Red Jct	2.49
Argonaut ST Ft Ex Fullerton	2.20
Hacienda ST Ft Ex Fullerton	2.12
Goddess SA Ft Ex Pomona	2.28
Tiger SB Ft Ex Colton	2.40
TANGERINES (Halves)—	
Tiger SB Ft Ex Colton	1.68
LEMONS—	
Pyramid xc or Strachan Ft Co	2.98
Papoose ch do	2.75
Loma ch Limoneira Co	2.66

ST. LOUIS, Feb. 15.—Snowing. Market weak on account of the condition of the fruit. Market is overstocked with dry fruit—navels. Market strong on small sizes lemons. Eight cars sold. Eight cars navels and one car lemons on track.

NAVELS—	Average.
Valley TCC Ft Ex Porterville	1.10
Full Value do	1.10
Butterfly Covina Ft Ex	2.25
Teal Covina Ft Ex	1.90
Lochinvar RH Ft Ex E Highlands	2.50
Belt do	2.25
Mtn Crest SA Ft Ex Pomona	1.60
Cluster do	1.60
Volunteer SA Ft Ex N Pomona	2.55
Greyhound do	2.30
La Hermosa	1.95
Buscada Atland Ft Co	1.30
Golden Flower xf Redlands G O A	2.45
Blossom xc Redlands M O Assn	1.70
Domestic	1.50
LEMONS—	
Loma ch Limoneira Co	2.35

A 10 YEAR ROOFING GUARANTEE.

In the advertising columns of this paper the United Roofing and Manufacturing Co. are offering to every purphaser of 3-ply Congo Roofing a National Surety Co. guarantee bond, which covers a period of **10 years.** This Company is one of the largest Surety Companies in the world, (capital and assets of about $2,000,000) and when they back a proposition there must be a great deal in it or they would not have risked their reputation on something about which there could be any question. The bond is a plain statement of what they can and will do, and offers such protection that no prospective buyer can afford to overlook. This bond means protection to you. It isn't necessary to buy the roofing to learn the contents of the bond—which is another pleasant feature. By writing to the United Roofing & Manufacturing Co., Philadelphia, Pa., or Blake, Moffitt & Towne, Los Angeles, they will be glad to send you information regarding same and sample free.

ARIZONA.

(Continued from Page 203.)

Alfalfa.

There are in the great Salt River valley about 75,000 acres of alfalfa. In some sections this stretches away for miles, a perennial dark green carpet. Arizona sun and Salt River water combine to make a wonderfully productive crop of this mortgage-lifter. Usually six crops per annum are cut.

Many a farmer has found the grape vine to do exceptionally well in the Salt River valley. The seedless varieties especially have ripened very early and reached the Eastern market amongst the earliest of all grapes. The warm spring sun filled them full of sugar and they were of exceptionally fine quality.

The government experiments in date culture open the way for another agricultural product which may prove a great wealth bringer.

Near Glendale in Maricopa county is a million dollar sugar factory which indicates that the Salt River Valley can grow abundance of sugar beets. This plant has a capacity of about 1000 tons of beets a day.

VETERINARY.

(Continued from Page 202.)

heal until they are removed, which is not an easy job. You should have a surgeon remove the whole pipe with all its contents if possible. Sometimes the grass can be cleaned out with a curette. No medicine will cure it until this is done. Be careful not to feed any more needle grass. If you had a curette you might clean it yourself; I think I could send you one that would do for about $1.50.

DR. WHITTLESEY'S VETERINARY REMEDIES.

These are not ordinary mixtures but are from well tried formulas, used in an extensive practice in Southern California for nearly a quarter of a century. Dr. Whittlesey's Sulphur Arsenical Salve for deep fistulous or ordinary chronic, indolent sores such as, "Poll Evil," "Fistulas," "Quitters," "Thrush," "Scratches," "Warts," "Collar sores" or "Sit-fasts." $1.00 per package postpaid. Printed directions. Dr. Whittlesey's Antiseptic Healing Powder. Forms a coating over raw surfaces. excludes air, flies and floating germs. Makes a cheap and convenient dressing for the many sores that occur to stock on the ranch. $1 full pound can postpaid.

DR. R. T. WHITTLESEY.
Veterinary Hospital, 714 East Seventh St., Los Angeles, Cal.

PRESIDENT ROOSEVELT.

(Continued from Page 179.)

Need of Co-operation.

"First, effective co-operation among farmers, to put them on a level with the organized interests with which they do business.

"Second, a new kind of schools in the country, which shall teach the children as much outdoors as indoors, and perhaps more, so that they will prepare for country life, and not, as at present, mainly life in town.

"Third, better means of communication, including good roads and a parcels post, which the country people are everywhere, and rightly, unanimous in demanding.

"To these may well be added better sanitation; for easily preventable diseases hold several million country people in the slavery of continuous ill health.

"The commission points out, and I concur in the conclusion, that the most important help that the government, whether national or state, can give is to show the people how to go about these tasks of organization, education and communication with the best and quickest results. This can be done by the collection and spread of information.

"The only recommendation I submit is that an appropriation of $25,000 be provided, to enable the commission to digest the material it has collected, and to collect and to digest much more that is within its reach, and thus complete its work.

To Develop Community.

"Our object should be to help develop in the country community the great ideals of community life as well as of personal character. One of the most important adjuncts to this end must be the country church, and I invite your attention to what the commission says of the country church and of the need of an extension of such work as that of the Young Men's Christian Association in country communities.

"I warn my countrymen that the great recent progress made in city life is not a full measure of our civilization; for our civilization rests at bottom on the wholesomeness, the attractiveness and the completeness, as well as the prosperity, of life in the country. The men and women on the farms stand for what is fundamentally best and most needed in our American life."

Organize.

The president ends by saying: "Very much information of the most valuable kind can be gathered if the commission is given the money necessary to enable it to arrange and classify the information obtained from the great mass of similar answers which they have received.

"But there is one point where the testimony as a whole agrees. The general feeling is that the organizations of farmers, the grangers and the like, have been of the very highest service not only to the farmers, but to the farmers' wives, and that they have conferred great social as well as great industrial advantages."

A FAIR SPRAYER PROPOSITION.

"The farmer best knows what the farmer needs and wants," which accounts for the big success of the H. L. Hurst Manufacturing Co., of Canton, Ohio, manufacturers of Quality Sprayers and pioneers of "Free Trial without a cent in advance" as applied to sprayers. Every one of the officers of this company were raised on a farm and knew the requirements of a first-class sprayer and also that the farmer wanted a sprayer that could be used for all kinds of work and with this end in view they invented and manufactured the Hurst Man-Power and Hurst Horse-Power Combination Potato and Orchard Sprayers.

In an interview with the president, the following facts were obtained: "Regarding our machines, would say that we have three special styles. (among others) which are of special value to the fruit grower and farmer. The first is our 'Fitz-All' Sprayer; the second is our Man-Power Potato and Orchard Combination Sprayer, and the third, our Horse-Power Combination Orchard and Potato Sprayer.

"The Fitz-All has been happily named, for it fills all the demands for a pump at a very reasonable price, which will fit on any barrel, tank or other water-proof vessel.

"Our Man-Power Machine is specially adapted for either potato spraying or orchard uses. It sprays anything sprayable. Supplies chemicals to four rows at a time, and is mounted on a wheel barrow frame of hollow steel tubing. It pushes easily because of the wide, three-inch wheel. It is specially interesting and useful to fruitmen and gardeners, because it can be converted into either a truck machine or an orchard sprayer in five minutes. The tallest trees can be reached with the extension rod, and every condition of spraying or whitewashing or painting is fulfilled by this combination machine.

"Our Horse-Power Machine is a signal success. The tank holds either 60 or 100 gallons, and is made for one or two horses. It is entirely automatic and for orchard work generates its own power as you drive from tree to tree, and for potato or field work, it's the best to be had."

The above company send out a brand new catalog describing the three above machines, besides other styles which they make. This catalog is entitled, "Needn't Send One Cent." It is handsomely printed on first-class paper. Every fruitgrower and gardener ought to have this catalog. Write for it mentioning the Cultivator.

The Model Acetylene Gas Generator

Built **especially** for generating the **best** known gas for **cooking** and **illuminating.**

Considered to be the best on the market by those who know.

Permitted by the National Board of Fire Underwriters.

Sold under a positive guarantee.

Satisfaction also guaranteed or money refunded.

Send for an illustrated catalogue and learn why it is the best.

An excellent opening for good salesmen.

J. M. Gillis
Box 573, Stockton, Cal.

HAY and GRAIN
J. S. Going & Co.
Commission Merchants
217 Lissner Building, Los Angeles, Cal.
Reference: National Bank of California
Correspondence Solicited

Placentia Perfection
Scions
Seedlings
and Grafted
Walnut Trees
O. W. LILLIE Fullerton, Cal.

Walnut Trees

Grafted or grown from carefully selected seed. Postal gets prices.

A. A. Mills, Anaheim, Cal.

LAND PLASTER

Gypsum will make available the plant food in your soil and bring good returns through small investment.

Wonderful Soil Corrector

Write for prices in car lots.

Acme Cement Plaster Co.
750 So. Alameda St. Los Angeles, Cal.

Sweet Pea Seed

Fully 90% of the world's supply of Sweet Pea seed comes from California.

And **C. C. MORSE & CO.** are the largest growers of **Sweet Pea seed** in **California**—consequently the largest growers of **Sweet Pea Seed** in the **World.** Our 1909 catalogue has a beautiful colored picture of **3 grand new Sweet Peas,** on the back cover.

And inside is a list of **9 other** beautiful **new** varieties of **Sweet Peas.**

It will pay you to **send for the catalogue** which will be **mailed free** on receipt of **name and address.**

Remember: This is seed time all over the West. **Now is the time** to plant your **Garden.**

Send to us for **any kind** of **seed** you want—also **Plants** and **Trees.**

C. C. MORSE & CO.
41 JACKSON ST., San Francisco
Retail Store 125 Market St.

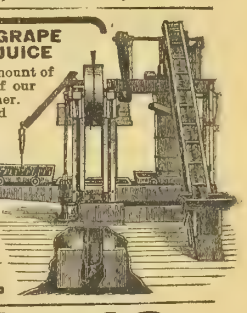
SEED POTATOES

Young's Harvest King (early or late) yields larger than any potatoes. J. P. Walker, Santa Ana, raised 50 sacks from one sack. Write for prices and information to

A. J. YOUNG, Grower, Propagator and Importer
Route 5, Box 68, Santa Ana, Cal.

MORE GOOD CIDER OR GRAPE JUICE

can be made from a given amount of apples or grapes with one of our presses than with any other. The juice will be purer and bring higher prices, while the extra yield soon pays for the press. We make **HYDRAULIC** Power Presses in all sizes, hand or power, 25 to 400 barrels per day. Also Steam Evaporators, Apple-butter Cookers, etc. Fully guaranteed. Catalog FREE.



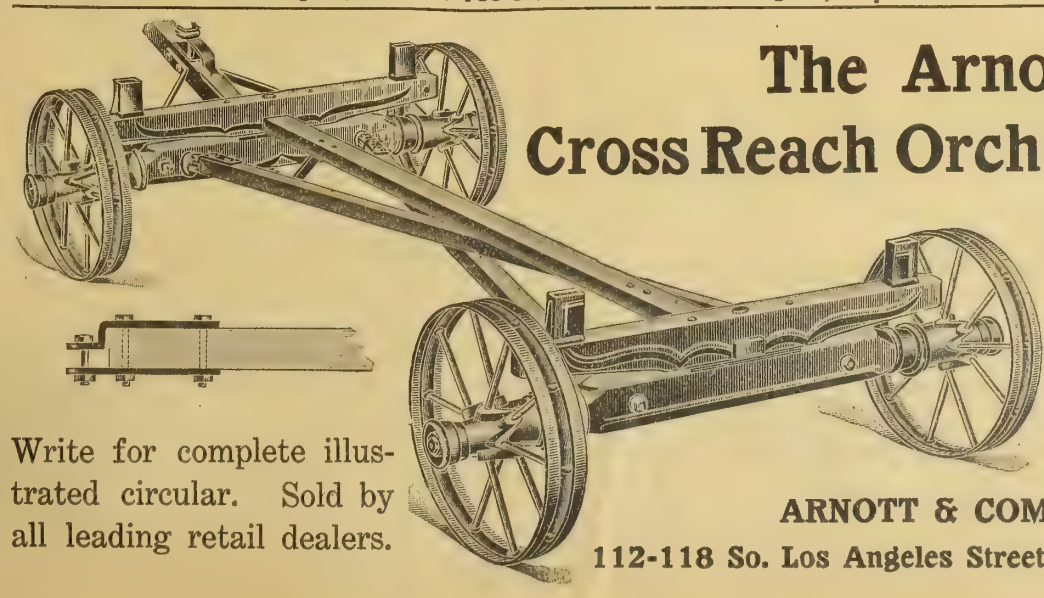
The Hydraulic Press Mfg. Co.
Box 23 Mt. Gilead, Ohio

Harris Seed Co.
The San Diego Seed House
High Grade Farm, Garden and Flower Seeds
Our New Catalogue is ready for mailing. A postal card with your address will bring it.
1632 H St. - San Diego, Cal.

Pacific Seed Co.
C. Bagnall, Prop.
GROWERS AND IMPORTERS OF
Grass, Vegetable and Flower Seeds
All Kinds of Bulbs and Onion Sets
609 J St., Sacramento, Cal.
Send for Catalogue. Please mention Cultivator.

For Mehring Foot-Power Milking Machines see O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles, Cal.

Cream Separators, all sizes, all prices. O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.



The Arnott Cross Reach Orchard Truck

The use which can be made of a truck of this kindwill be apparent to any practical orchardist. By means of the cross reaches the truck can be turned very shortly, and any obstruction or tree that the front wheel will clear the rear wheel will clear. Designed with a view to strength and rigidity. Low wheels with 3¼ in. cast skeins. Tires either 4 or 5 in. in width.

Write for complete illustrated circular. Sold by all leading retail dealers.

ARNOTT & COMPANY
112-118 So. Los Angeles Street, Los Angeles, Cal.

Water Pumped by 50 H.P. Western

THE WESTERN

"From Our Shops—Straight to Your Crops"

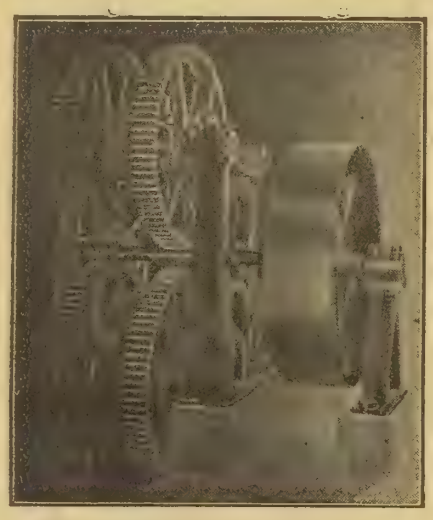
The SATISFACTORY Engine For Irrigation

See our exhibit at "Made in Southern California" Exposition, Exposition Bldg., 316-318-320 So. Main St., Los Angeles

Western Gas Engine Co.

Factory and Main Office: 908-932 N. Main St., Los Angeles
Northern Branch: 22 First St., San Francisco, Cal.

The New Pomona Deep Well Pump



A reliable pump built by a responsible Company.
Being built with machine cut gearing and adjustable bearings, they run as smooth and noiseless as a watch.
You cannot afford to buy a Pump before investigating ours.
Send for Catalogue or what is better—COME TO POMONA.

Pomona Manufacturing Co.

Pomona, Cal.

THE

Latest Deep Well Turbine Pump

Guaranteed to deliver from 100 gallons per minute upwards, depending on the diameter and capacity of well, from a depth of 50 to 300 feet below the surface. Can be either belt driven or direct connected to electric motor as occasion requires.

Write for Catalogue 46B.

A deep well pump that has no valves or plungers to wear or get out of order, no gears, consequently no noise or breaking of teeth.

Compact, durable, always primed and ready to operate, constant flow, hence increased capacity of well.

This type of pump is fast taking the place of Vertical Steam, Deep well Plunger and Propeller Pumps.

Byron Jackson Iron Works

Main Office and Works:
Carlton Station
West Berkeley, Cal.

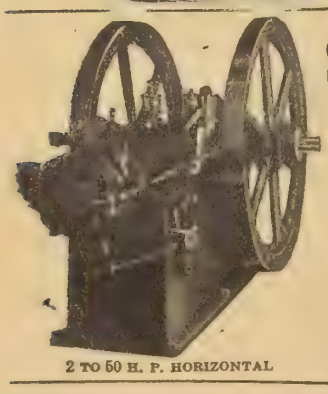
A Handy Little Engine

Just the thing to run the feed cutter, the pump, the churn, the grinder, or anything on the ranch. It's well named

The Little Wonder

Write or call on

Wm. Gregory
602 No. Main St. Los Angeles, Cal.



2 TO 50 H. P. HORIZONTAL

STOVER GAS ENGINES

The simplest and the best. We have had long experience installing pumping plants. We know our business. See us before you buy. 2 to 50 H. P.

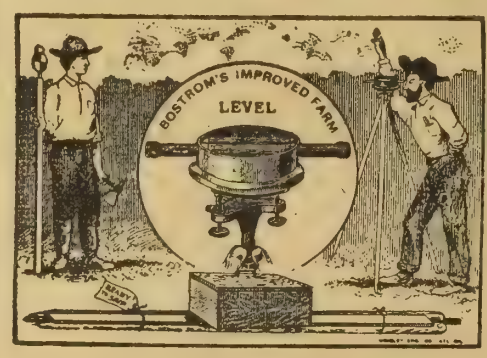
LIVINGSTON & LEE
352 So. Los Angeles St., Los Angeles, Cal.

WOOD PIPE

Made from California Redwood or Selected Washington Douglas Yellow Fir

National Wood Pipe Co.

Machine Banded Stave Pipe Continuous Stave Pipe
SAN FRANCISCO OFFICE—318 Market St.
NORTHERN OFFICE—Olympia, Wash.
LOS ANGELES OFFICE—404 Equitable Bank Bldg.
SALT LAKE CITY OFFICE—Dooly Block.
Prices, specifications, hydraulic data and general information furnished upon request.

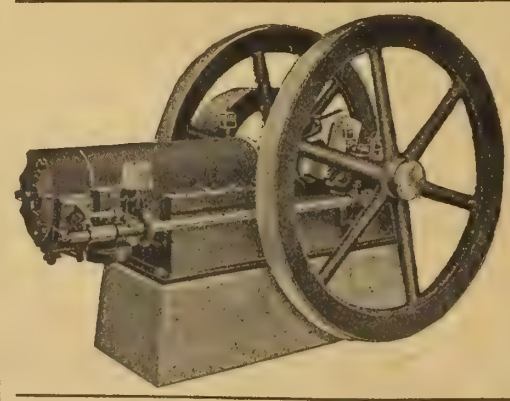


BOSTROM'S IMPROVED FARM LEVEL

Used for irrigation and drainage work. Cheapest and best level yet invented for farm use. Has the latest patented improvements in simplicity and usefulness. Can be operated by any one. Price including telescope tripod and target rod $15.00.

PALACE HARDWARE COMPANY
581 Market Street, San Francisco.

Coast Agents. Send for Circular.



HERCULES ENGINES

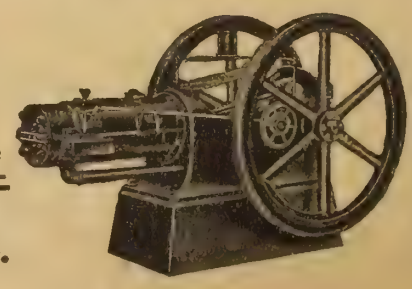
At Less Than Agents Prices

Save money by purchasing a **Hercules** during the month of February, for cash. Strictly high-grade, latest improvements, vertical or horizontal. Great big discount **during February only.** Get our circulars and prices.

The Hercules Gas Engine Works
351 Market St., San Francisco

Commercial Gas Engines

Are what all engines should be:
Simply Perfect and Perfectly Simple



Modern in every detail. An inspection will convince you.
Write for Bulletin No. 12

Commercial Engine Co.

953-955 N. Main St.
Los Angeles, Cal.

California Cultivator

Published Weekly — One Dollar a Year

Los Angeles — February 25, 1909 — San Francisco

As Oranges Are Advertised in the East

Reduction of a Half-Page Ad Which Appeared in Many Eastern Papers

ORANGE WEEK

All Dealers Now Supplied with

Luscious "Sunkist" Oranges

for ORANGE WEEK, beginning

Monday, February 15—Special Prices Everywhere

Every reader of this paper will want to keep *"Orange Week"* in mind. The finest fruit ever grown in the famous California Orange Groves—delicious "Sunkist" Oranges—will be supplied by *your* dealer.

"Sunkist" Oranges are grown in the 5,000 orchards of the California Fruit Growers' Exchange. They are selected, first quality, full flavored, tree-ripened, hand-picked.

For juiciness and delicious flavor they are unsurpassed. Every orange is perfect. See them—give them a place on your dining table, and know for yourself how much better "Sunkist" Oranges are than any others.

Tell your dealer *"Sunkist" Oranges* are the ones you want. He will have a full supply during *"Orange Week."*

"Orange Week" is your opportunity to buy the finest, juiciest, most luscious oranges that grow, and at the lowest prices, too.

These California Navel Oranges are cultivated, picked and packed with the greatest care. Look for the name "Sunkist" on the box. This is your insurance of quality and flavor. No other oranges so choice as these.

"Sunkist" Oranges are unsurpassed as a tonic. They should be eaten morning, noon and night. Physicians recommend oranges for their food value—for the nourishment they give to the nerve and brain cells.

Oranges are the oldest of all the "breakfast foods." Other breakfast foods have come and gone while "Sunkist" Oranges have increased in favor because of their health giving qualities.

Eat the "Sunkist" brand and you will understand *why.*

Your dealer—every dealer—is prepared for *"Orange Week"* and will have a full supply of "Sunkist" Oranges—the perfect fruit of the most carefully cultivated orange groves in the world.

Remember "Orange Week" Begins Next Monday

For Health

SUNKIST ORANGES

SUNKIST ORANGES

For Health

THE above is a reduction from a half page ad which appeared in the more influential papers all over the Middle West a few days ago. It was inserted by the great cooperative organization of California orange growers. It called for the observation of "Orange Week" and its invitation was generally accepted. California oranges were talked about as never before and their consumption will be greatly increased by this shrewd step in advertising.

General Manager Woodford says: "The exchange is not attempting to put forward any special brand, but only to increase the consumption of California oranges in general, as represented by the large number of growers who are members of the exchange. We mention our trademark, 'Sunkist', in our advertising, which is on all the best grades of oranges shipped by the exchange, but in addition to this, each box is labeled with the brand under which the individual exchanges pack their fruit.

"The details of this campaign are handled by our Chicago office, but the results show up in our sales figures at the close of the season. It is an expensive proposition, as I presume it would cost $10,000 to cover Chicago alone, but we have not yet tried that."

The Best Keeper

More Money to the Acre

Australian Brown

300 lbs Australian Brown Onion Seed, (true).
100 lbs Danvers.
1000 Superlative Raspberries, 2 year old.
27,000 Mammoth Blackberries, 6 months old.
17,000 Burbank's Phenomenals, 6 months old.
11,000 Himalaya Giant, 6 months old.
1,200 Black Currants, Boskoop Giant, 2 years old.
800 Gooseberries, Golden Drops, 2 years old,
22 000 Texas Evergreens, 1 year old.
13,000 Red Logans, 6 months ol.
Flats of other Plants, Bulbs and Trees all ready to ship. Send for 1909 price list.
Everything Guaranteed to reach you in A No. 1 shape.

A. Mitting

Lock Box 380 Santa Cruz, California

Ranch Goods

IT IS OUR GOOD PLEASURE to manufacture and deal in a large variety of goods absolutely essential to the running of a first-class ranch;

Tents
Stack Covers
Tarpaulins
Wagon Sheets
Irrigating Hose
Picking Bags
Picking Sheets
Nose Bags
Horse Covers

We also make a line of Corduroy, Gov't Khaki and Shaw-Duck Clothing admirable for ranch wear. While low priced, these garments are far superior and more presentable than anything in the overall class. Made to measure for both men and women.

Guns, Ammunition, Fishing Tackle, Camping Goods, Carryall Bags, Holsters, Scabbards, Pouches, Cutlery, Orange Clippers, Pruning Shears, Lawn Mowers, Garden Hose, Canvas, Burlap, Rubber Blankets and Clothing, Rubber Boots, Bicycles, Bicycle Sundries, Kodaks and Photo Material.

If your dealer does not handle our goods, write us.

OUR CATALOGUES

Tent & Camping No. 14, Suit & Boot No. 21, Women's Outing No. 17.

The Wm. H. Hoegee Co. Inc.

138-40-42- South Main Los Angeles, Cal.

Main 8447 Home 10087

STABLE MANURE

SPECIAL PRICE FOR MARCH AND APRIL DELIVERY

Advise your probable requirements. We will book orders for future delivery allowing you to change or cancel on proper notice. This insures you preference and regular shipments, and lowest price during the year.

CUT OUT FOR REFERENCE

HUMUS hardly requires defining to the Orange Grower. Where it is existent in the soil you will find a profitable grove. Is your land deficient in this essential—**HUMUS?**

Commercial Fertilizer can only become properly available with **HUMUS** in the ground. An application of **STABLE MANURE** is acknowledged by successful Citrus Growers as the best and cheapest means of producing the **HUMUS** you want. We have effected a system of loading as to insure you exactly the grade of manure best suited for your soil conditions.

Also at a considerable expense and effort we have made several comparative tests, according to analysis, of the various grades of manure. Our price we fix according to the approximate unit value. In buying manure fertilizers, this point is worth your careful consideration.

Full information gladly furnished on inquiry.

CUT OUT FOR REFERENCE

Write or telephone Sunset Main 7883, Home 10315

DIAMOND COAL COMPANY 528 Citizens Nat'l. Bank Bldg. Third and Main Sts.
Los Angeles, Cal.

Olds Complete Power Spraying Outfit

Equipped with their air-cooled engine, which is a great advantage, making it much lighter and easier to operate. Send for circular and Price List 6802 to

The Compressed Air Machinery Company

Dealers in all Kinds of Machinery
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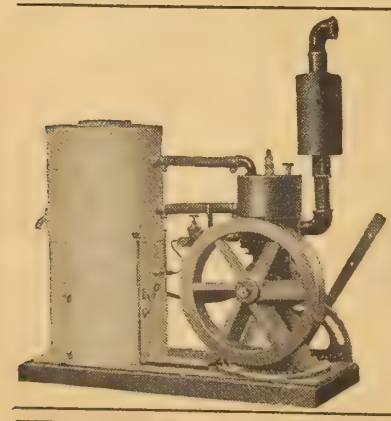

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California Cultivator

Vol. XXXII—No. 8 Los Angeles, California, Thursday, February 25, 1909 Subscription $1 a Year

Organize for Fighting Orchard Pests

Claremont Fruit Growers Organized to Secure More Competent Inspection of Orchards

ONE OF the most progressive if not the most progressive farmers' club in the State of California has been the Claremont Pomological Club, organized many years ago with Prof. A. J. Cook as president, which office he still retains, and V. V. LeRoy is secretary. The community immediately surrounding Claremont on the extreme eastern edge of Los Angeles county, which is the center at which Pomona College is established, is made up of a very intelligent, high class of people. Consequently the monthly meetings of this club have brought together a class qualified to discuss questions which confront them as producers in a most intelligent way. Usually an afternoon session is held, but sometimes an all day picnic is planned and the entire neighborhood joins. Something over seven years ago in this club was started a movement for a local co-operative telephone exchange with headquarters at Pomona, three miles and a half away. It was at first determined that unless fifty members joined this association a start would not be made and we know a great effort was required to secure that number to make this start. Today this same co-operative telephone system is operating more than 2500 phones, and at an exceedingly low cost to the members.

The same club inaugurated a movement a few years ago for more reasonable fertilizer laws than the state had ever had up to that time. Mr. Frank Palmer and others of the committee worked hard and through their efforts and backed by the united efforts of this club, the present fertilizer law was carried through the state legislature.

At this time the club is showing its power to accomplish good for its community by taking up the question of orchard inspection and uniting in studying up a plan of combating the orchard pests which threaten all citrus sections and eradicating if possible such as have secured a foothold and preventing the introduction of others. Especially was the effort made to secure competent and trained men in the offices of inspectors and county horticultural commissioners. A committee was appointed, consisting of V. V. LeRoy, Pomona, W. A. Johnstone, San Dimas, Dr. Vincent Baker, Pomona, Mr. Daniel Durkee, San Dimas, to investigate the situation and report. The work was inspired more particularly by the danger which confronted them by the mealy bug which has proved disastrous in some orchards in California. The meeting at which this committee reported was so important that a bulletin devoted to "Mealy Bug and Fumigation" was issued. It is a very valuable publication and should lead to an awakening as to the danger which confronts citrus growers from this pest.

Mr. C. F. Baker reports in the bulletin regarding the work of the inspectors employed as follows:

Trained men—men with careful and practical technical preparation—are universally considered an absolute necessity in all of the most highly developed industries. Why not, then, in the orange industry, where millions are invested? It is to the efforts of men of thorough technical training that we are just now indebted for opening up to us entirely new possibilities in the matter of effective fumigation. Our whole inspection

(Continued on page 218.)

Controlling Some Pests of the Orange

Observations on Sprays and Gas Treatment By Charles E. Beemis of Covina

There has been much inquiry as to control of mites and of scale on orange trees. New comers into California necessitate much repetition on the part of the newspapers as to cultural methods. As a rule all the scale pests are now given the hydrocyanic acid gas treatment. The mites and red spiders are another problem and are best treated with sprays.

Wishing reliable information we have asked Mr. Chas. E. Beemis of Covina, one of the Horticultural Commissioners of Los Angeles County, to give us a short article on the subject. We trust we may later have another article from him on the silver mite.

I AM somewhat at a disadvantage in treating this subject as I can not (in the light of our present knowledge) conceive of conditions which would make it desirable to treat either of these pests upon citrus trees with sprays, except it be that sulphur sprays are meant for the two mites named.

Dust Spray Good.

I will say that in the case of the mites, they have no regular season of development. Their breeding in serious numbers occurs only when temporary favorable conditions invite a sudden great onslaught upon tree or fruit when the few making up the slight infestation become myriad by their deposit of millions of eggs, each of which may produce a spider in a few hours. These "favorable conditions," however, are more apt to occur just after blooming of the trees in the spring, and again in the fall after water becomes scarce and trees get dry. Little fear of mites need be felt in continued wet weather.

None of the oil sprays kill the eggs of mites, most of the killing done being by reason of the force of the spray knocking the mature mites off on to the ground, some of course, being killed by contact with the oil particles. The unhatched eggs, however, may reinfest the grove in a few days. Pure water, with a power sprayer, is nearly as effectual against the mites and will not ruin the tree as will the oils sooner or later.

But why either, when dry sulphur and hydrated lime equal parts applied throughout most parts of the tree with a blower or even by hand, is the cheapest application known, and is effectual for months, the fumes killing each mite as it emerges from the egg? Sulphur spray, while equally good, is difficult to prepare and ruinous to your machine with no advantage except to stick to the tree better (an advantage more apparent than real.) With the sulphur process more system can be used. Applied after the rains have ceased in the spring, if high grade sulphur is used, your grove is protected till fall, when if a fall invasion is feared, apply again in October. This latter application alone is all that is necessary where silver mite alone is feared on orange trees. I have treated both of the mites in a general way only.

The Silver Mite.

I think I have made an important discovery about the silver mite, which is so little known here (it being so microscopic in size that no ordinary search ever discovers it) but will try to write of it later.

The Scale Bug.

Of the scales mentioned, the black scale produces but one brood each year, and since the advent of the parasite, (Scutellista cyanea), this breeding period has been reduced so that all young should be out by September 1st and, upon young vigorous trees and rebuds, a month earlier. All old scale are then dead and the young ones extremely small and easily killed for two months, and reasonably so for three months.

All The Year.

The red and purple scales, while differing greatly from each other in maner of producing their young and in other particulars, are still nearly alike in their periods of breeding and in their susceptibility (or better their resistance) to treatment, so that for the purposes of this article, they may be treated alike. These insects are putting forth young in some degree at any time in the year, although very sparingly in the colder parts of winter, while by far the greater part of their increase is in September and October. These females die after reproduction takes place, so that it follows that in Noyember there are fewer living old scale and vastly greater numbers of young than at any other season, and as spraying only reduces their numbers and never eradicates these pests, November spraying will kill greater numbers than that done at other times. On the other hand, if this period is awaited, the greatest spread of the infection has been insured as they spread only during the first few hours of their existence.

Treatment.

Summing up then, if we are to use sprays for the mites, we should spray only when they become very numerous on the trees. If sulphur is used, apply May 1st to June 15th and in October. Black scale (if sprayed) September 1st to November 1st, black scale (if fumigated) September 1st to February 1st, increasing dosage for last two months.

Red and purple scale (if sprayed) October 15th to December 1st; red and purple scale (if fumigated) on lemon, any time; red and purple scale (if fumigated) on other citrus trees, avoid the first two months after the young fruit sets.

As to Use of Distillate and of Coal Oil.

I can not answer with certainty, but will say that three per cent distillate is as safe upon lemon as two per cent is upon orange trees. Both injure the trees and fruit, and sometimes terribly, depending largely upon whether delivered under high pressure (thoroughly mixed) or under low pressure, as with hand machines. The emulsions of these oils are much safer than the mixtures, but less effectual killers of the scales.—C. E. Beemis, Covina.

Citrus Conditions in Northern California

THE recent cold spell in California was one to try out citrus conditions as regards freezing, in all sections where citrus fruits are growing. It was interesting for us to watch the effects of the heavy frosts on the lemon and pomelo especially. There are no groves of either of these fruits in the vicinity of Marysville, but isolated trees in door yard collections are not uncommon.

Not Injured by Frost.

The citrus trees of all kinds in the city of Marysville are not injured in the least. A small collection of trees containing Navels, Valencias, seedlings, sweets, St. Michaels and lemons, in full bearing and growing in a low flat section of the country which was flooded during the recent high water, was absolutely uninjured by the cold or flood that followed. The fruit of the lemons was injured to some extent, but the leaves and new growth showed no effect of the frost other than the usual dull appearance which soon gave way to the bright green color when warmer weather and rains came. On my own place is a large lemon tree that was cut back to a mere stub and transplanted a year ago, and having made a new growth of five or six feet last summer, growing late into the fall. This tree was not injured in the least, not one inch of wood was frosted.

Our neighbor a short distance away has in his collection a young pomelo tree which went through the freeze uninjured. We bought three boxes of this fruit for our own use, a month after the freeze and these pomelos are as heavy and full of juice as any we have ever eaten in Southern California.

Moisture.

The conditions accompanying our frosty periods in Northern California are entirely different from those usually occurring in the South. Our frosts are always wet, either following a wet spell of weather or occurring during a wet spell. Our coldest night ended with a fog that left the trees mantled in a bristling frost that stood out over half an inch, giving the appearance of snow. The fog cleared at the time of thawing and all things out of doors received a drenching equal to a heavy shower. The wind changed to the north, drifting back the bay fog and we had two days of freezing, sunless weather with the thermometer ranging from 28 to 36 degrees. Occasionally the wind would veer to the northeast, where it was only 20 miles to snow and the fog would freeze to the trees.

The wind would again change and the trees would drip ice and water. This weather ended with a south fog coming off of the bay, and many sunless days ensued. It was under these conditions that the Northern California citrus belt went through its freeze.

One of the encouraging features of orange culture in Northern California is the tendency of the trees to bear full crops. Those paying little or no attention to orange growing are not familiar with the effect of frost. The majority of trees are in exposed places and the high winds blew much fruit off. The almost universal remark was, "I guess the frost got my oranges, because the wind blows them off." The facts were, the oranges were heavy and solid and full of juice. They were also almost fully ripe, which would have a tendency to make them blow off easily.

Oranges split quite freely in Northern California early in the winter, which goes to show that we can expect to deal with many vexatious problems as well as do our southern friends.

Taking it all in all the outlook for profitable orange growing in this part of the state is very bright. I have been asked if the conditions during the past season have discouraged me from carrying out my intention of planting a commercial grove. Quite to the contrary, I am more enthusiastic than ever on the subject.—J. W. Mills, Marysville.

Citrus Culture in Tulare County

Mr. A. G. Schul z of Porterville, favored us with the following account of Tulare citrus conditions. Mr. Schultz is one of the standbys in the Tulare county citrus section and believes in the future of the citrus in that community implicitly. It is surely a beautiful sight to look upon to ride through the orange groves of Tulare county as did the writer a few months ago and see the foothills of the Sierra Nevadas covered with orange groves which are bringing in wealth and fame to Tulare county.

Development and changes follow each other in rapid succession. What is scarcely known, or is deemed a luxury today, will in a great many cases become a necessity tomorrow; and the orange has certainly not escaped this trait of the human family.

Twenty-five years ago oranges were bought mostly by the wealthier classes, now the person who does not buy oranges is an exception; and this universal demand is, of course, responsible for the extension of the orange industry.

Local Citrus History.

Tulare county did not feel the impulse of the development of the orange industry, until the latter eighties, when oranges were first planted here in commercial quantities. To be exact the history of the citrus industry is as follows:

In 1863 Mr. D. Gibbons and Mrs. H. M. White each planted a few orange seeds, from which they raised perhaps a dozen trees that bore some of the finest seedling oranges ever produced in the state. This fruit took first prize at the Los Angeles Citrus Fair in 1883 and again in 1892.

Encouraged by the showing that these trees made, Mr. Albert Henry in 1882 planted sixty or seventy trees, that were shipped here from Southern California, and this plant proving a success, induced Mr. George Frost of Riverside, Cal., to interest some of his friends in this section, which resulted in their planting about one hundred acres during 1888 and 1889. From this time on, planting continued steadily, until at the present time, there is a continuous stretch of orange orchards, from a few miles north of Exeter, to ten or twelve miles south of Porterville, comprising an extent of about thirty miles, skirting the foothills, and yielding an output this year of over 2500 carloads. To understand what these figures signify it must be borne in mind that this is all a new district, and that the bulk of the orchards are not yet bearing. At a conservative estimate we should double this output in the next three years.

Our commercial record is as well established as our show or fair record proves. Owing to the absence of early fogs and sea breezes, our climate during the summer and early fall months is more equable, and the absence of chilly nights permits the uninterrupted development of sugar in our fruit, which is the reason of even a green orange showing a very high percentage of sugar, and insuring it to color when picked quite green.

Ship Early.

We endeavor to have the bulk of our crop in the packing house by the middle of November, and by the 10th of December the hum and buzz of the orange has ceased until the next season.

The climatic conditions which are responsible for our fine oranges, also evolve for us out of nature's laboratory a lemon, which for keeping qualities, appearances and acidity are hard to equal. Our dry atmosphere produces a rind which is solid and compact, and capable of resisting decay much better than the same fruit raised in a more humid climate, and our frosts are not severe enough to injure either the fruit or tree. Wherever the lemon has received the attention that it requires, it has proven a success and a money maker, as a good

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many growers in our midst can testify.

Returns.

Perhaps a few words in regard to the monetary returns of this industry would not be out of place, as this seems to be the standard by which we measure the success or failure of the majority of our efforts.

Of course, every undertaking carried on for gain depends largely on the personal efforts and ability of the person handling the affairs; where the qualified man makes a success, the other one makes a failure; but any intelligent person who is willing to follow a few simple rules, and is not afraid to work can make money at this industry here.

Most of the newer sections receive their irrigating water from wells, an abundance of water being found at a depth of one to two hundred feet; this is brought to the surface either by electric power or gas engines, making the cost of irrigating only a little more than with gravity water.

The great improvements that have been made in pumps, and the reduction in cost of power, by the gas engine and the electric power plants, have enlarged the area of orange planting to an extent not dreamed of ten or fifteen years ago, and have made some of the finest land in the state available for citrus planting which heretofore was considered almost worthless.

Free from Pests.

The one great advantage claimed for this section is the early ripening of the orange; but in my opinion the fact that we are entirely free from injurious insect pests or scale is a far greater advantage. There is today not a citrus producing section of equal extent, that can show as clean a record; not a red or yellow scale, not a purple scale, not a black scale, to mar or smut our fruit.

Is this not a great blessing? Ask the grower, who has to fumigate or one who has to wash and scrub his fruit. By diligent and conscientious work, we have so far kept the district clean, and now that its importance is still better understood, and the extent and value of the industry has so much increased, there seems no reasonable doubt, that this policy will insure us the same protection in the future.

Co-operative Marketing.

Our fruit is marketed principally through the California Fruit Exchange and the California Citrus Union; the Exchange, I believe, ships about 50 per cent of the fruit. There are also a few firms which ship a limited amount of fruit.

Got To Work.

If anyone should inquire about the drawbacks that there are to this industry, I certainly could not give him much information, for, so far I have only found one, and that is, one has to work to make a success even in the orange business.—A. G. Schulz, Porterville.

The Desert Producing Oranges

A year ago when the Cultivator issued a citrus number Mr. D. G. Whiting of Heber, told us of the possibilities of growing oranges below sea level. The hopes which he then expressed for the citrus industry for that section have been strengthened by the past year's experience. His statement as to the lowest temperature and the highest temperature which appears in the following article and the fact that the trees have, during the year, shown a marvellous growth goes to indicate that from a citrus standpoint the future of Imperial will be fully as great as has been hoped by its most ardent supporters. So far as we have ever heard the citrus fruits of the Imperial valley have been praised by all who have eaten them.

I AM glad to be able to tell you that the health, growth and fruiting of the few trees already in bearing has fully met our expectations of a year ago. Several orange trees, three years old, in their fourth year from planting, have produced more than a box of fruit each, pronounced by expert orange growers to be the very best quality. The same trees have grown to a height of nine or ten feet and about the same in breadth. A Villa Franca lemon tree the same age, and cut back four or five feet the year before, is very much larger, and has already produced more than three boxes of lemons of the finest quality. As near as I can learn there were about 200 acres planted to oranges last year, also a few lemons. All are reported as making an exceptionally good growth. Before that only a few had been put out for experiment, by a dozen or so different parties; less than an acre all told. There is no settled method or time for irrigation. Mine have been irrigated about once a month during the summer, going two or three months in winter. Our total rainfall this winter so far is less than 1 inch. What you on the coast designate as a wet season, does not occur here. This is a dry climate, in fact.

Trees are planted about the same distance apart as in other sections, mostly 20 feet.

The Washington Navel is considered the best variety. I have never seen any trees protected from heat. Plenty of water is all the protection they need, but the water, when irrigating, must not stand too near the trunks or they will scald in hot weather. The hottest weather recorded in the past six years has not exceeded 118, and I think has reached that point but three times. The coldest weather recorded this winter was 33 degrees, a point reached three different mornings. The tender new growth on the lemon trees has not been injured in the least, and the trees have never been given any protection.

The oldest lemon tree has been blooming more than a month and has many young lemons larger than peas. The orange trees are just budding. We are experimenting along several lines. If we can hasten the blossoming and setting of fruit by a certain method of applying the water, and then by taking advantage of heat and sunshine in summer produce a ripe orange in October, where! oh where! will the sour orange be when it comes to the early market? Our oranges were ripe and sweet early in November last year; in fact they were quite sweet in October, although showing no color.

The citrus industry surely looks very bright to us here in the Imperial Valley and a large acreage will be planted out this season.—D. G. Whiting.

THE KIND GARDENER.

"Willie's digging out the lettuce!
Bessie's pulling up the peas!"
"Precious darlings! Let 'em go it—
Anything, you know, to please."

A New Hampshire newspaper man who is very fond of honey visited a nearby city, and at one of the hotels he was served with some that was delicious. He enjoyed it so much that he told his wife all about it when he returned home.

On his next trip to the city she accompanied him. They visited the same hotel, and when the noon meal was served he said to his wife he hoped they had some more of the honey.

It did not appear, however, and, beckoning to a waiter, he said: "Say, Sam, where is my honey?"

He was almost paralyzed when that worthy grinned and replied: "She doan' work here no more, boss; she done got a job at the silk mill."

The wife received a handsome new dress before they returned home, after making a solemn promise not to tell the story.—Boston Herald.

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We recently saw a letter from Wm. Underwood, of Patchogue, N. Y., addressed to the John A. Salzer Seed Co., La Crosse, Wis., that has this to say:

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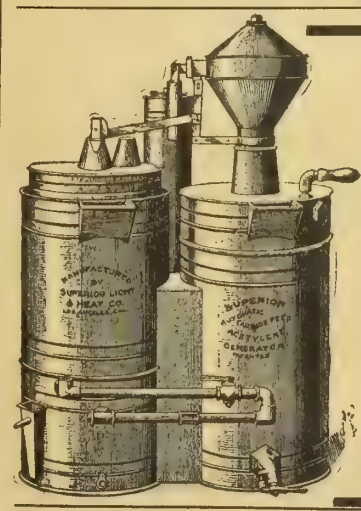

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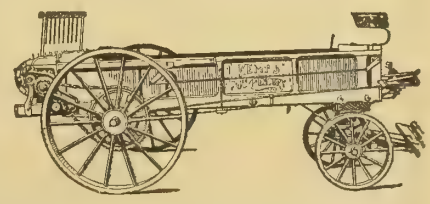

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FRESNO, CALIFORNIA

The Oranges of Fresno Foothills

Fresno county has never had a great reputation as a citrus center. It has, however, gone on developing those sections which were congenial to this king of the fruits. The Cultivator wished for this issue a short statement concerning citrus conditions up there and applied to that busiest of all men, Mr. Geo. C. Roeding for such information as he had at hand as to citrus productions. It being the busy season of the year Mr. Roeding has been unable to give very extensive attention to the matter, but the following concise statement shows that Fresno is on the citrus map of the state.

FRESNO county ships on an average of 200 cars a season. The shipments for 1908-09 up to date are about 175 cars. There are quite a number of young citrus orchards located around the city of Fresno and all of them have been quite profitable in recent years. I know of one orchard located about six miles from Fresno, consisting of 14 acres, which has paid a net income of $4000 to $5000 a year in the last six to eight years. This is sufficient evidence of the success of orange culture on the plains in this particular locality.

The great advantage which Fresno possesses over other localities where there is not so much heat during the summer months, is that the oranges ripen from a month to six weeks earlier, and this gives us an opportunity of getting our fruit on the market to take advantage of the Thanksgiving and Christmas trade. Within the last five years very extensive plantings of oranges have been made along the foothills of this county. These trees are doing remarkably well and producing fruit of a very high order. The soil conditions are practically the same as those in Tulare county, so there is no reason why Fresno should not become a factor in the citrus fruit business. There is every reason to believe that the industry will extend from year to year and it is really remarkable the amount of interest which has been manifested in citrus culture at the present time not only here but in all sections of the state. Probably about one-half of the growers of this county are affiliated with the California Fruit Growers' Exchange. Thus far the planting of varieties has largely been of the Washington Navels and Thompson's Improved. During the last two years the demand for Valencia Lates, however, has been very heavy indeed. My private opinion is that the Navels will always be a better variety to plant here than the Valencia. Still the enormous profits which have been derived from the Valencia Late oranges in recent years are undoubtedly the cause of the great demand for this variety.

Lemons are not very extensively planted and in our opinion they are only adapted to the warmer sections along the foothills. One of our most successful lemon growers is N. W. Moodey and it is a well-known fact that his orchard has been enormously profitable. He has in the neighborhood of 20 acres in lemons in the thermal belt along the foothills of the Sierra Nevada mountains.—Geo. C. Roeding, Fresno.

Railroads Can Assist Farmers

ON account of the National Corn Exposition held in Omaha, Neb., in December, the railroads, recognizing the value of better and increased crops of corn, hauled free the exhibits intended for that exposition. Extra baggage cars were carried, which stopped at the county seats, and the exhibitors had only to haul or express their corn, wheat, oats, or alfalfa to the nearest stopping point, from which these goods would be carried to Omaha without charge. The exposition furnished with each car an attendant who was in charge from the starting time until its destination was reached, and looked after the exhibits. This insured their arrival at Omaha in the best possible condition and in good time. This favor was much appreciated by the exhibitors and farmers throughout the great corn-growing belt.

The railroads are much interested in the production of profitable grain crops, since it not only means many more tons of grain to haul, but more carloads of fat cattle, hogs and sheep. It means greater prosperity for the farmers, who will then buy more farm implements, wagons, automobiles, building material, clothing, etc., the transportation of which increases the earnings of the railroads. Since this is all true it is unfortunate that the railroads charge such a high rate for handling commercial fertilizer. According to statistics, in 1907 the tonnage of commercial fertilizers in the United States was 5,000,000 tons, and for handling the raw material, complete mixtures, etc., the total earnings of the railroads was $25,000,000. This does not include the freight paid on coal, bags and supplies used by the fertilizer plants, nor the transportation paid by the traveling salesmen.

As Professor Francis Wyatt has said: "Nothing can stem the demand for artificial fertilizers." Their consumption is increasing daily, and this because a profit always follows their intelligent use. A ton of fertilizers will produce, on an average, three times its weight in farm products. This is accounted for by the fact that the soil is usually deficient in but three ingredients, nitrogen, phosphoric acid and potash. The fertilizers supply these three ingredients only, while the farm products contain a number of other elements which the fertilizers assist in abstracting from the soil. The supply of barnyard manure is wholly inadequate to return all the plant food that has been removed by large yields of grain, fruit and grasses, and fertilizers will, without doubt, be used more liberally each year.

In some states the railroads have generously supplied lecture and demonstration trains and have sent them to all parts of the states, carrying experiment station men and other able lecturers to address the farmers on how to improve their soil, their crops and their general condition, have taught him how to use fertilizers intelligently, and then, when the farmer wished to purchase fertilizers, he found that the railroad charged almost a prohibitive rate, especially when less than a carload was ordered. Since the earnings of a railroad company will rise or fall in accordance with agricultural prosperity, it is to be hoped that they will soon reduce the rate on a commodity which, when properly used, will increase the yield of farm products and thus give the farmer additional purchasing power.

Fair Visitor—So you have really decided not to sell your house?

Fair Hostess—Yes. You see, we placed the matter in the hands of an estate agent. After reading his lovely advertisement of our property neither John nor myself could think of parting with such a wonderful and perfect home.—Tit-Bits.

"Ma," remarked the small boy, "isn't it funny that everybody calls little brother a bouncing baby?" "Why do you think it's funny, William?" returned his mother. "Because, when I dropped him off the porch this morning he didn't bounce a bit; he just hollered."

A young cigarette smoker watching the monkeys in a menagerie, said to the keeper, "Would it do any harm to offer one of them a cigarette?" "Not a bit," replied the keeper; "he wouldn't touch it. A monkey isn't half as big a fool as he looks."

SOME SATISFACTION.

It costs a lot to live these days,
More than it did of yore;
But, when you stop to think of it,
It's worth a whole lot more.

—Judge.

California Fruit Growers Exchange

Eighth Floor H. W. Hellman Building, Los Angeles

Foremost of All Shippers

In advertising California oranges and lemons.

In obtaining packing materials at reasonable prices.

In protecting transportation, refrigeration and tariff matters in connection with the Citrus Protective League.

In even shipment of fruit and proper distribution in the markets.

Thru advertising, experience so far shows that 50 per cent more oranges can be forced into consumption without lowering the net return to the growers.

Thru long time contracts, experience shows that box shook can be bought at a fair figure and without the hold-up prices that have sometimes prevailed in the past.

Thru proper duties levied on imports of oranges, experience shows a vast growth in the California orange industry and with a duty on lemons of 1½c per pound, experience will show a like growth of the lemon industry.

In even shipment and even distribution after shipment, the experience of the last few years shows that the Exchange policy of adjusting its business thruout the country to fit that of its competitors without antagonizing them, is a winner.

Can the growers afford to do business outside the Exchange? If so much can be accomplished with 55 to 60 per cent of the crop in the Exchange Fold, could not much more be done with increased benefit to all if 75 per cent acted together?

California Fruit Growers Exchange

DEAD CITRUS WOOD

Is more or less prevalent in every orange and lemon grove, i. e., trees that are unprofitable. How many such have you in your orchard? Would it not pay you to put paying trees in their stead?

Your Home Grounds

Should contain at least a few trees of the better varieties of oranges and lemons. For this purpose we have some exceptionally fine trees to offer, being grown as specimens. Possibly you would like to plant a few citrus trees about your home this season. If so, will you do us the favor to correspond with us about it?

Citrus Fruits

Historically, Horticulturally, Commercially.

Our new booklet gives more valuable information about varieties, methods of planting, cultivating, pruning, picking, packing and shipping than anything of its kind ever issued. Sent anywhere for the small sum of 25 cents. Correspondence a pleasure.

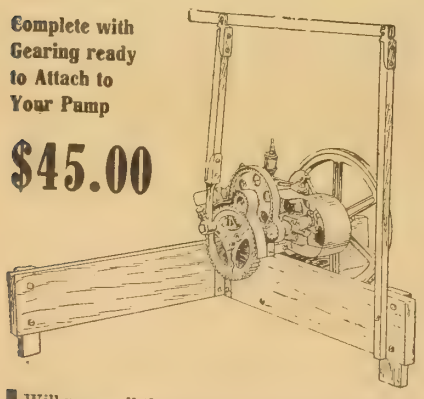
The San Dimas Citrus Nurseries

R. M. Teague, Proprietor
San Dimas, California

Aermotor Gasoline Engine

Complete with Gearing ready to Attach to Your Pump

$45.00



Will pump all the time, wind or no wind, and deliver as much water as an 8 ft. Aermotor in a good wind.

From 225 to 1600 gallons per hour, depending on height water is to be raised.

Air cooled, uses Gasoline or Distillate.

A reliable, durable engine at a very low price. **Can You Afford** to be without one.

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Machinery and Supplies

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FOR SALE

Choice two-year orange seed bed plants—sweet stock. Call or address

F. J. LOCKE, 27 Stockman Ave. Alhambra, Cal.

When writing advertisers, mention Cultivator.

Oranges in Imperial Valley

The following article written by Mr. H. C. Oakley and printed in the Brawley News gives the citrus situation in the Imperial Valley very forcefully. Plainly the Imperial people will be a factor in supplying the early orange. We do not think the lemon will be as successful as the orange. It may be a good grower but do not think it will be as good shipper as the coast grown lemon. We do not assert this positively for the Imperial Valley has upset too many theories to make positive assertions safe.

THE conditions for citrus fruit culture in the Imperial Valley have been so far proven during the past five years that I now consider it is reasonably safe to advise anyone looking to citrus culture as an occupation that the north-western part of the valley today presents a most promising field, when the price of land and water, character of soil, time of ripening and small necessary cost of fertilizer for the bearing orchards are taken into consideration. Necessarily a great deal has yet to be learned. Five years of careful study of the experimental grove in the Imperial Investment Company's grounds at Brawley, together with other scattering citrus trees in various parts of the valley warrants the above conclusions.

The great problem confronting us today, and the one which contains an element of risk is, "what variety to plant." The older orange growing sections of Southern California went through the successive stages of experimentation and finally evolved the fact that the Washington Navel and Late Valencia oranges and the Marsh seedless grapefruit and the Eureka, Lisbon and Villa Franca lemons are the true staples, with the tangerines, bloods, Mediterranean sweets and seedling oranges adapted to certain sections, due to local conditions of soil and climate. In the proven orange territory of Southern California, it has been demonstrated that the Washington Navel produces a superior quality of fruit in certain localities widely scattered from each other, when to all appearances to the casual observer the soil, water and climatic conditions are identical, and the same is true regarding the late Valencia, and of the different varieties of lemons. Again it has been demonstrated that the Washington Navel tree is rather a shy bearer in the orange growing section of the Salt River Valley, Arizona, and at Yuma, where climatic conditions are quite similar to the Imperial Valley. The prices obtainable for the Arizona fruit for the past three years, in direct competition with the Northern and Southern California crop, clearly show that one-half the quantity of fruit of such a quality at that season of the year will bring more money to the grower than can be had for double the amount of other fruit.

The quality of Washington Navel oranges grown at Brawley is fully equal to the best Arizona, and ripens even earlier than in the Salt River Valley, but is apparently subject to the same characteristic of being rather a shy bearer as compared with other sections of California, but fully as heavy as in the Salt River Valley. It is therefore a safe tree to plant. The experimental orchard in the Imperial Investment Company grounds surrounding its office at Brawley, contains the following varieties: Washington Navel, Thompson Improved Navel, Navelencia, Late Valencia, Tangerine, Imperial grapefruit, Villa Franca lemon and Seedling orange trees. These trees were planted five years ago last May. The Washington Navel and Thompson Improved Navel have borne a fair crop each year since the first, increasing as the trees attained size. The Navelencia, Tangerine, late Valencia and grapefruit have all borne remarkable crops for the age of the trees. The trees are planted 10x20 and surrounded by large encalyptus and Carolina poplar trees on two sides and by a large grape arbor on another side, thus having only an indifferent chance to do their best. It has also been impossible in so small a space to give them the usual thorough orchard care. Notwithstanding all these drawbacks they have made a most remarkable showing. During the past three years I have taken pains to have samples of the fruit get into the hands of the manager of the Southern California fruit exchange as well as other experienced orange growers and handlers, at the time when the fruit was at its best, in November, and I have yet to find any one who failed to praise it in the highest terms. I have noted from year to year that the Navelencia and the late Valencia trees especially, were both very heavy bearers. The Tangerine orange is most promising. Ripening as it does here in November and December, attaining a deep red color and a fair size, it comes in at a time when the regular California crop is only fit to look at and not very good for that. It is a very heavy bearer and very profitable if ripe and sweet for Thanksgiving and Christmas trade. The grapefruit is second only to the Navelencia in promise of large returns. Ripening as it does also in October, November and December it will command the market west of the Rocky Mountains until such a time as the California crop gets to be fit to eat.

My observation of the few lemon trees that have fruited in the valley leads me to believe that it should be placed third in the list of citrus fruits that can be profitably grown. The quality is most excellent but so far as my observation goes the crop will come in at a time when the largest part of the California crop is in, and hence will come into competition with it, and the same would be true of the Late Valencia and Seedling oranges to some extent, while the Navelencia, Navel, tangerine and grapefruit crops will fit into the time in the market between the late Valencia crop of Southern California and the early navels of the Northern California groves at Thanksgiving and Christmas time, bringing us the cream of prices for the rich, sweet fruit that we can produce.

"The woman who strengthens a husband's belief in himself is a rare wife," observes Appleton's. Yes, and the woman who supplements that by strengthening his trousers buttons and reinforcing his shirts in various particulars, is still rarer. In short it's a rare combination.

An Undetermined Name.—Caller—What's your name, little girl?"

Little Girl—"Dorothy."

Caller—"But what's your last name?"

Little Girl—"I don't know what it will be. I'm not married yet."—London "Globe."

"Tommy," said the boy's father sternly, " where are those six apples I left on the table?"

"Father," said Truthful Tommy, "I did not touch one."

"Then how is it that there is only one apple left?" demanded the father.

"That," replied Tommy, "is the one I didn't touch."—"Chums."

A large acreage of Thompson seedless vines has been planted near Yuba City.

HARVEY SPRINGS HELP CROPS PAY

Competition in the fruit, egg and vegetable markets and in general farming has made the Harvey Bolster Springs a necessity for farm wagons.

Farm economy demands the adoption of the Harvey Springs, for they double the life of the farm wagon. They can be applied to any farm wagon in two minute's time.

The Harvey Spring Co., 411 17th St., Racine, Wis., guarantees them to retain their strength and elasticity for years, and in proof of their own confidence will allow any farmer to equip a wagon with the springs and use them for 30 days, free of charge, as a test. They invite farmers to write to them on this matter, giving the weight of the heaviest loads they haul and their dealer's name. The Harvey Spring Co. will then arrange with the dealer to give the applicant a set of springs for 30 days' trial, and will also mail to the applicant a complete catalog telling all about the Springs.

SAMSON WIND MILLS

Have double gears, removable bearing and center lift, which double the life of the mill. They will last longer, pump more water and give better satisfaction than any other WIND MILL.

This is an up-to-date Sub-structure, Tank and Wind Mill outfit complete; substantial, economical and attractive. We build all kinds. Write us or our general agents for full information and prices, description &c., before purchasing.

The STOVER MFG. CO.
FREEPORT - ILLINOIS
California Avenue
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General Agents for California

300,000 Feet Water Pipe Cheap

ALL SIZES

150,000 feet of this shipment is second-hand pipe, practically as good as new, and is now on sale at a big discount by the Adams Pipe Works, 2025 Bay street. Sizes and prices: ¼-inch 2 cents per foot; ⅜-inch, 2 cents per foot; ½-inch, 2¼ cents per foot; ¾-inch, 3 cents per foot, 1-inch, 4¾ cents per foot; 1¼-inch, 6 cents per foot; 1½-inch, 7 cents per foot; 2-inch, 9¾ cents per foot; 2½-inch, 15 cents per foot; 3-inch, 19 cents per foot; 3½-inch, 24½ cents per foot; 4-inch, 30 cents per foot. Oil well casing prices and sizes: 2-inch, O. D. 7 cents per foot; 2-inch, I. D. 9 cents per foot; 3-inch, 13½ cents per foot; 3¼-inch, 16 cents per foot; 3½-inch, 17 cents per foot; 4-inch, 20 cents per foot. All pipe is carefully inspected, new couplings and new thread are put on every piece, every joint is guaranteed to be first class, serviceable pipe. Mail orders promptly filled. To reach the Adams Pipe Works in Los Angeles, take car marked Pacific Boulevard, starting east on Seventh street from Broadway. Ask conductor to let you off at Bay street and go east half a block. Phones, F1917, Broadway 1264.

MORE GOOD CIDER OR GRAPE JUICE

can be made from a given amount of apples or grapes with one of our presses than with any other. The juice will be purer and bring higher prices, while the extra yield soon pays for the press. We make

HYDRAULIC Power Presses

in all sizes, hand or power, 25 to 400 barrels per day. Also Steam Evaporators, Apple-butter Cookers, etc. Fully guaranteed. Catalog FREE.

The Hydraulic Press Mfg. Co.
Box 23 Mt. Gilead, Ohio

Orange Trees For Sale

Dormant buds, Navel and Valencia.

J. S. Killian, El Monte, Cal.
Phones: Sunset, 8x4. Home, Red 31, or.
L. C. Rice, Tropico, Cal.
Phone Sunset Glendale, 263

When writing advertisers, mention Cultivator.

Organized to Fight Pests

THE Cultivator has referred to the organization of Highland fruit growers, the object being to prevent the introduction to that section of any pests injurious to the great citrus orchards. Or further, should these pests be introduced, to have a strong organization willing and able to take up the fight and carry it to a successful conclusion. In the entire district are about 4000 acres of citrus orchards. Practically all of this has already joined the new movement and it is safe to predict that it will be handled with sufficient intelligence to make it a great success. The movement is not alone confined to Highland, for other sections are considering similar organizations. We do not know that they are patterned after this one, but the aim in all is practically the same. Wishing an authoritative statement as to the scope and plan of organization, we have from Mr. S. H. Barrett of East Highland the following short statement together with extracts which we have made from the by-laws of the organization, or rather, the Growers' Agreement. Regarding the movement, Mr. Barrett says: "I can assure you that Highland considers her freedom from scale a valuable asset and we are taking every possible precaution to prevent the introduction of any dangerous pest. Through the initiative of the Highland Chamber of Commerce we have organized the Highland Protective Association and have signed up about 3400 acres out of a possible 4,000. The copy of by-laws will show you the modus operandi of the organization and we feel confident that we can hold the enviable position of freedom from scale, freedom from frost, and wear the Gold Buckle of the Citrus Belt of Caffifornia."

From the Growers' Agreement we take the following purpose and provisions: "The purpose of this agreement is to provide a common fund and secure efficient co-operation for the protection of the orchards of the subscribers from scale and other insect pests. * * *

"Any person or corporation shall be eligible to become a subscriber who shall be the owner of land within said area, and which shall at the time of subscription, be planted to orchard or nursery, provided that after the first day of January, 1909, no party shall be eligible to become a subscriber whose orchard shall at the time be infested by scale or other insect pest.

Every subscriber, at the time of signing this agreement, shall annex to his signature the date of his subscription, together with the number of acres on account of which he subscribes, and such designation of the land shall be sufficient for its identification; and he shall at the same time pay to the person or committee authorized to receive the same as hereinafter provided, a subscription fee of $.25, (twenty-five cents) per acre of such land."

Other provisions such as the privilege of a member withdrawing from the Agreement in case he sells his property, also for the new purchaser of the property becoming a member, together with the manner of handling the funds and collecting same, and the manner of voting and electing officers or directors follow. Again we quote from the Agreement:

"Whenever the County Horticultural Commission, or any board or officer having lawful jurisdiction in the premises, shall lawfully require any trees growing upon land of any subscriber, to be fumigated or sprayed or otherwise treated, to prevent or destroy scale or other insect pest, or shall lawfully require such subscriber to pay the cost or charge of such treatment, it shall be the duty of such subscriber forthwith to notify said executive committee, through the member in his section, of the fact, and thereupon it shall be the duty of said committee or the member so notified, for and on behalf of such subscriber, to cause such trees to be treated under the direction of the County Horticultural Commission, and such cost or charge to be paid out of and to the extent of any moneys in the hands of said committee or that shall come to its hands, or, if such cost or charge be in the first place paid or advanced by such subscriber, then to return the amount thereof to him, out of and to the extent of such moneys.

"Whenever said general committee, by a majority vote of all its members, shall determine that the common interest or benefit of all subscribers require that any measure, other than or in addition to any lawful requirement aforesaid, should be taken to protect the trees upon the land of subscribers generally, or upon the lands of any subscriber, against the introduction or spread of scale or other insect pest, it shall be the duty of that committee to report such determination to said executive committee, and to direct said executive committee to carry out such measure, and thereupon it shall be the duty of said executive committee to carry out such measure, to its extent of its means to do so, after first providing or allowing for the cost or charge of any lawful requirement aforesaid.

"In order to provide means for defraying the expense and carrying out the purposes aforesaid it shall be the duty of said executive committee from time to time, as occasion may in their judgment require, to levy assessments upon all subscribers in proportion to the number of acres covered by their respective subscriptions, and not exceeding in any twelve months an aggregate of $1.00 per acre."

Other provisions follow such as penalty for non-payment of dues, duties of the committee, and the statement that this Agreement shall be in force until the first day of January, 1914, at which date the agreement shall terminate.

Kings County has a supervisor who has secured the name of The Good Roads King.

ENLIGHTENED SELF-INTEREST.

There is one motive behind all business dealings, the mainspring of all business transactions. People buy and sell with one fundamental object—the hope of gain. It is a matter of self-interest pure and simple and doubtless will remain so to the end of the chapter. The difference in merchants lies in the fact that this self-interest may be brutal and unprincipled with the result that it is short-sighted and considers only temporary gain or that, on the other hand, it may be controlled by the highest aims and be rewarded by permanent success.

In the United States one of the most conspicuous examples of self-interest wisely consulted is the seed business of D. M. Ferry & Co. We do not know how it would be possible better to serve the purchasing public than by their method of supplying annually every local dealer in the country with seeds freshly put up and then at the end of the season removing from the retailer all stocks left on hand, thus preventing the possibility of unfit seeds being carried over for another spring. By regarding primarily the interests of the purchaser, D. M. Ferry & Co., have grown to be the largest seed-house in the world. This success has necessitated systematic organization and made it possible not only to specialize but to have the best physical equipment in America.

Learn more about reliable seeds by writing to D. M. Ferry & Co., Detroit, Mich., for their 1909 Seed Annual which is sent free on request.

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Especially adapted for citrus orchards. Sizes 7 to 14 ft. Lightest draft. Write today

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Save Time—With the Brewster Picking Sack—Save Fruit

A new method sack—invented and perfected by lifelong growers. Eminent orchardists pronounce it perfect. Those who have tried it say they would not be without it. Actual tests show that a man can pick twenty-five per cent more fruit with it and with greater ease.

Sack forms semi-circle about picker's body—is supported by straps over both shoulders and held tight by belt around body. The picker can thus work with ease either on ground or ladder. When full, it does not extend below the hips.

A great feature of the Brewster Sack is the patent gate (see illustration) WHICH PRACTICALLY ELIMINATES BRUISING. Simply unfasten a hook—the gate drops—and the fruit can be quickly but very gently poured out.

The sack holds as much fruit as the old style sack.

Made in two grades.

Regular picking sack grade, sent express prepaid for $1.50.

Special extra quality—that will outlast two ordinary picking sacks—express prepaid $1.75.

Sierra Madre Sack Co., Sierra Madre, Cal.

We want reliable men in every locality to demonstrate this sack and act as our agents.

The Roessler & Hasslacher Chemical Co.

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Works: Perth Amboy, N. J.

CYANIDE guaranteed 98-99% for generating HYDROCYANIC ACID GAS

The only positive eradicator of the SAN JOSE SCALE, RED and BLACK SCALE and other insect pests

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HAAS BARUCH & CO., " "

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Grower and Dealer in Citrus and Deciduous Trees of all Standard Varieties

Soft Shell Walnut Trees, 1, 2, and 3 years old. Grafted Placentia on Native Black Walnut Root and Soft Shell Root. Street and Ornamental Trees, Palms, Dracænas, Blue, Red and Sugar Gums (large stock.) Write for prices.

Sales Yard—Corner Sixth and Main
Residence—Tenth and Bush Sts
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Phone—S. S. Red 92

Large Orange Seedlings for Orchard Planting

Eureka Lemons, Pomelos. Santa Barbara Soft Shell Walnuts, Phoenix Canariensis and Washingtonia Robusta Palms, Camphor Trees, Acacias, Roses, etc.

Southland Nurseries, F. H. Disbrow, Prop.

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Farmers, Take Notice

To increase your crop in quantity and quality you must fertilize. The Tom Lewis fertilizer insures big crops for everything that grows. The best and cheapest fertilizer made. It is the farmers' money maker. No trouble to use. Big crops are sure to follow. This fertilizer produces 6 to 10 pounds of grapes to the bunch. For catalogue and prices write

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The Arnott Double Disc Harrow

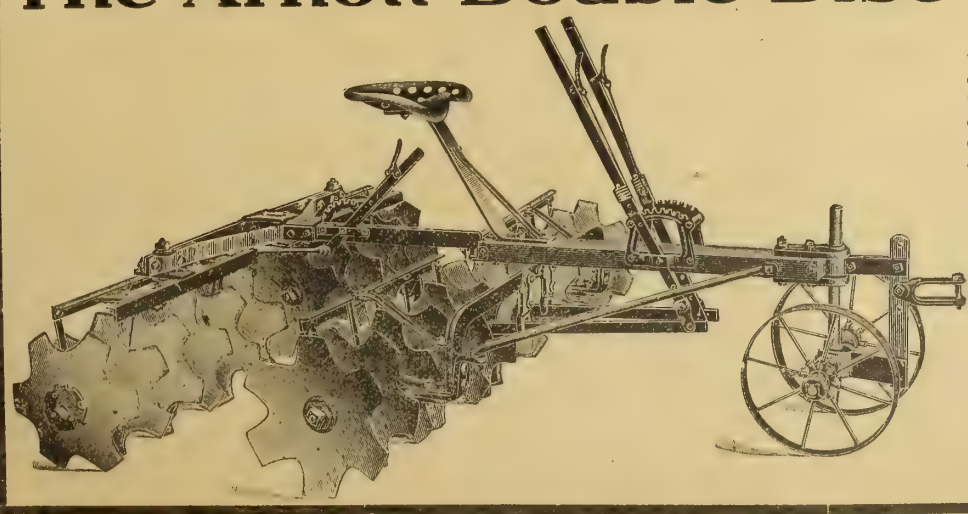

Illustration is given above of a new tool designed especially for California orchards and general field work. This consists of a combination of two cutaway pattern disc harrows, each 6 feet in width, each having 12-16 in. discs. The rear harrow can be detached by removing one pin. All harrows furnished with foretruck and 4-horse tripletrees.

Price f. o. b. Los Angeles $60.00. Complete descriptive circular showing several views of the harrow mailed on application.

Arnott & Co.

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Capital and Reserve $1,300,000.00

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The Story of a Bank

In the history of banking there are very few records which equal that of this institution. Since its establishment in 1889 its deposits have steadily grown until the total resources now exceed TWENTY MILLION DOLLARS, while its capital and reserve, which stand between depositors and any possible loss, amount to over ONE MILLION, THREE HUNDRED THOUSAND DOLLARS.

Its depositors number over.....49,000
Its new accounts in 1908 were.....18,307
Its new accounts during January this year numbered 2,099
During year 1908 it paid its depositors interest to the amount of $612,288.04

4% **Interest on Savings Accounts**

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3% **On "Special Ordinary" Accounts**

Which Accounts MAY BE CHECKED AGAINST without presentation of pass-book. Interest is paid monthly on the minimum monthly balances.

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Favor us with an inquiry concerning Colt Acetylene. We shall take pleasure in sending you free of charge our excellently compiled 44 Page Catalogue containing complete and instructive matter regarding piping, fixtures, stoves and burner pertaining to this wonderful and inexpensive lighting system.

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Grafted or grown from carefully selected seed. Postal gets prices.

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Gypsum will make available the plant food in your soil and bring good returns through small investment.

Wonderful Soil Corrector

Write for prices in car lots.

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GROWERS AND IMPORTERS OF
Grass, Vegetable and Flower Seeds
All Kinds of Bulbs and Onion Sets
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Send for Catalogue. Please mention Cultivator.

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Walnuts, Fruit Trees, Flowers.

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FIGHTING PESTS.

(Continued from page 211.)

service, while the very best we could have under the existing conditions, has been utterly inadequate in keeping us fully and positively informed as to the scales now in all our orchards, and as to the exact infection movements of the red and purple scales and the mealy bug, which are now near to us, and which are infinitely worse pests than anything we have at present. Success in holding these back and keeping our region clean will depend first and foremost on a rigid and thoroughly efficient inspection service. This is the statement of the case by Professor Cook, who has given many years of close study to the matter, and I believe that he has put it exactly right. The citrus growers of this region have now taken a most progressive and energetic preliminary step in the direction of organizing and maintaining such a service, and, as you know, have established a co-operative committee for the sole purpose of bringing this about."

The manner of inspection and reporting are described at length. The grower, the county officers, and the club are notified of any infested tree. A tree is indicated in the report by number as follows: "We have agreed to indicate seriously infected trees by numbering the rows from the east and the trees in the row from the north, thus a given tree may be R. 10, T. 20."

Mr. Baker expresses the belief that the orchardists will have a competent and thorough inspection at a trivial cost. Also that the work of Messrs. Woglum and Maskew of the U. S. Dept. of Agriculture will make more certain the work of fumigation which will enable more perfect control of even the mealy bug.

"Citrus growers have been losing enough through lack of proper inspection and through ineffective fumigation, to carry on this work all over the county as it should be done, and by trained men, and with all the latest and best facilities that such work demands. The keynote of the whole situation is simply this: The growers can easily have it done right, by direct and energetic action!"

As to the mealy bug and its habits, we will quote from the bulletin next week.

As to methods of work Mr. Fred'k Maskew in his address before the club said: "Clean up and destroy by fire all the debris around and under infested trees. Mark your tents, so that you can know the percentage of cyanide you are using and increase the amount until you have stamped this pest out while it is still above ground.

The question of the control of the mealy bug by parasites does not apply itself to the situation at Claremont at all. The infestation is not of sufficient extent to justify the belief that an attempt to introduce parasites would be attended with success. While this is in contradiction to the methods adopted by the two men whom I have repeatedly quoted as having had the most extensive experience in combating this insect of anyone in California, yet I believe my knowledge of conditions in each of these different localities justifies me in making that statement. Peculiar conditions in San Diego county have enabled the most efficient predatory insect attacking mealy bugs in California, Cryptolaemus montrouzieri, to become firmly established in that region, so much so that it can be collected in numbers practically all the year around. Experience has also shown that in perhaps three years out of four its work is as complete in that region as that obtained by any mechanical means of control, thus I consider Mr. Allen justified in the course he has decided to adopt.

* * *

The mealy bug is but one of several serious pests that are striving continually to gain a foothold in your citrus orchards, and it is only a question of time until they will surely arrive. This has been the fate of some of the most carefully guarded citrus districts of this state. The avenues of entrance open to these pests are many, and while as a community you may make and take the most stringent measures governing the movements of trees and plants, and the use of suspected apparatus necessary to orchard management, it is beyond the ingenuity of mankind to control the movements of the wind, the insects and the birds. These are the factors that constitute the true source of danger, in the present instance, and are a constant daily menace in that they furnish the most rapid source of distribution of scale pests from orchard and from the one district to another.

Since it is apparent that it is beyond our power at the present time to prevent the arrival of these pests, it may be well to consider the better way of preventing their becoming firmly established once they do arrive. This, in my opinion, will be found in promptly locating and fumigating each new infestation as soon as discovered. To accomplish this a competent inspection of each individual tree in the orchard is necessary.

THE NEED OF FORESTRY EDUCATION.

IF we may judge from the signs of the times, a new activity is about to be added to the farm—the planting and growing of trees for the uses of the farm and for pecuniary profit as well. Heretofore farmers have gone to the woods for their fences, their houses and barns, and the country in general has done the same thing for its railroad equipment, and a thousand and one things in daily demand. But the woods are fast passing, and reason advises that we must look elsewhere for timber; that we must eventually depend on planted forests for things made of wood.

If so, we should know something about trees and how to grow them; how to plant forests and care for them. Here, then, would appear a new function for the agricultural colleges of the country—the teaching of forestry and forestry experimentation. At present their functions embrace, among other things, agronomy, horticulture and animal industry. Forestry would add another, cardinal in character and intricate, cardinal because of its universal and pressing necessity, and intricate for the reason that so much time is required for the forest production, and also because we have no precedent. It has never been an American industry and the people are without either education or experiment.

If the forests of the country are fast passing; if we are dangerously tending towards a timberless period, it goes without saying that forestry, both educational and experimental, should find a place in our agricultural colleges at the earliest possible moment.

The first thing to settle is the truth or falsity of the foregoing hypothesis—that the forests are giving out. Is it a fact that timber is growing scarcer and scarcer? Is it true that all heavy timber consumers are finding it more and more difficult to procure fresh product from the forests for their daily consumption? Are we to credit the statement that railroads and lumber companies are becoming anxious as to their future supply, and where it is to come from?

If these queries and others of like character require an affirmative answer, as they unquestionably do, then are we face to face with the absolute requirement of forestry education and experimentation in our agricultural colleges? All argument based upon theory is at an end. It becomes an unequivocal demand; an invincible necessity; something to consider; a matter to provide for.—The Denver Republican.

IN THE FIELD.

Go over your farm and bring into shelter the expensive piece of machinery you are sure to find in some field. A half hour's work storing it for the bad weather may save you from buying a new one next year.

Alfalfa may be sown this month, and if the weather is favorable, will do well, as will red, white and crimson clover, all varieties of grass seed, rye, barley, wheat and oats.

CITRUS FRUIT OILS.

The terrible earthquake of December 28, which destroyed Messina, Reggio and many another smaller city in the southern end of Italy and along the northern shore of Sicily, causing the loss of about 200,000 lives, and the destruction of property to the estimated value of $240,000,000, has naturally affected the markets of the world. Of course this has been shown first in the leading exports from Calabria and Sicily as the following extract from a British newspaper shows:

"The destruction of Messina immediately affected the prices of its staple commodities. Citric acid is steadily advancing. Essence of lemon is selling for from 42 to 120 pence (84 cents to $2.40) per pound, and oil of bergamot, which is largely used by the perfumery trade, at from 12 to 30 shillings ($2.92 to $7.30) a pound. Both are being held in the expectation of a greater advance. Oil of sweet orange, which sold for 66 pence ($1.32) per pound, is now double that price."

If the earthquake not only destroyed buildings but also groves and standing crops and utterly ruined the agricultural wealth of those provinces, as some have said, the prices of these products are bound to continue to advance until they reach a very high level. Therein is a hint to our Florida citrus growers, says the Jacksonville Times-Union.

Regarding the Manufacture.

Consul Arthur S. Cheney, who, with his wife, lost his life in the destruction of Messina, made a report under date of December 7, which was published among the daily consular and trade reports of the department of commerce and labor under date of January 23 last, the subject of which was Essential Oils in Sicily.

The manufacture of the essential oils of orange, lemon and bergamot usually begins in that district about October 15. Judging from Consul Cheney's report, it seems probable that a very great amount of these products was yet in store awaiting shipment and possibly a great quantity yet remained to be pressed from the fruit, most or all of which is lost to commerce.

About 75 per cent of the total exports of essential oils produced in Italy were exported through Messina, now a heap of ruins. The United States was the best customer for these products, Great Britain coming next.

Great Exports.

For 1907 the production of citrate of lime, one of these products, being a combination of lemon juice and lime, for export, was 23,000 "pipes" for Calabria and Sicily. It was calculated that the yield of citrate of lime for the year ending October 31, 1908, was 20 per cent greater. As it requires 100,000 lemons to make one pipe of this oil, a pipe equaling 671 pounds, and about one-third of the lemon crop is used to make by-products, it is calculated that the crop of lemons for these two provinces was 6,900,000,000 in 1907.

There is no means of estimating the number of oranges and bergamots produced. The world's supply of oil of bergamot came from a comparatively small part of Calabria, in the extreme south of the mainland of Italy, and this experienced the worst effects of the earthquake. None were grown in Sicily, only six miles distant. The season for expressing this valuable oil had only just begun at the date of the report, three weeks before the earthquake.

Stocks of oil from the previous season were very restricted and the tendency even then was toward higher prices. Oil of bergamot is largely used in the perfumery trade. To obtain two and a half ounces of it, 100 bergamots are used.

It will be seen from the market report quoted above that it was selling for $2.92 to $3.70 a pound at the beginning of this year, and a greater advance was expected. The bergamot is a small, roundish orange, of fine flavor and taste, it may be explained to those not familiar with it.

Uses.

Sweet orange oil is, or was, produced in both Calabria and Sicily, but nearly all the bitter orange oil came from Calabria. The amount produced has depended upon the demand for fresh oranges. In seasons when the demand for fresh oranges was particularly good, very little oil was produced.

Citrate of lime is largely used in the manufacture of citric acid. Oil of lemon, expressed from the skin, is largely used by confectioners and pastry cooks for flavoring and in the manufacture or extract of lemon.

Uninteresting, perhaps, except to the growers of citrus fruits, yet these facts point to a demand for by-products of these fruits which are now neglected. Culls and fruit generally which cannot be profitably shipped can yet be used without loss in the production of the products mentioned above, products now commanding a high price and likely to go still higher. The rinds of citrus fruits, used in preserving or making marmalade, may be valuable for their essential oils, instead of being waste products.

May Manufacture in Florida.

It may be that the colony of Calabrians and Sicilians proposed for Manatee county, if they are admitted to this country, may go into the culture of the bergamot, with which they are familiar. If the foundation of that colony is frustrated, it may yet be worth while to turn attention to its culture in Florida.

At all events, there will certainly be a strong demand in the markets of the world for citrate of lime and the oils of bergamot, lemon and oranges on account of the destruction wrought by the earthquake of December 28, 1908.—Florida Fruit and Produce News.

DESTRUCTION OF CONCRETE BY ALKALI.

Cement has been found so generally serviceable and beset with so few disadvantages that its use is generally recommended without any reservation, and this confidence has been fully justified with but few exceptions.

Dr. W. P. Headden, chemist of the Colorado Experiment Station, has found serious injury to cement tiles from alkali. He reports as follows:

"There were sent to me, some months ago, a number of fragments of tiling which had been laid but from eight to nine months. They had been disintegrated to such an extent that one of the samples was simply a white, putty-like mass mixed with sand. There was nothing about this sample remotely suggestive of concrete. Another of the samples consisted of a fragment of the tile, the interior portions of which had been wholly decomposed, while there still remained an outer and inner portion in good condition, or comparatively so. Another sample had been attacked on the inner side, leaving the mass of the tile outside of the zone of decomposition apparently sound. The line of decomposition was sharply limited and showed distinctly, but even in this case there remained a thin layer of cement on the inside.

"I do not know whether the tile were running full of water or not; probably not, as the fragments seem to be parts of 16 or 18-inch tile. The importance of this point is simply this, that it would answer any question in regard to the separation of solid 'alkali' salts on that portion of the tile above the water line. That such a separation of these salts should take place does not seem very probable in this case.

"The point of attack, so far as the samples at my disposal indicate, is either in the center of the cement mass or near the inner surface. In either case we are almost compelled to assume the action of the water, i. e., of the salts held in solution. At the same time we see the resisting power of the outside and inside surfaces, which are evidently richer in cement than the inner portion of the mass of the tile."

Prof. Bioletti of the Viticultural Department of the State University demonstrated vine pruning for the benefit of vineyardists of Yuba City.

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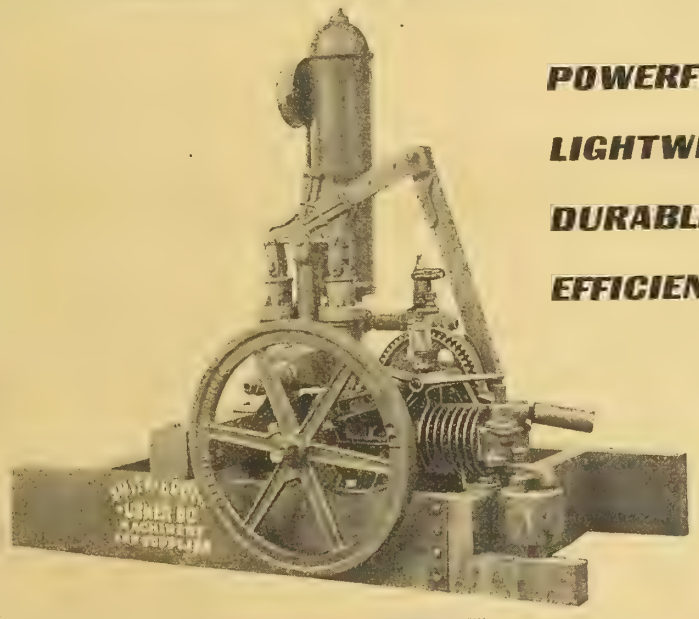

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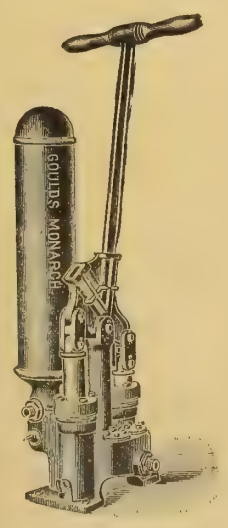

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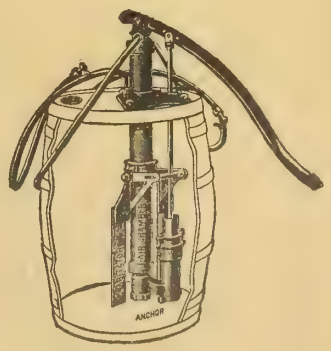

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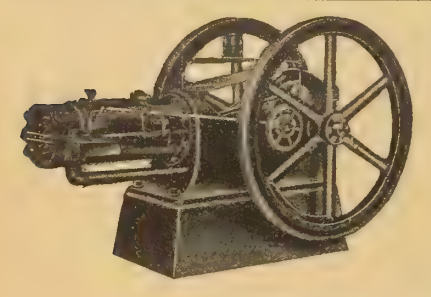

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By Mrs. Minna E. Sherman

HOG CHOLERA.

THE losses from hog cholera in the states annually amount to millions of dollars. The spread of contagious diseases throughout the central stock yards and by cars and boats not disinfected—a condition which existed prior to the establishment of inspection by the Federal Bureau of Animal Industry—resulted in the contagious diseases existing in this country (among them hog cholera) becoming widespread, writes B. F. Kaupp, Pathologist, Colorado Agricultural College.

By the establishment of Federal inspection, in 1891, hogs were no longer allowed to be shipped back to the country after being unloaded in the central markets of Chicago, St. Louis, Kansas City, Omaha, etc., but on the other hand, were required to be sold for slaughter. The reason for this was that the yards were infested with hog cholera.

All cars containing hogs, as well as other animals, are inspected as the trains arrive at these markets, and those cars which contain cholera hogs, or any other contagious disease, are thoroughly cleaned and disinfected. Thus, through the careful, watchful eye of the Government, hog cholera has ceased to spread so rapidly.

Other means of spread that affect the local places are as follows: A dog running through a hog yard in which cholera hogs are kept will carry the germs on his feet. A neighbor, just to be neighborly, goes over to sympathize with a friend, and, tramping around on the infected ground, carries the germs home on his boots, and thus his hogs become infected.

In regard to treatment, the first measures should be a thorough cleaning up of the house and the yards. The hog troughs should be kept thoroughly clean and disinfected. The task of thoroughly disinfecting the hog houses, yards, troughs, and fences is not an easy one, but the free use of a spray gun with five per cent carbolic acid will be effective. Bichloride of mercury, one dram to each gallon of water, or creolin, one per cent, will do much good in the way of disinfection.

Medicines which are given by the mouth or in the feed or slop, are of little or no value. Many so-called "hog cholera cures" are put on the market, but they are fakes, pure and simple. It is an easy matter to get testimonials. Pacification of the mind may do as a "placebo" for the human mind; but if your hogs get cholera, they will need something other than medicine by the mouth.

There is one method of producing immunity against hog cholera, and that is by the serum injection. For many years after the discovery of the Bacillus Cholera Suis, the manufacture of hog cholera serum was attempted by the United States Department of Agriculture, through its Bureau of Animal Industry.

This serum is made by hyperimmunizing the hog by taking one that has passed through the disease and injecting this pig with a quantity of virus from a hog sick with cholera, and in this way producing in this hog a greater resistance, and as a result the serum from the blood of this hyperimmunized hog will produce a greater resistance against the disease in another individual and make it proof against cholera.

The Bureau of Animal Industry has been conducting extensive experiments along this line in Iowa for several years and has perfected this method of treatment. They have asked the Experiment Stations of the various states to co-operate by establishing the hog cholera experiment departments upon their farms so as to manufacture and furnish, at a minimum cost, all serum needed within the state. The serum, perhaps, costs a trifle more than those serums which can be produced by using the horse, as the hog does not furnish a great deal of blood.

MILK SICKNESS OR TREMBLES.

For the past four or five years complaints of the sickness and death of stock have been received from certain parts of the territory, particularly the Pecos valley in and around Carlsbad, and accompanying these complaints have come specimens of a plant which was supposed to be the cause of the loss. The losses were not confined to one kind of stock, but cattle were most frequently affected. The plant accused of causing the trouble (the ravless goldenrod—Isocoma heterophylla) had never before been accused of being poisonous, but the complaints against it were so uniform and continuous that they were believed to be well founded. The disease was believed by some to be due to "alkali poisoning" and was called by this name or referred to as "trembles," "slows," or "tires," depending somewhat upon the symptoms of the individual animal.

The financial loss arising from this cause was considerable; but, what is of much more consequence, there is a disease of man which occurs associated with that of the cattle and a number of cases of severe illness and a few deaths have been reported from the seat of the cattle disease. Doctors prescribing for the human patients diagnosed the disease as "milk sickness," the source of the trouble evidently being the milk of affected cows. This disease is one which prevailed more or less extensively in the central states during the early settlement of that part of the country, and is reported occasionally from the less thickly populated parts of that region even today. The true cause of the disease has never been ascertained until quite recently.

Through the efforts of various individuals more or less concerned, special investigators, Drs. Edward O. Jordan and N. M. Harris, professor and assistant professor of bacteriology, University of Chicago, were interested in the matter, went to the seat of the disturbance, and made an extended investigation of the disease. Autopsies of cattle in various stages of the disease were made and detailed examinations were made of all the organs of the affected animals and records kept of the conditions found in each. Two human patients suffering from the disease were seen. The result of their investigation led them to the conclusion that the disease is caused by a specific bacterium which they have called Bacillus lactimorbi.

So far nothing has been done in the way of remedial measures and the way in which the bacterium enters the animal is not certainly known though it is probably obtained in the food. Whether any particular kind of food is more liable to contain it than others is not known and the investigators are particularly anxious for more data which may reveal some method of preventing the entrance of the bacteria. Doctors who may meet with cases of this disease in their practice are requested to notify either of the above mentioned parties of such cases. A preliminary statement of the work which has already been done by these eminent bacteriologists was published in the Journal of the American Medical Association, May 23, 1908, which should be consulted, especially by the medical profession, for further information on the subject.

The symptoms of the disease in cattle are as follows: At first there is a noticeable desire to lie down, accompanied with loss of appetite. If

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forced to run, the animal is usually seized with a fit of trembling, and if urged too far will fall. Generally there is marked constipation, and there is great weakness. The animal usually dies quietly, the breathing becoming fitful and weaker until death occurs. Some ranchmen report that a treatment which keeps the bowels open (such as doses of linseed oil or feeding Kaffir corn or similar loosening feed) has proved beneficial. —E. O. Wooton, Botanist of New Mexico Experiment Station.

DANISH CO-OPERATIVE CREAMERY

From the report of Manager J. R. Murphy of the Danish Creamery Association of Fresno we note the following:

The creamery has never before been on as good a financial basis as it is at present. While the price paid for butter fat in 1908 was not as high as the previous year, the amount of business was much greater as the secretary's report shows over one million pounds of butter made, besides over $14,000.00 worth of cream sold.

We have now twelve wagons gathering milk and cream covering a territory of about twelve miles square. We have two wagons delivering butter and cream in Fresno. One double team, and one short order wagon. There is hardly a train going out of Fresno that has not a shipment of Danish Creamery butter for some of the towns throughout the valley. We are supplying about one hundred and twenty-five grocery stores in this valley with butter besides what is shipped to Los Angeles and other outside points.

The average person uses about half a pound of butter a week, so that there are about twenty-five thousand people with Danish Creamery butter on their table every day of the year.

The prospect is very flattering for the dairy business next year. The supply of cold storage is all gone, and I can see no reason why the present year should not be a prosperous one for the dairyman.

The demand for good butter seems to be increasing all the time. I predict a great future for the dairy business in this valley. We are in a business that is able to take care of itself and we are not concerned as to whether a low or high tariff rules.

Fresno county produced over 3,000,000 pounds of butter last year and the value of her dairy product was over $1,500,000.00. The day is coming when the raisin man will have to take off his hat to the great dairy business of Fresno county.

Mr. E. G. Webb, connected with the same creamery and proprietor of El Guernsey Rancho, writes in connection with the same report: "The present high price of food should make the dairyman get down and study as to which cow is paying profits. If he does that he will soon realize that only good cows pay."

AYRSHIRE BREEDERS' ASSOCIATION.

The 34th annual meeting of the Ayrshire Breeders' Association was held at the Manhattan Hotel, New York, on February 3rd, 1909, with about fifty members and others present.

The Association voted $300.00 each as special premiums for Ayrshires shown in the ring at the Alaska-Yukon-Pacific Exposition, and the National Dairy Show for this fall.

The officers elected for the ensuing year were: E. J. Fletcher, Greenfield, N. H., president; J. F. Converse, Woodville, N. Y., vice-president; Geo. E. Pike, Gouverneur, N. Y., vice-president; J. W. Clise, Seattle, Washington, vice-president; J. A. Ness, Auburn, Maine, vice-president; C. M. Winslow, Brandon, Vt., secretary and editor; N. S. Winsor, Greenville, R. I., treasurer; W. P. Schanck, Avon, N. Y., Executive Committee for three years; Howard Cook, Beloit, Ohio, Executive Committee for three years.

A new condensed milk plant is being erected at Ellensburg, Washington.

USUAL CROP OF CREAM SEPARATOR SNARES AND TARES

If actual merit alone prevailed the DE LAVAL cream separator would be the only one made, sold or used.

But the dairy farmer with his dollars is an alluring proposition to those who "need the money," so that every season brings with it a new crop of separator fakes and fables, with some of the old conjurers over again and always a few fresh ones.

Last year the new and improved line of DE LAVAL machines literally swept the field. This year everybody has a "new" machine, which is the one thing they universally harp upon in their talk and advertising. But it is mostly bosh and nonsense. There is mighty little new to them. No more DE LAVAL patents have expired so that there is nothing else "new" that they can lay hold of this year.

There's the usual crop of fakirs appropriating the facts of DE LAVAL separator use and the endorsements DE LAVAL separators have received, and quoting them as though they applied to their own inferior imitations of the standard cream separator.

There's the concern which makes an inferior disc separator and speaks of the "disc" separator being "the machine which has won out universally in Europe, the home of the disc separator." True, but it was the DE LAVAL that has done the winning out in Europe, as it has in America.

There's the political separator concern, with the new "year" or "cents" trademark, whose claims it is to be hoped nobody ever believes, and which manifestly practices the circus man's theory that the great American public ever likes to be fooled.

There's the only concern which has stuck to the abandoned DE LAVAL "hollow bowl" of 30 years ago, but will this year desperately join the procession of 10 year back DE LAVAL imitations with a "disky bucket bowl" machine.

There's the "Trust," striving to complete its monopoly of dealer and farmer, harvesting much costly separator experience, largely at the expense of buyers-for-use, through trying to build a cream separator like ordinarily made farm machinery.

There's the "mail order" outfit, with their cheaply made machines, bought here and there, not made by themselves or sold under the real manufacturer's name, all claiming the earth, and many of the things that should be below it.

But the merry lot changes and dwindles every year. They gradually drop out and leave their unfortunate patrons helpless with trashy machines. More will fade away this year. The dairy farmer, like the creameryman, is coming to know something of separators. He doesn't swallow mere "claims" so easily. 98% of the world's creamerymen use DE LAVAL machines. The percentage of farm users content with nothing else is always increasing.

There isn't a single reason why every man who buys a cream separator this year should not buy a DE LAVAL. There are many reasons why he should. The best costs no more than the various grades of inferior imitating machines.

A DE LAVAL catalogue may be had for the asking. A DE LAVAL machine may be tried for the asking.

De Laval Dairy Supply Co.

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42 E. Madison St. CHICAGO.
165-167 Broadway, NEW YORK.

General Offices
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San Francisco

107 First St. PORTLAND, ORE.
1016 Western Ave SEATTLE.
Box 1052. VANCOUVER, B. C.

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Contents

AS ORANGES ARE ADVERTISED IN THE EAST, Cover.
ORGANIZE FOF FIGHTING ORCHARD PESTS, 211.
CONTROLLING SOME PESTS OF THE ORANGE, 211.
CITRUS.—Citrus Conditions in Northern California; Citrus Culture in Tulare County; The Desert Producing Oranges; Oranges of Fresno Foothills; Oranges in Imperial Valley; Organize to Fight Pests; Citrus Fruit Oils, 212, 213, 214, 216, 217, 218, 219.
LIVE STOCK.—Hog Cholera; Milk Sickness; Danish Co-operative Creamery; Ayrshire Breeders Association, 220, 221.
EDITORIAL.—Great is the Orange; Due to Co-operation; Advertise; Fighting the Pests; Death of Race Track Gambling, 222.
AGRICULTURAL NOTES OF THE PACIFIC COAST.—Northern, Central, Southern, The Coast, 223.
DECIDUOUS.—Rooting Grape Cuttings; Small Cannery; Grafting Wax, 224, 225.
POULTRY.—Points on Pigeons; Feeding Millet Seed to Chicks; Alfalfa; A Mature Pullet; Starting Right; A Simple Water Fountain; Poultry Talks; Fattening Turkeys; Value of Mashes; Roup; Succulent Feed; Merits of Collies, 226, 227, 228, 229.
SMALL FRUITS AND VEGETABLES.—Garden Peas, 230.
ORNAMENTAL GARDEN.—Beauty of Home Yard, 230, 231.
QUERIES.—Naming Apple; Plowing Under Green Manure; Pearl Guineas; Beet Pulp; Large Potatoes for Seed; Nitrate of Soda; Luglienga Grapes; Value of Hen Manure; To Kill Weeds; Live Oak; Grafting Olives; Agricultural School; Billion Dollar Grass; Bitter Milk; Muddy Corral; Root Knot; Frostless Belt; Dust Spraying; Almonds; Blight, 232, 233, 234, 235.
GENERAL AGRICULTURE.—Destruction of Concrete by Alkali; The Need of Forestry Education, 218, 219; Conservation, 231; Seeding Alfalfa, 235.
HOUSEHOLD.—Little Things; About the House; Sanitary Home; Why Not; The Windows; Apple Pie and Melted Cheese, 236, 237.
PRODUCE MARKETS.—Los Angeles Market; San Francisco Market; Citrus Markets, 238, 239.

GREAT IS THE ORANGE.

The surprising growth made by the citrus industry of California has been remarked upon in the editorial columns of this paper many times. An industry which was regarded but a few years ago as the fad or play-thing of the wealthy has become today the greatest of wealth bringers to this state. The railroads alone are reaping more than a million dollars every month for transporting the golden apples to market. We do not know that there are any statistics which would show the amount of land covered in the growing of California oranges, but as a rough guess we may say that in bearing trees there is at least in excess of 100,000 acres. This in comparison with the vast expanse of farming land gives a faint conception of this state's possibilities when all its lands are given the same intensive cultivation that is required by the orange grove. Of course it cannot be that every acre of tillable land in California can be brought to the wealth-producing condition of an orange grove.

But to one who looks at the great possibilities of the state it is an encouragement to know what has been done with this industry. The writer well remembers but a few years ago when the productions did not exceed a million boxes, and that the market conditions were such that the utmost discouragement prevailed. Through co-operative marketing such encouragement was given to the industry through honest returns secured for the producers that the production of that time has been increased more than twelve fold; or as usually referred to in carloads, the state is today producing nearly 30,000 cars of oranges and perhaps 5,000 cars of lemons. A car is usually considered to consist of 366 boxes of oranges. Of this vast output of oranges the section south of Tehachapi will produce over 25,000 cars, Tulare county section perhaps 2500 or 3000 cars, Fresno county 200 or more cars, Butte county perhaps 1200 or 1500 cars more. There is scarcely another county in the state but can produce a few for local consumption.

To be more particular we may be permitted to take some figures which were secured some months ago by the Riverside Press as to the production for the coming year. This shows that the Redlands district, including Crafton, Mentone and Redlands Junction, will produce this year 4350 carloads; Riverside district including Highgrove and West Riverside, 4225; Pomona, including San Dimas, Lordsburg, and Claremont, 2350; Ontario-Cucamonga, 2350; Highland, 1650; Azusa-Glendora, 1575; Covina, 1350; Rialto, 950; Alhambra-Pasadena-San Gabriel, 900; Fullerton, 900; Orange, 750; Colton, 575; Corona, 525; Duarte-Monrovia, 525; Whittier, 745; Ventura, 310; San Fernando, 250; Moreno, 200; San Diego county, 150; Anaheim, 135; Hemet-San Jacinto, 70; other localities of Southern California, 435 cars. This with the five thousand cars from north of the Tehachapi runs into an aggregate figure which is almost inconceivable. To this must be added again 5000 cars of lemons sent from south of the Tehachapi.

One thing needful in this great industry to make it more profitable and to completely utilize it as a wealth producer is to establish factories which will turn the waste products into gold coin. In Italy and its islands the cull fruits which are here returned to the orchards, or often, worse, hauled off to the "wash" and thrown away, are used in the production of acids, oils, or other valuable products, which gives labor to many and brings to the producer of the lower grade fruit some little return for his product. There have been some efforts in this direction and at Riverside there has been quite an output of a high grade marmalade, and efforts are now being made for the establishment of a vinegar and orange wine factory. The manufacture of candied orange peel has been attempted but never put upon a large commercial basis. Another industry attempted has been the candying or preserving of the citron. A very fine product has been put out but more economical methods of work are needed to make it a success.

When these steps can be taken and this added to the income of the already prosperous industry we are safe in predicting a greater future for this industry.

DUE TO CO-OPERATION.

To no factor so much as that of co-operative marketing is due the prosperity outlined in the above article. In 1890 it was practically impossible for the orange producer to get even courteous treatment from the larger packers and commission men. The outwardly polite invitation to "send your fruit to us and we will do the best we can for you" fell upon the ears of the producer with a sickening thud. And the returns which came at the end of the season were not such as to cause any more cordial feeling than at the beginning of the season. Growers felt absolutely helpless, and in fact were, until they determined on co-operation in the selling of their products and determined to form and take up the plan as a last and almost forlorn hope. We say forlorn, for the reason that there had been former efforts along the same line by the grower, only to find himself steered into the arms of the smiling commission man and to find himself as before fleeced in the final transaction. Fortunately the new movement fell into the hands of competent and honest people and the money which the fruit secured in the market after being more intelligently distributed than it had been for years, was turned over to the grower. This was not all accomplished at once for errors were made, financial losses came which caused some discouragement and many to forsake the movement which was organized for their salvation. But as years passed and the experience of marketing gave greater wisdom to the growers better returns were secured and today the California Fruit Growers Exchange stands without a peer in the world as a success in co-operative marketing of farm products.

This great organization received for its members and turned over to them last year the vast sum of over $12,000,000. This $12,000,000 was turned over to about 4,000 members. These 4,000 growers own or control in excess of 65,000 acres of orange groves. These 4,000 members are organized into about 100 associations. Each association owns its own packing house and equipment, some of them having assets of this kind aggregating many thousand dollars. These hundred associations are organized into 14 exchanges or selling agents, which in turn deal with the great central organization with its offices in the H. W. Hellman Building, Los Angeles. Notwithstanding this great business aggregating $10,000,000 to $12,000,000 per year, the past four years have shown practically no financial losses owing to non-collection of accounts.

The greatest asset perhaps of this association at the present time is the good will of the entire eastern trade, which has been secured through square dealing and the putting out of honest goods attractively packed. Besides this it has the good will and entire confidence of the producers who are standing by it stronger today than ever before. Sixty-five per cent of the citrus output of the state will be in the hands of the Exchange this year.

ADVERTISE.

On first page of this issue of the Cultivator may be seen a reproduction of the advertisement of California oranges which at the expense of many thousands of dollars was inserted in a vast number of papers all over the middle west about the first of the present month. It was to advertise "orange week" which California Fruit Growers Exchange established for the purpose of calling special attention to California citrus fruits. It is gratifying to know that the people of the East entered into the spirit of the request made through these advertisements and the dealers found themselves busy waiting upon people who were anxious to buy "Sun-kist" oranges.

This is not the first effort at advertising which this organization has taken up, for last year a try out was made of the state of Iowa with a similar campaign. This year the field was greatly extended and we doubt not the results will demand of the same organization still greater extension another year. We believe the lesson of this successful advertising campaign may well be taken up by producers of other products in this state. We believe that had the raisin growers combined and used their means to advertise luscious California raisins, then pushed their product on the market at the very highest possible price to be secured without effort to combine on a price, that the entire hold-over crop would before this have been disposed of.

FIGHTING THE PESTS.

California orange growers have not only co-operated to sell their products, also to buy supplies, but are today co-operating in the fighting of insect pests which have sapped the life from many groves. This movement was started in Highland, which boasts that as yet it has none of these pests to fight but organized its growers into this movement as a means of protection from encroachment. Its main features which are outlined in another column of this issue appealed to growers of other sections so strongly that similar efforts are being made to bring the growers together for a mutual fight on all sides.

The list of these injurious insects seems to be increasing every year. Of course it is possible that the natural enemies of these pests will arrive, as they have in some cases in the past, but intelligent co-operation in studying this problem will in no way interfere with the introduction of their natural enemies.

DEATH OF RACE TRACK GAMBLING.

The anti-race track gambling bill over which the better element of this state has waged a warfare for years and which was finally passed by an overwhelming vote in both Senate and Assembly was at almost the last moment signed by Governor Gillette. This bill has been watched closely by its friends and we are assured without question it will stand the tests of the highest courts. It will sound the death knell of gambling on horse races in this state and we trust encourage other states in taking similar stand.

Governor Gillette's action in this matter in delaying his signature as long as he did and in refusing to send a special message to the State Legislature touching upon it, is such as to cause regret on the part of all well wishers of the state. In this respect it has been in marked contrast with the action of Governor Hughes of New York.

Agricultural Notes of the Pacific Coast

Northern California

San Leandro is planning for a cherry carnival to be given when the cherries are ripe.

Wool buyers at Ukiah admit that wool will probably reach the 25 cent notch in the next few months.

Farmers in Modoc county claim that grass is further advanced in its growth than for years at this date.

Pres. Rossi of the Italian Swiss colony, Sonoma county, announces that the wine market is much improved.

Owing to the $5 per ton price offered by the Alameda Sugar Factory this year liberal plantings of beets are being made.

E. K. Carnes, in charge of the State Insectary at Sacramento, is experimenting with a new black scale parasite received from China.

The crane fly is doing much damage damage to some sections of the Sacramento valley last year is again reappearing and injuring growing feed.

It is now estimated that not over 50,000 sacks of potatoes were lost during the floods on the islands of the Sacramento and San Joaquin rivers.

A coyote hunt has been organized in Marysville to rid some of the farming sections thereabout of coyotes which had destroyed much young stock.

The Horticultural Commission of Solano county is keeping close tab in imported nursery stock and has prevented the introduction of many pests.

Horticultural Commissioner Stabler of Yuba City has discovered a shipment of vines into the county which were infested with Phylloxera. They were promptly burned.

January rainfall at Vacaville aggregated 15.18 inches. This is greatest of any year the record was kept there since 1887. The only other year it approached this amount was in 1896 with 15.06.

The Harbor Board of San Francisco, in charge of the San Francisco Free Market, has notified tenants of an increase in the rate charged because of failure to provide funds sufficient to cover the expense under the old rate.

Six millions of eggs in one incubator would be a great record indeed. In fact in a sense that is what is being accomplished at the State Fish Hatchery at Grizzly Bluff, there now being over six million fish eggs in all stages of propagation.

The creamery at the State University Farm at Davis has paid its patrons about Davis for cream for the five months ending the first of the month $5,208. The creamery is primarily for the work of education but incidentally the cream has to be bought and is marketed so as to return the dairymen the above sum.

Sebastopol berry growers have formed a corporation known as the Sebastopol Berry Growers Incorporation. The capital stock is $5,000 and each member must own at least one share and not more than five, averaging $10 each. The officers of the organization are: W. I. Newcomb, president; W. M. Hotle, vice-president; Ira G. Hambleton, secretary.

Central California

The General Grant National Park in Tulare and Fresno counties is four feet deep in snow.

Porterville real estate is proving quite active, several pieces having been sold at good prices during the last few weeks.

The work of the Horticultural Demonstration Train has been successful in bringing information to many farmers throughout the valley.

August 24 has been set apart as San Jose Day and August 20 as Porterville Day at the coming Alaska-Yukon Exposition at Seattle.

Several bunches of hogs brought in from mountain ranges where they have fattened on acorns near Porterville netted five cents per pound.

The ten cent increase in dried fruit transportation it is feared will have a serious effect upon the marketing of low grade hold over fruit yet in hands of producers.

The Kings County Farmers Union at a recent meeting objected seriously to the moving of the state headquarters of the Farmers Union from Kingsburg to Fresno.

The effort of Tulare county people to secure a fish hatchery will fail, it now appears, as the Fish Commission maintains that the hatchery located in Siskiyou county is ample.

Another raisin selling plan has been proposed by one of the largest packing companies in the San Joaquin valley, which is a makeshift but may possibly succeed in unloading the past year's output.

Creamerymen the state over are taking more interest in making butter with a lower per cent. of water than formerly since the recent arrests because of butter containing more than 16 per cent of moisture.

The recent election of the Turlock irrigation district resulted as follows: T. A. Owen, A. Hallner, E. P. McCabe to act on the Board of Directors; E. B. Osborn of Turlock, treasurer; Joseph Cross of Ceres, assessor and E. W. Brush collector.

W. Q. Dale, a dairyman of Stanislaus county, has a Holstein cow which in 100 days yielded him 6,744 pounds of milk containing 216 pounds of fat. This cow returned to its owner almost $1 per day for the hundred days, besides the $75 which he received for her calf.

At a recent meeting of the Santa Clara County Patrons of Husbandry the Sempervirens Club, and the Native Sons, a joint committee was appointed to proceed to Sacramento and appear before the legislative committee in the interests of the Big Basin Redwood Park. All worked against the retaining of State Forester Lull.

Cattlemen of Bakersfield who were caused heavy loss by large numbers of the cattle being killed by the Humane officers of Los Angeles when being transported through that city, are indignant and claim the slaughter was entirely unnecessary. The Humane officers of Los Angeles, however, maintain that the stock were practically being starved to death and so weak that many of them were unable to get up when once they were down.

Southern California

Redlands has shipped about 1200 cars of oranges this season.

Orange picking is again in full swing after the forced vacation during the storm.

The Richland Walnut Growers Association of Orange recently met and adopted by-laws.

Berrydale in Orange county is promised a big season in small fruits and vegetables.

Oranges are now going forward rapidly, crowding up close to the 200 cars per day mark.

Escondido is planning an organization to conduct a county fair to be held in September.

Last week was orange week in many of the towns and cities of the East and Middlewest.

Nearly all nurseries of Southern California have been sold out on orange and lemon trees.

Orange prices so far received compare favorably with those received last year up to this date.

Poultry raising is becoming more popular at Beaumont, several new ranches being started this season.

Artesian wells of Southern California are all flowing more water than for some years at this time of year.

A corporation is being formed with a capital of $50,000 at Santa Ana for the purpose of establishing a new creamery.

Riverside Groves and Water Company is laying out an 8,000-acre tract at Arlington, which will be subdivided into small homes.

Coachella cabbages are going forward and commanding good prices, the last sale being in the neighborhood of $41 per ton.

A large orange packing house at Redlands Junction, San Bernardino county, has recently been sold to the Denman Fruit Company.

Beaumont has organized an Eucalyptus Club and started to secure a fund of $5,000, which will be used in the planting and caring for eucalyptus trees.

The Carpenter and Serrano Water companies of Orange county contemplate the building of another large storage reservoir which will cover about 70 acres.

Many Southern Californians are interested in the bill before the State Legislature which proposes to reduce the number of County Horticultural Commissioners from three to one.

Prices of lima beans received by the grower this year were nearly one cent lower than those of last year. But at present the market conditions are very materially better than for several weeks.

The improvement of the famous Magnolia Avenue is the object of the Magnolia Avenue Improvement Association of Riverside, and it is hoped that it will be macadamized and otherwise greatly improved.

Oxnard is constructing a miniature representation of her sugar factory, to be used as a part of her exhibit at the Alaska-Yukon Exposition. Another feature in the same exhibit will be a small bean thresher turning out quantities of lima beans.

The Coast

The Trans-Missouri Dry Farming Congress convenes in Cheyenne this week.

The Phoenix Republican says that the Wilson district near that city is becoming noted as a chicken and egg producing section.

A thousand bushels of bluestem wheat was sold in Walla Walla, Washington, at $1 per bushel.

An effort is being made in Arizona to secure the early enactment of a territorial dairy inspection law.

The streets of the city of Tempe and the roadways leading to the country from that place are being improved by walks and planting of shade trees.

The farmers of Idaho, Oregon, Montana and Washington are all urging their representatives in Congress to stand pat on the matter of protection of farm products.

California floods have been the means of material increase in the price of potatoes at Portland, prices now ranging for good potatoes from $1.15 to $1.25 at country points.

Contracts are already being made for the spring clip of wool at Lewiston, Idaho. Prices are kept secret, but rumor has it that they are in the neighborhood of 20 cents per pound.

It is estimated that 5000 acres of sugar beets have been planted for the factory at Glendale, Arizona. The factory is now being repaired and enlarged to handle the increased acreage.

Cheese factories at Tillamook, Oregon, are forming an association which will have an inspector to examine and pass upon all the cheese manufactured by members of the association.

The stock men of Idaho have as a rule endorsed the action of the Forestry Service in the management of the reserves, this notwithstanding the action of the National Wool Growers Convention.

The extreme cold weather which has visited Idaho has done some injury to the peach orchards, but the claim is made that the injury has only been sufficient to make unnecessary any thinning of fruit.

The Beaver Head forest reserve is now thrown open by the Secretary of Agriculture for grazing, and 29,000 head of cattle and horses and 110,000 head of sheep are expected to fill the reserve the coming season.

Territorial Fair Commission of Arizona is being reorganized by Gov. Kibbey. He has requested the resignation of one of the old members and it is rumored that the big stockman Dwight B. Heard will receive a place on the commission.

Much discussion is being had in the Hawaiian Islands as to the wise use of her public lands. An advisory land law commission is advising certain changes in the administration of these lands which it is hoped will be beneficial to the country.

Sheep owners near Hu[illegible] Washington, are planning for a gr[illegible]nd up of coyotes. The effort will be to have the drive extended over a great part of the two counties of Klickitat and Wasco, Oregon, as well as in the immediate vicinity of the drive.

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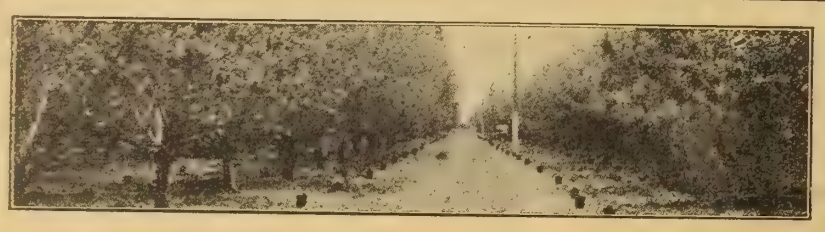

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Dealer in All Kinds of Beekeepers' Supplies

Deciduous Fruit Culture

By J. W. Mills

ROOTING GRAPE CUTTINGS.

IT IS not necessary to make grape cuttings longer than twelve inches, when planting in nursery form or in the vineyard. It must be remembered that the part that sticks above the surface of the ground is constantly drying out with no root to supply the moisture.

Cuttings with the bottom end near the surface will strike root quicker than when planted deeper. It used to be the general practice to use long cuttings and plant them at an angle so as to get the lower ends near the surface. This is a useless practice, and very undesirable because it makes a crooked vine. Why not make the cuttings short enough to have the top buds at the surface of the ground and the lower ends close enough to the surface to give them the proper amount of warmth and still keep them perpendicular. The vines will then be as straight as little nursery trees.

If the cuttings are planted on heavy soil, or that which is liable to crust, the ends should project two or three inches above the surface to prevent them becoming filled with water or mud. It may have a bad effect on the top buds. There should always be enough of the cuttings projecting above the surface to enable the men to clearly distinguish the rows. This is in the nursery rows. When cuttings are planted in vineyard form, each one should be staked.

In heavy clay soils, it is useless to plant cuttings deeper than ten inches or a foot, for they will rot off. This is especially true in the Imperial valley and in that region all the projecting top will dry out and die down to the bud below the surface. That is the general result.

The surest way to get a good stand of cuttings is to tie them in bundles of about 200, place them in a trench with good subdrainage, bottom ends up and cover with about four inches of sand or sandy soil. The warmth will start the roots very soon. When the callous begins to form, take them out carefully, place in a box with moist dirt in the bottom and keep covered with a wet sack while placing in the ground. The soil in which they are to be planted should be loose enough to allow the cutting to be pushed down into it without bruising the tender callous. The soil should be settled around the cuttings with water within a few hours after planting.

If the air comes in contact with the sand that is placed over the ends of callous as freely as recently loosened soil will permit, many of them will die. For the same reason the soil or the cuttings during the callousing process must never be disturbed unless immediately settled with water. It also should never be allowed to become dry.

A convenient method of making neat bundles of cuttings so as to have the lower ends of the cuttings all even, is to cut them in a box. Place a wire down the sides and across the bottom about six inches from the end of the box furthest from the operator. Place the butt end of the cutting against the end of the box and cut it the right length with shears. The cuttings will all fall into place and when the box is full to the top, bring the ends of the vines over and twist tight. The bottom ends of the cuttings will be as even as though they had been sheared.—J. W. Mills.

SMALL CANNERY.

In reply to a query as to starting a small cannery, Mrs. M. E. Sherman writes:

The proper way to estimate the size of a cannery is to count the number of cans to be filled each day. If the crop of fruit to be put up is one hundred tons and time fifteen days, by roughly estimating forty cases to a ton of fruit, and twenty-four cans to a case, weighing two and a half pounds to the can, it amounts to about 6400 cans of fruit to be peeled, packed and cooked each day.

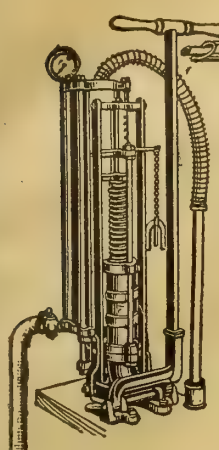
The cook room capacity therefore governs the cannery's output. The buildings need not be expensive, sheds answering, but the floors must be good well-matched stuff or they cannot be kept clean. A large boiler to furnish the steam for cooking the fruit must be provided with a dome to give dry steam. The fruit is cooked in the cans by swinging the small baskets holding a dozen cans each into the larger basket, that is handled by an overhead crane or a track. These cranes carrying baskets run along to the large wooden cooking vats and are let down into the water. The bottoms of these vats are furnished with pipes connected with the boiler and the fruit cooks by the heat of the water around it. It is a furious boiling they get from the hot steam. A syrup room is built overhead where the syrups are made of the different densities called for by the various grades of fruit. The syrup tank is also fitted with steam pipes for cooking. Syrup runs in pipes to a machine in the cook room just below it. This machine fills a basket of the cans at one time. As many machines as are needed increase the rapidity of the operation by filling a larger number of cans at one time.

The cans are then capped and left with the blow holes open. The capping machines solder the cans quickly. After the first cooking the cans are lifted by the cranes, the small holes quickly soldered up—"dotting" this is called. Then the fruit is let down into the water again and receives the second cooking, "processing," this is much longer than the first one. In large plants this work of handling is done by a belt that moves the cans from one place to another, and into the cooking vats and out of them. There is much detail in running a cannery successfully, and the margins of profit come in saving half cents on a case in the different processes. It is necessary to have a good training along the lines from the special and complicated forms of book-keeping to the understanding of the system of checking up the labor daily. In installing a new plant of this small size much of the outfit could be second-hand. There are promoter canneries going up all the time that do not run for more than a season, whose outfit can be purchased reasonably.

It is interesting work running a cannery. I love to be on the floor with the women and, at night, dream I hear the flute like voices calling "Fru——it! Ca——ans! Boo——xes!" As the peeling and pitting is piece work the prices are governed by that paid by the other canneries. The cook men are engaged by the hour. These men must be watched and they give more trouble than any other employees about the place. They must be kept going all the time and their time cards punched out when they come to a halt for want of fruit. This is one of the big leaks in the cannery, and the hardest to control. The packing house force begins at 6 o'clock and the cook house starts at 7 or 7.30 in the morning.

If the cannery is to work this season it is fully time to be making the contracts for cans. Labels the first season can be stock ones with the local name printed in. The American Can Company furnishes most of the cans used on this coast; they are located in San Francisco. The box shooks come in carload lots and the orange packers will tell the address of the mills that will furnish the stuff.

Every morning the book-keeper should tally up the tickets of the cutters and peelers with the amount of fruit that has gone over the scales, then tally this against the amount of fruit that has gone into cans and is now in the cooling shed. The manager goes every day to the pile of yesterday's canned goods and tests them. He selects personally a can from each grade and kind of fruit. White graniteware bowls are provided and each can of sample is cut



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Bean Magic Spray Pumps

The Bean patent spring (shown in the cut), divides the work; the operator does half at each stroke of the handle, and works against but half the pressure indicated on the gauge. Bean Magics are built in two sizes; both have non-clogging ball valves, porcelained cylinders, and other exclusive Bean features. They're the easiest running, least troublesome pumps on the market.

Our illustrated catalog No. 21 describes ten sizes of hand pumps, and contains much valuable spray information and formulas. Catalog No. 22 describes Power Sprayers. Both books sent free. Write for our special offer; mention number of acres and kind of fruit.

BEAN SPRAY PUMP CO.
212 W. Julian Street
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Low Prices

on
French Prune, small trees, on Almond.
Muir, Tuscan Cling, Seller's Cling Peach, Royal, Blenheim Apricot.

Good Stock Home Grown

Also full assortment of other varieties. Prices reasonable.

Eucalyptus Trees

and splendid ornamental stock, Berries and Walnuts. Write

Leonard Coates Nursery Co., Inc.
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See our Special Circulars on
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Because your order gets our personal attention, whether evergreen, or forest, ornamental or fruit tree; whether small fruit, shrub or rose bush, we guarantee it to be grown in Colorado; healthful, well-rooted, true to name. We give premiums to club-makers. We pay freight on $10 orders. Agents wanted. Send for free catalog today to

The Schroeder-Son Nursery Co.
Box 500 Lafayette, Colo.

Trees French Prunes on Peach, and Apricots, Muirs and Tuscan Clings, and many other varieties of Peach Trees; all fine budded stock. Large stock of all the leading varieties of Apples, grafted on whole roots and free from all pests. Also a fine stock of Cherries, Pears, Plums, etc. Send for price list.

A. E. SCHEIDECKER SEBASTOPOL, CAL
Prop. Pleasant View Nursery.

and emptied into a bowl. First the number of pieces is counted to see that the grade is right, large fruit being of higher grade than the smaller pieces. The number in the cans, if correct, establishes the grading. If they are wrong, the can is looked at and the number of the girl that put that fruit into the can is taken and she is cautioned against making that mistake again; when it comes again in her work she is sent to the cutting table and another girl takes her place. The girls at the packing table are paid by the day and the work is liked better than the cutting and peeling. Then to return to the fruit. Examine the cooking, then test the syrup for density.

After the fruit has been examined it is turned into a can, more syrup put on it and it is stamped as a re-cook. The pile of yesterday's fruit is removed to the warehouse when cooled. As it is removed it is carefully looked over for leaking cans; if these are discovered they are stamped as re-cooks and go again through the vats to be heated up, then have the leaks soldered up. These re-cooks are not sold with the standard pack, but as a cheaper grade of goods.

This is all I can think of at present to tell you, but you can see that it is well to go to a good cannery as an assistant on a small salary before attempting to run one of your own. The watchfulness has to cover all parts of the work. It is worth learning to do it right, for right in your own plant you can earn $50.00 to $100.00 a week by staying at it. I never hesitate to keep two maids at the house, because I can put in my pocket in a few weeks each summer the wages they cost. In other words, the superintendence work in the packing house cannot be hired to make the profit the owner can make out of it. I believe either pack your fruit yourself or sell it outright for whatever you can get. The packing is poor when you are not right after it and even then, struggle as you will, it is often pretty poor.—M. E. Sherman.

GRAFTING WAX.

The best grafting wax is made from four parts of resin, two parts beeswax and one part tallow, all by weight, melted together over a rather slow fire in an iron vessel of some kind. The resin is melted first, then the beeswax is added, and subsequently the tallow. The ingredients are gently stirred with a small stick and thoroughly incorporated. This will take from twenty minutes to half an hour, being careful in the meantime to avoid burning the fluid. When properly mixed, a convenient portion —not too much—is poured into a bucket of cold water. In a minute or less it will be cooled sufficiently to be lifted out with the hand and pulled like taffy. The hands must be kept moderately greased with tallow, to prevent sticking. When the wax is pulled until it becomes pale yellow it has been worked sufficiently and may be made into rolls of convenient size—three or four inches long by about an inch in diameter—and placed in another vessel of cold water to harden. More of the melted material is to be poured into the cold water from time to time, and treated as before, until the whole is worked up. The rolls (when they become hard, as they soon will) are to be put away until required in grafting. This wax when applied to the trees will not crack in cold weather, nor melt and run down in warm weather. If grafting is done in cool weather, the wax may need to lie in warm water for a time before applying to the grafts, in order to have it of the proper consistency to work well; if used in warm weather it may need to lie in cold water. Care is needed in lifting it out to free it from the water as much as possible. In putting it on the grafts the hands must have a little—very little—tallow, to prevent the wax from sticking to them. This requires judgment, for if the hands are too greasy the wax will not adhere properly to the cut surfaces of the grafts. It should be pressed closely.—Journal of Agriculture.

TREES

The New Fruits

Santa Rosa Plum
The Rutland Plumcot
The Opulent Peach

And the usual full and complete assortment of citrus, deciduous and small fruits, all of which are graphically described in our new

Twentieth Anniversary Catalogue

a copy of which we want every one to have who is interested in planting trees; it is free.

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ONTARIO, CAL.

TREE TANGLEFOOT

A Sticky Preparation Applied Directly to the Bark of the Trees

Will not injure trees. A band 5 inches wide and 1-16-inch thick cannot be crossed by any climbing insect pest. Remains sticky five to ten times as long as any other known substance. You can test it at slight expense, as no apparatus is required. Used by the carload in New England against the Gypsy and Brown-Tail Moths. In California it preserves prune orchards from the Canker Worm. Wherever the Gypsy or Brown-tail Moths, Tussock Moths, Fall or Spring Canker Worm or Web Worm appear TREE TANGLEFOOT is of great value, and should be used when the caterpillars begin to crawl while they are very young.

Price 25c per lb. Liberal discount on quantities. The only safe and effective banding preparation. Send for testimonials.

THE O. & W. THUM COMPANY
Manufacturers of Tanglefoot Fly Paper Grand Rapids, Michigan

Trees Grape Vines

Full Line of Commercial Sorts

Grown on Virgin Soil, True to Name, and Healthy. Nineteen years of fair and square dealing makes us the most popular nursery in the West. ***Wilson's Trees and Grape Vines*** long noted as the very best. Catalog and Price List for the asking. Address

The Fresno Nursery
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Peaches Apricots Plums Walnuts

All the leading varieties. Texas Umbrellas by the 100.

Ornamental Plants and Roses
Burbank's Spineless Cactus

San Fernando Nursery Co.
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Fruit Growers and Vineyardists

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We Would Advise You to Use Our

This is a Fertilizer well adapted to produce a good, vigorous growth to your trees and vines, and the best quality of fruit in quantities that you desire, consequently paying you large interest on the money expended. Make a trial of this brand and you will use no other. Write for our pamphlet, ***"The Farmers' Friend,"*** for 1909.

The Pacific Guano and Fertilizer Company
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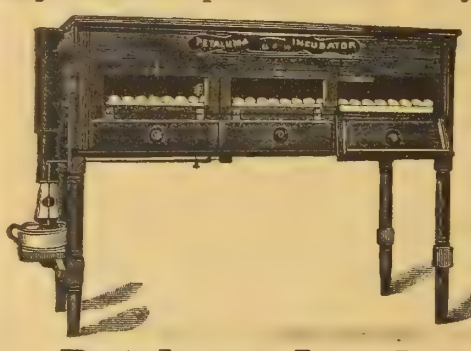
Bartlett Pears, Apples, Peaches and Plums *In Variety*

20,000 Asparagus Con Collosal. **10,000 Mammoth Blackberries**
Write for Price List
MAXWELL'S NURSERIES, ***NAPA, CAL.***

Don't Forget Quality

MIDLAND Poultry Food

Is based on ***quality*** and it is quality in Poultry Food that produces eggs. ***Cheap filler*** and ***cheap grain*** will ***not*** make eggs. ***Midland Poultry Food*** contains only the ***choicest*** cereals and animal food the market affords. You ***can't*** afford to try and be successful and not get results. ***Midland Poultry Food*** will produce results. Try it and see. $1.95 per sack



Petaluma Incubators and Brooders

Are still here, after others are gone. ***The Standard of the World Machine.*** Winners of ***more prizes*** awarded by ***World's Fair Judges*** than any other make.

Remember, we make a hot water machine. One of the ***best hot water machines*** on the market.

Send for our Illustrated Catalogue.

Petaluma Incubator Company

Petaluma, California

Our General Agents for Incubators and Brooders and Midland Poultry Food:
Petaluma Incubator Co., Petaluma, Cal.
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"Chicks Well Hatched are Half Raised."

San Jose Hatchery, San Jose, Cal.

ANNOUNCEMENT

We stand for strong, healthy chicks and will spare no efforts to secure them. Our aim is quality rather than quantity. From the eggs we hatch we want the best chicks that can be secured. We shall limit our capacity to 12,000 eggs—six of our 2,000 egg incubators.

Three factors in securing chicks are—the breeding stock for hatching eggs; the incubator and the man to do the work.

We take great care in selecting our breeders from which we secure eggs. The stock must come up to our standard. Our Mr. Langenschwadt attends to this. He is a practical poultryman.

The incubator we use has been tried out and demonstrated for several years past what it can do. We consider it the best we have come across so far. The success poultrymen are having with chicks it hatches is proof sufficient.

In Mr. Henry Langenschwadt, our manager who attends the incubators, we have a man whom we are satisfied understands his business and he is demonstrating this by results.

At present can furnish following breeds and shall add to them as we can secure stock. All from utility stock:

White Leghorns we hatch regularly in two grades—No. 1 and special. Will hatch lower priced to order but cannot recommend them.

No. 1. White Leghorns: $9.00 per 100; $25.00 for 300; $40.00 for 500; $75.00 for 1,000.

Special White Leghorns: $12.00 per 100; $34.00 for 300; $55.00 for 500; $105.00 for 1,000.

Brown Leghorns, $10.00 per 100. Black Minorcas $12.50 per 100.

Rhode Island Reds, $12.50 and 15.00 per 100.

Barred Plymouth Rocks, $12.50 per 100.

Lots of 50 add one cent each. Less than 50 chicks do not recommend to ship.

Address orders to **SAN JOSE HATCHERY,**
395 East St. James Street,
Henry Langenschwadt, Manager **San Jose, California.**

Special Prices

Today we have on hand a few of the latest models of the "Old Trusty" Incubator, just as long as they last you can have them at the lowest prices ever made by any Incubator company in the West. We wish to get our money out of them quickly, we will hold any machine you wish to select if you send a $2 deposit, these machines will not last but a few days at these prices. Now is the time to BUY and save many dollars while you can. This ad may not appear again. If you do not have the catalogue, 148 pages, send for it. We pay R. R. freight in Cal. 120 Egg Size, $10.90, 165 Egg Size $12.90, 240 Egg Size $15.90. These machines are all complete with all attachments ready to run.

E. E. McClanahan

112 E. Eighth St., Los Angeles, Cal.

Count Your Chicks Before they are Hatched!

Hubermann's Automatic Incubator and Brooder Alarm

watches the temperature in your machine **Day** and **Night** and if for any reason it changes the instrument will call you by **Automatically** ringing the warning bell. Bells may be located at any place, such as in the Barn, the feed house and in the Dwelling. Price Complete $5. Satisfaction Guaranteed. Address nearest Agent, or

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When writing advertisers, mention Cultivator.

Ducks are profitable, and they can be raised without serious outlay of cash or care.

The comfortable, scratching, singing hen is the laying hen. She pays in satisfaction and money.

Profit in the Poultry Yard

By Mrs. Frank Metcalf

We solicit short articles of a practical nature from the fancier and utility breeder, giving their experience with poultry. All inquiries pertaining to feed, management, disease and its prevention will be answered through these columns.

POINTS ABOUT PIGEONS.

PIN FEATHERS appear when the young are a week old.

In market squabs are considered too "hard" when they are allowed to fly about the pen before being killed; they are too "soft" when the skin of the crop and of the abdominal pouch is thin and transparent, and these parts are full and the heart undeveloped.

Pigeons are not destructive to gardens, as is commonly believed. Their beaks are not like that of the crow, to enable them to dig with, nor have they feet like the chicken to scratch with. Pigeons simply walk over the surface of the ground and pick up what is in plain sight, which consists principally of weed seeds.

When pigeons are "married," they remain true as steel, divide labor, are ever in each other's company, not attracted by "new faces," do not bother about their neighbor's business, and are always busy at their own work.

The older a male pigeon grows the more fatherly he becomes.

There is in fowls no affection so near the human being in its fine nature, as that of pigeons.

Owing to this intense affection, more birds are grieved to death by isolation than die from results of disease.

At a day old pigeons are known as "peepers;" at ten days old, "squeakers," and at three weeks old, "squealers."

A squab grows enormously the first twelve hours, and very rapidly after the third day.

When first born they are sparsely covered with long filaments of down the root of each filament indicating the point from which each future feather is to start. The down for a while still hangs on the tips of some of the feathers, during their growth, and is thought by some to be finally absorbed into the shaft of the growing feathers.

Pigeon manure weighs from thirty to thirty-five pounds to the bushel. It contains 3.20 per cent of nitrogen, one per cent of potash, and 1.90 per cent of phosphoric acid—about double the amount of these ingredients found in hen manure.

Should two young cocks select the same hen for a mate, they will engage in a deadly fight. Their method of carrying on a combat is peculiar. The beaks and wings alone are used, the rivals catching hold of the skin of the head with their beaks and beating each other with their strong wings.

Once in a great while a pigeon tires of his mate and seeks another. In such a case he meets with a vigorous protest from the companion of the bird which he covets. Should he persist in his attention, he is often attacked by the entire male element in the loft, and either driven from his home or killed outright.

Miller Purvis tells an interesting story: A breeder gave a pair of Homers to a friend, who took them home with him, fully fifty miles away. The birds were kept confined until after they had bred three pairs of squabs. They were then allowed their liberty, and were not out in the open more than an hour when the hen wanted to "go home and see mother," which she did. This so disgusted her husband that he left in another direction, got a new wife and brought her back to his new home, evidently as a sweet revenge on his runaway spouse.

Close observers have noticed that the hen pigeon during incubation, sits on the nest from 4 o'clock in the afternoon to 10 o'clock the next morning. The moment she leaves the nest the cock bird assumes duty, remaining at his post until the hen again returns.

For about the first week the young are fed a soft substance ejected from the craw of the parents into the mouths of the squabs. This substance is simply the food of the parent after undergoing certain changes in the crop, and is known as "pigeon milk."

It is a hard matter to tell the sex of pigeons. Generally the cock bird is larger than the hen, and his continual cooing, activity, and brushing of the tail, are the most direct evidences of sex.

It is interesting to watch the courtship of pigeons. With his head erect, cooing loudly, his wings lowered and his tail spread, he approaches a female endeavoring to strike an acquaintance. If she does not desire to mate she will stand quietly. Should she be approached by one of these gallant fellows, she coos softly and moves her head back and forth, evidently telling him that his companionship is not desired. Should he still persist and get too close she will become furious and strike at him with her bill and one wing. This to him, then, is final warning, and he keeps away.

But in case it should be "love at first sight," she will bow her head, wink her eyes, and show a trembling action of the throat; at the same time her wings will slightly flutter, her shoulders raise, and her tail spread. At times she will reach out her beak as if seeking to be kissed. This coquetry is very pretty.

As a rule the male selects the nest, and endeavors to persuade his mate to join him. Should she not feel ready to go to "housekeeping," he keeps driving and scolding her, every now and then hitting her with his bill. At times he gets very rough, going to the extreme of picking her about the head until the blood comes.—Petaluma Poultry Journal.

FEEDING ALFALFA.

Anwering a query in the Petaluma Poultry Journal, J. H. Davis says:

Authorities differ as to the amount of alfalfa meal to feed as well as the value of the meal as a feed. Some prefer finely cut green alfalfa, and when it can not be produced, cut the dry alfalfa finely and steam it several hours, putting it in a mash with other things as cornmeal, bran, crushed oats and so on. A teaspoonful of the meal to each hen every other day, would, in my opinion, be about right. It makes no difference what time of day it is fed. Some feed it every day. But I am inclined to the belief that the chopped and steamed alfalfa will give better results, as the fowls get some roughness which they need and which is better than too much concentrated feed. As alfalfa is fed in place of grass or green stuff which is largely the feed of fowls when allowed to roam at will, it might be a good plan to rotate the alfalfa feed, giving the cut and steamed feed one day and the meal the next day. And change the times for feeding it. Give it one day in the morning, the next day at noon and the next day at night. Being a purely vegetable feed, and a natural feed, it can not hurt fowls fed in any quantity. It would be a good thing for our correspondent to experiment in feeding it. Experiments are good teachers. When a breeder know a thing himself, it is worth a lot of theories and guesses.

MILLET SEED GOOD FOR BABY CHICKS.

Millet seed or any other fine grain or grass seed is best for the baby chickens. When they are one week old the tender sprouts of the oats are valuable, and make the chickens grow and develop much more rapidly than when given free range or fed largely on more solid food.

It matters not how closely the breeding pen is yarded if supplied with the above conditions and food. The eggs will be composed of the

WHAT OUR CUSTOMERS SAY

Rialto, Cal., June 10, 1908.

Will say that I am a man of thirty years' experience in the poultry business and have used all kinds of Incubators and brooders. I have prompted more than one manufacturer to improve his brooders, as we could hatch the chicks but could not raise them profitably. The "SUCCESS" is the only brooder I have any use for, as we can take the live chicks out of it, and no dead ones. I say Success to you every time, as they save thousands of chicks that would die in other brooders. I took 12 dead chicks out of a brooder the other day that cost more than your brooder and incubator combined. They do the business, that's what counts.
DAN WEBSTER.

El Cajon, Cal., April 12, 1908.

The "Success" Incubators I bought of you, 340 and 612 egg sizes, have both been very satisfactory. I got better hatches from them than any machines I ever used before. They run perfectly, no worry at all. I will want more this fall.
HERBERT OGDEN.

Ivanhoe P. O., Los Angeles, Cal.

The first hatch from the 612-egg Success Incubator was 425 good lively chicks. That's good enough for anyone.
W. E. SMITH.

Inglewood Cal., June 2, 1908.

My 612-egg "Success" Incubator runs more evenly and hatches better and stronger chicks than any of the other makes I have. I will sell off all others and use the "Success", they are the best.
CARL MATSON.

Whittier, Cal., Jan. 12, 1909.

My 612-egg size "Success" Incubator runs with less attention than any other machine I use. Am well pleased with it, says
MRS. W. H. OBEAR.

Calexico, Cal., March 22, 1908.

My first hatch from the 612 "Success" Incubator is just off. I got 416 chicks from 434 good eggs. I never used an incubator before and think that extra good. If I buy more machines you will get the order.
F. PARKS.

Florence, Cal., March 11, 1908.

My first two hatches with the 340-egg size "Success" were above 90 per cent. of the fertile eggs. The machine runs perfectly and I can recommend it to anyone. I hatch eggs from my prize Buff Orpingtons in the machine all the time.
NATHANIEL SMITH.

Fullerton, Cal., January 10, 1909.

I have recommended your machines to all that have called. I have used four of the 612-size in my hatchery, says
L. E. BLACKFORD.

BUY FROM THE FACTORY
SAVE $5 TO $20
SEND FOR MY BOOK TODAY

If you do, I will quote you a special factory price on an Incubator and brooder that will surprise you. I want every man or woman who raises chickens or who thinks of going into poultry for profit, to get my 1909 offer and book and learn the remarkable value I am giving in my

"SUCCESS" INCUBATOR
130-260-340-612 Sizes
Fire-Proof--Freight Prepaid--30 Days' Free Trial

Inglewood, Cal., June 2, 1908.
My 612-egg Success Incubator runs more evenly and hatches better and stronger chicks than any of the other makes I have. I will sell off all others aud use the "Success," they are the best.
CARL MATSON,

Whittier, Cal., Jan. 12, 1909.
My 612-egg size "Success" Incubator runs with less attention than any other machine I use. Am well pleased with it, says,
MRS. W. H. OBEAR,

But write today for my "Book About Incubators" and special factory prices. ITS FREE.
Write me personally

E. E. McClanahan
112 East 8th Street
Los Angeles, - Cal.

FREE, 32 PAGE BOOK. SUCCESS machines are used by Pioneer Hatchery Co., largest baby chick dealers in the world.

proper material to stand the process of incubation, and the chicks hatched will be fully equal in every respect to those hatched from the fowls given unlimited range.

A MATURE PULLET.

When a pullet has reached maturity, no matter at what season of the year, if she be maintained in good health and vigor and gets the proper kind and quantity of food, she will lay eggs if she has the laying capacity. Let us analyze that sentence a little.

The first point raised is a question of maturity. The pullet must be mature before she lays. If a pullet lays in October she must be hatched early enough in the spring that she will reach maturity in October. A Plymouth Rock hatched the first of April should lay the middle of October or first of November. If they are to lay a month earlier they should be hatched a month earlier. The Leghorns should lay the first of October if hatched the first of April.

STARTING RIGHT.

The thrifty, well cared for chick, kept comfortable and growing, makes a better bird all the way along, costs less money and worry, and is less subject to disease, parasites, etc., than one whose vitality is low for lack of feed or from exposure, says the Dakota Farmer. Good, vigorous stock to start with, and a good, vigorous start, are all of just as much importance as it is to have good, vigorous seed grain, corn or potatoes. Anything that taxes vitality makes more susceptible to disease and poor conditions that may follow later. The chickens hatched out in the stolen nests with natural surroundings and conditions, and sufficiently fed, and then given their own way as much as possible, are the record makers for vigor and early laying.—Commercial Poultry.

MORE CHICKS **INSURABLE INCUBATORS**

In addition to being recognized as the World's Best Hatcher of stronger chicks than any other,
CYPHERS FIRE-PROOFED, INSURABLE INCUBATOR
for 1909 *Bears the Insurance Label* without which you cannot get insurance on your buildings. Take no Risks. Buy no machine without the label. Our 212-page Free Book tells all about it. Write today.
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Buffalo, N. Y.; Boston, Mass.; New York City; Chicago, Ill.; Kansas City, Mo

White Rocks and White Leghorns

Mr. Walter Hogan pronounced my standard bred "Fishel" White Rocks the best laying type he ever handled. 220 to 250 capacity. My White Leghorns are winning with 220 to 270 capacity. Mated for egg production. My birds have been selected for years for laying. Eggs $2.00 for 15, $5.00 to $10.00 per 100.

H. G. BIDWELL R. D. 2 Sacramento, Cal.

A SIMPLE WATER FOUNTAIN.

Fresh clean water is kept before the chicks constantly, and is kept clean by using a tin can from which the top has been melted with an opening made in the open end three-fourths inch long (high) and one-half inch wide. The can is filled and inverted in a common earthen flower-pot saucer (open end downward), making an automatic fountain which is raised one and one-half inches from the floor of the brooder or coop. If the fountain is used with hens, some way must be provided to keep the hens from knocking the can over. I overcame this by placing a brick on top of the can.—The Standard.

A "Standard-bred" fowl and a "Pure-bred" fowl are not necessarily the same. A bird may not be up to the standard qualifications and yet be a pure-bred. But a standard-bred is bound to be a pure-bred. Utility poultry are fowls bred for increased egg and meat production, and while they are pure in blood may be way off in markings from a poultry show point of view. No fowl can be a successful utility bird unless it is pure-bred.

Harry McIntire, of San Diego, has started on a three months trip to Honolulu. While there he will visit the leading poultrymen and study web and feather as it exists on the Islands. No doubt Mr. McIntire will gain much practical information, and we hope to be able to give a short article to our readers from him.

When the fattening season arrives, according to an experienced goose raiser, keep the fowls shut away from bathing water, and feed barleymeal, cornmeal and beef scraps and some chopped celery. Keep them in a subdued light for three or four weeks, when they can be let out for a couple of days to enjoy the use of a pond. Then return to clean quarters, and feed on barleymeal and milk, and chopped celery, for two or three days, letting them go twenty-four hours before killing.

There are two kinds of fowls, the right kind and the wrong kind. And there are too many of the latter.

Now is the time when it pays to have the birds tame. A house full of wild chickens is inconvenient, to say the least.

Be sure to have the floor high enough to drain well. I have seen hen houses that were lower than the yard and were, of course, always damp.

Incubators

A good chance to get a small machine at a big bargain price. We are overstocked with the small size Improved Pacific, 62 egg capacity. Regular price $10.50, now $7.00 till stock is reduced. Not old, second hand machines, but brand new and first-class in every respect. No better made. Hot water heating; best Sheer Regulators; everything the best. Catalogue free.

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Produce Stronger, Healthier Chicks than any Heated Brooder.
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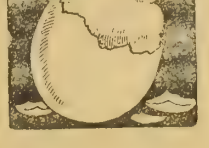
Eggs $1 per 15, $6 per 100, $50 per 1000. Day-old-chicks 12½ cents each, $10 per 100, $90 per 1000. Book your orders early to avoid disappointment.
OSWALD M. ROBERTSON **Box 194, Arlington, California**



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Stock, Eggs and ***Baby Chicks*** for sale. Also eggs and chicks from ***High Class Buff Orpingtons***, (Cook strain.) Write for descriptive circular.
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FOR YOU TO BUY the many different articles composing Coulson's Special Dry Chick Food is quite impracticable; you could not be certain as to their quality for one thing, and the high cost of certain of them when purchased in small lots might lead to their being left out to the detriment of the chick.

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COULSON'S SPECIAL DRY CHICK FOOD can be fed exclusively to your little chicks for the first six weeks, at a cost of about four cents (4c) each; and what is of still greater importance, it will do all that can be done in the way of feed to bring them through that critical period of their lives in full health and vigor.

TO RAISE EVERY CHICK you hatch; to have fine, large, healthy chicks; to have chicks that will stand up and crow when eight weeks old; to raise chicks that you will be proud of, FEED COULSON'S SPECIAL DRY CHICK FOOD, THE LIFE SAVER.

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GERMAIN SEED CO., Distributing Agents, Los Angeles, Cal.

POULTRY TALKS.

Do not neglect to furnish green food and meat scraps for the hens at this time of the year if they are expected to lay well. Be careful about feeding stimulants and condiments, as they generally do more harm than good. With good wholesome feed and the premises kept clean and in a sanitary condition fowls will need no medicine. Be sure the biddies have plenty of pure drinking water. Yards that are used continuously for fowls should be plowed often to turn over filth. A good way is to sow them to rye or wheat. The hens will enjoy scratching for the grain, and besides a great deal of it will sprout which will help to supply green food. In the report made by the Kansas State Board of Agriculture, they claim there are at least four things to consider about the question of winter eggs, viz: The birds, the feed, the place of shelter and the peculiarities of the weather. I think the above report is about right. The birds we intend to use for winter layers must be young, early hatched pullets are best. Some breed noted for egg production should be selected and they should be bred for heavy egg production rather than fancy points.

Next, house in buildings suited to the climate where one lives, open fronts are the only satisfactory kind for me. Give plenty of feed, a variety of it including an ample supply of green feed and meat scraps. Feed grain in litter to give exercise. This is the only recipe I know of that will produce a supply of winter eggs.

I am often asked what breed of chickens I consider best? Which is a very hard question to answer and it can only be answered satisfactorily by the individual intending to breed them and what he wishes to produce. If eggs are wanted select a breed of the Leghorn family, if an all-purpose fowl, then select the Plymouth Rock, Wyandotte or Buckeye. If breeding for size get a breed from the Asiatic family and you will be pleased.

Remember the mistakes made last year and try to overcome them the coming year. There is so much written about overfeeding, and so little about underfeeding. I believe there is more underfed than overfed, if a fowl is given the right kind of food and plenty of exercise there is no danger of overfeeding. Don't expect poultry to shift for themselves and return a profit. I don't see why every one don't raise thoroughbreds of some variety, as they are no more trouble than scrubs and are certainly more profitable.—Southern Poultryman.

FATTENING TURKEYS.

The first thing is to stop them from too much running and wandering says a writer in San Jose Mercury. This should be done from their sixth or seventh month on; before that time it is no matter how or what they are fed—they want to run, hunt and wander. This they need for growth and to keep their digestive organs active. Nature has put in them a strong desire for it. When coming to adolesence, their growth in bulk nearing their full measure, having stronger organs for digestion, they are ready to stop their running when invited home to feast, as follows:

Water and Grit.

First, see that they have pure water, sharp grit (charcoal, sea shells, arranged conveniently in long boxes or troughs and kept clean). Then about five weeks before dressing we begin feeding mixed grain of oats, barley, wheat and corn. For the first week we do not give them all they wish. Second week, wheat and corn is fed only; wheat is lessened until on the third week it is entirely withdrawn, and corn alone is fed three times a day. In that way their appetite for corn is cultivated, as at the start they do not like to make a whole meal of it, and if not fed it before may not pick more than a couple of kernels each. Corn must be at least a year old; all grain must be dry and wholesome.

The Last Feeds.

The last ten days they are given all

White Rocks

Gutting's Superiors **Bred to Lay**

Again prove their superiority by winning all first prizes at the 20th Annual Show of the L. A. County Poultry Association. Send for circular giving prizes won and prices of stock and eggs. Buy eggs from prize winners and raise prize winners.

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We can fill orders promptly from our selected matings of utility bred stock, at $5 per 100, $45 per 1000. Our prize winning Leghorn, $2 per setting of 13. Won all first and all but one second, also silver cup for best pen at last Chutes Park Show.

San Gabriel car to Masonic Home, two blocks south to ranch.

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THEY PAY
At Every Pop
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Chicks 12c.

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White Wyandottes

The 200 egg kind—the all white variety—the best all around fowl for farm or town purpose. Eggs from the best strains reasonable.

Wm. C. Parker, 111 Pacific Avenue, Santa Cruz, Cal.

the corn they can clean up; three times, nothing left to be trampled; sweep it if any. All this time they are left free to pick at grasses or any extra things needed, which they know very well what and where to find; and to play, to fight, to make love and indulge in dust baths. They should not be scared or chased too much; they should be excluded from strange dogs, animals or men. Every day they should be fed on fresh ground, to avoid contamination by their droppings.

Then turkeys get naturally full and smooth; uniformly fat, yet hard and muscular. When dressed, they look a great deal like the corn they ate.

THE VALUE OF MASHES.

Mash feeding has a firm hold on the imagination of poultrymen, and it has some place in practical feeding. But a good many of the arguments for mash feeding for hens will not look you in the face.

Some experiments have been made which indicate that hens cannot make great egg records without a considerable proportion of ground feed. This is for the same reason that it is necessary to supply ground feed to fattening stock to get best results. In each case it is necessary to secure prompt and complete assimilation of the feed consumed.

One of the results of hopper feeding, however, has been to throw some doubts on the imperative necessity for mashes under ordinary conditions, because the dry mash lacks much of the value commonly attributed to the wet mash. Usually, too, the consumption of mash is greatly reduced when fed dry, owing to the unattractiveness of most dry mixtures; and yet the change has not affected egg yield, if properly managed.

I think it is true that the 200-egg hen can hardly be attained on a whole grain ration, but there's only one of that sort in a million, anyway. Most of the rest can reach the full limit of their productive capacity on a slower schedule.

Under ordinary conditions hens will eat and assimilate enough on an almost exclusive whole grain ration to reach any ordinary expectation in commercial flocks.

Aside from this point the chief arguments in favor of mashes are that they cheapen the ration and increase its bulk.

Just how much importance should be attached to the idea that the hen's feed must be made bulky, is not clear to me. So far as I know, no very successful experimenting has been done along this line. It seems that as much is lost by making the mash carry an unnecessary load of indigestible and useless matter as would be lost by ignoring the matter of bulk entirely.—National Stockman and Farmer.

ROUP.

Roup is a contagious catarrh, and will, unless immediately checked, go through the entire flock. Every affected bird should be separated from the rest at once. The swellings on the head should be opened with a sharp instrument and the wound treated with antiseptic such as listerine, or one part carbolic acid to 20 parts water. A 5-per-cent solution of sulphate of copper injected into the nostrils, the cleft of the palate, the eyes, and the wounds made by opening the swellings, is said to be very good.

Sometimes roup takes the form of diphtheria and is more violent than ordinary roup. It is very difficult to cure and if this disease got into my own flock I would kill every affected bird and burn its body. You will save time and probably a part of your flock by killing all the diseased birds and burning them.

Put the rest of the flock in warm, dry quarters, and before putting them in burn a little sulphur in the buildings, first closing all the openings. Do not put the birds into the building for at least five hours after the burning of the sulphur, during which time it should be thoroughly ventilated.

SUCCULENT FEED.

Many a poor chicken has gone the whole summer through, penned up in a yard not much larger than 8x10, without the signs of anything green to eat. It is just as essential for a fowl to have some kind of bulky, green feed, as it is for a cow to have salt. You possibly have observed the eagerness of fowls, if shut up in this manner, should even an apple core be thrown them.

Many a poultryman has made a failure of the business, and the profits gone on the wrong side of the ledger, simply by neglecting to furnish his birds what their system demanded to keep them in a healthy condition. It's the little things that count in the poultry business. Don't let the winter catch you without a liberal supply of cabbage or mangel wurzels; the additional profits from your flock will doubly pay you for the trouble, as well as materially aid in making your fowls contented and happy—Commercial Poultry.

THE MERITS OF COLLIES.

The standard issued by the Collie Club states that in deciding the merits of Collies color is immaterial. This being so, and seeing that classes are made for tri-colors, Blue Merles and sables, also for graduates and veterans, it seems strange that show committees ignore the whites. Assuredly there is no color more attractive for a ladies' pet than white, with sable markings. It is to be hoped that some show committee will try a class for the white Collie, which deserves better treatment than it has hitherto received.

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Sullivan's COMMONWEALTH STRAIN is bred for egg production, has won the cream of the prizes at leading shows, from Seattle to the World's Fair. We did not show at the State Fair this year but have better stock than ever, and want you to send for our Prize Record and watch the later shows that we win.

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The strongest and best ever produced in America, it precedes all others in pumping. A full line of repairs for all style mills kept on hand. Look up your agent in your location for Woodmanse mills. If you have no agent write direct and I will gladly answer all correspondence and send circulars.
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Just Out New Baby Chick Catalog

tells all about the 19 kinds we hatch, and all about our low prices on the thoroughbred hatching eggs and chicks. We ship everywhere, our catalog shows what our customers have to say from everywhere. We hatch thousands of all kinds of chicks, ducks, turkeys, etc., every week. Ollie Peacott, Silverbell, Ariz., says every chick of his shipment arrived safe. T. P. Dickson, Sacramento, 615-24th St., says every chick arrived safe. Our catalog is something new, and worth while to send for.

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SAMUEL R. KELLAM, former president of the L. A. Co. Poultry Association, says: "West Coast Chick Feed is the best feed for young chicks I have ever used. I have given this feed a thorough test, and have always found that it produced fine, large, healthy chicks."

MRS. A. BASLEY, the celebrated poultry authority, says. "I want some more of your West Coast Chick Feed, for it is excellent. It is purer, cleaner and appears better balanced than other feed I had been using, and to tell the truth, I have been experimenting, feeding both together, and they always eat yours in preference."

Ask your neighbors, for there is more of "West Coast" sold in Southern California than all other kinds put together. If not sold by your dealer send us $3.50 and we will send a 100 lb. sack, freight prepaid within 300 miles.

West Coast Mill

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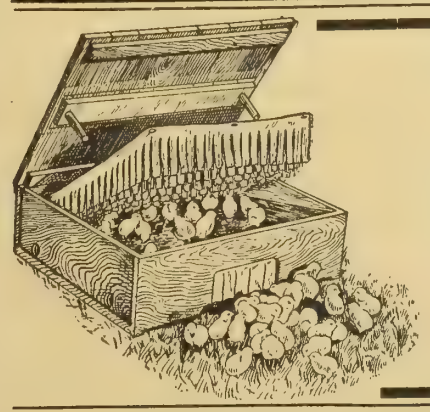

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The first essential to success in the poultry business is that the foundation stock or eggs be purchased from a reliable breeder, one who has made a success of the poultry business from the fact that his stock has proven to be the Business Hen. Such stock or eggs we now offer you and stand back of our sales. Prices for stock on application. Correspondence solicited.
Eggs—$1.50 per 15, $7.00 per 100 and $60.00 per 1000.
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White Wyandottes

My San Jose Winnings: 1st, 2nd and 3rd Cock; 1st Cockerel; 1st, 2nd and 3rd Hen; 1st and 2nd Pullet. The above winnings were made out of ten entries.

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BUFF and WHITE **WYANDOTTES** BREEDER OF Six Varieties of **BANTAMS**
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If you are interested in the Best Seeds, Etc., write for our 1909 Seed and Plant Annual, which we will mail to you free. Please mention this paper.

Trumbull Seed Company
Successors to Trumbull & Beebe
61 California St., San Francisco

Small Fruits and Vegetables

GARDEN PEAS.

MORE people fail than succeed, in their attempts to grow peas in California. The reasons are many. Very often varieties are chosen which will not do well here. One would think any variety would yield well in California, but if you look into the catalogues of California seedsmen you will notice they do not list one-third as many varieties as Eastern seedsmen, and if you go among the gardeners who grow for market, you will find the list still further reduced—sometimes the list will embrace but two or three varieties. For a number of years the Yorkshire Hero has led all others in popularity, but it is claimed the Pride of Cahuenga will surpass it in yield and is very much sweeter.

Where ground is limited the American Wonder will give excellent returns if you make the soil very rich. And that calls to mind another reason for failure—poverty of soil. It is altogether useless to attempt to grow a profitable crop of peas on poor soil—and nearly all soil in California is poor, from the gardener's standpoint. The gardener in the vicinity of any of the large cities of the Atlantic coast does not think of growing a crop of vegetables without heavily fertilizing the land, using from seventy-five to one hundred tons of stable manure annually, and to begin with his land is about as fertile as ours. With such treatment it takes about 3 years to bring the land up to a satisfactory standard for the production of profitable crops of the leading vegetables. The methods used by Chinamen and Japs would hopelessly bankrupt the eastern gardener in a single season. And if you observe carefully, it only requires four or five years for the Chinaman or Jap to so impoverish our very best soil, that they, even, are obliged to abandon it.

Another reason for failure is unseasonable planting. After you get back from the coast 10 or 15 miles and farther, it becomes a difficult matter to grow peas in the midsummer months. The hot days followed by cool nights make ideal conditions for mildew—perhaps the worst enemy we have in growing this vegetable. From the middle to the latter part of March is about as late as we can plant and expect a good crop, although we often have summers that, up to July, are so cool that it would be safe to plant a month later. Along the coast, however, they may be planted every month in the year with a fair chance for success every time. If I lived in a Coast town and was gardening for profit or for even but the home table, I would plant peas every month, Sometimes the price might be low but most of the time the price would afford a good profit. Avoid attempting to grow peas in frosty locations at such times in the year when frosts are expected. While the plant itself is hardy enough to withstand any frost we are likely to have, the young peas will not endure a hard frost.

Many gardeners back from the Coast plant peas every season in August and September, very much in the spirit of the gambler. If there happens to be a frostless winter they prove very profitable. If destroyed by the frost it is the seed and labor lost.

The dwarf varieties may be planted in rows one foot apart and the stronger growing kinds like Yorkshire Hero in rows two and one-half to three feet apart. Make furrows three to four inches deep and scatter the seeds along the furrow so that there will be a good seed every three or four inches and cover with a hoe or light plow. Many gardeners sow much thicker than this, but if the seed is good, and your soil fertile, this will be close enough.

Peas planted in the spring—say from February 1st and later— should be planted not less than four inches deep but do not cover more than half the full depth until after they are a few inches high when the soil can be drawn into the furrow to the full depth. When the plants are five or six inches high dust sulphur along the row. Some use a bellows, some a gunny sack. Any method that will distribute the sulphur lightly and evenly will answer. Whatever method is used, it will always pay to run the sulphur through a flour sieve to break up the lumps. It will not matter if some of the sulphur falls upon the ground, but it should be in proximity to the row. It is the fumes of the sulphur set free by the heat of the sun that destroys the spores of mildew and it should be used as a preventive, for if the vines once become covered with mildew, no amount of sulphur will dstroy it. Make a second application after the pods have formed.

How to fertilize? Well, if possible, get stable manure and spread it over the ground and plow or spade it in. I should prefer that from the dairy corral, but any kind will do. There seems to be a deep-seated prejudice against using fresh manure. This, I think has arisen because of the injurious effects so often seen in the east, where irrigation is not used. If the weather should be dry the crops often burn up. With irrigation, it is safe to use fresh manure in any reasonable quantity. If impossible to get manure use fine ground bone at the rate of not less than 500 lbs. per acre, sown broadcast over the ground after it is plowed and then harrow or cultivate it in—and do this cultivating or harrowing pretty thoroughly.

It rarely pays to grow the very tall varieties of peas in California because of the difficulty and labor involved in getting brush. In small gardens it will often prove satisfactory. The finest results I ever saw with Yorkshire Hero was in a Pasadena garden where the owner had made a low fence around his garden by driving light stakes about 8 feet apart and stretching telephone wire along and fastening it to the stakes. The stakes were 2½ feet above ground and there were three wires, the bottom one is hardly enough to withstand any soil was sandy loam and after the peas were up to the first wire the soil was mulched a couple of inches deep with manure from the dairy corral. When I saw them the vines were full to the top and loaded all over with such a crop of peas as I have never seen elsewhere.—Q. A. Lobingier.

The Ornamental Garden

BEAUTY OF HOME YARD.

The immediate grounds about the farm dwelling can be made beautiful and sanitary as few other places can. The home grounds should be ample, as large as is consistent with the size of the dwelling, and much larger than most farm home grounds are.

An acre is not too much. Some may think that an acre of land is too much to waste on a simple dooryard, but it must be remembered, that this part of the farm is where the farmer and his family live and spend a greater part of their time, and that the better the home grounds the better will be the life of the family.

It is a wrong estimate of life and property to be forever making money to enlarge the farm in area in buying extra tracts of land for future use, and not improve and make the best of the little spot where the wife and children must spend nearly all of their best life.

Some look forward to and prepare too much for pleasure to come and do not expend any means on making the present the very best that it can be. They let the home grounds and surroundings remain shabby and unimproved, expending the extra money on property to be handed down to the children, or putting it in the bank.

This is wrong when there is any

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neglect in home improvement. If the children need help, by all means they need it now while they are helpless more than when they grow up and will be able to fully care for themselves, perhaps much better than we ever shall be able to care for them.

They need the comforts, healthfulness, and beautifying influences of good homes and surroundings in order to make them healthy, strong, beautiful and good. These are infinitely better than inherited real estate, personal property, or money.

The child whose home life is perfect for physical and mental development will go out into the world with a rich heritage. If the home is beautiful and attractive the child when grown older will love to come back to visit the parents who made the home.

The grounds surrounding the farm dwelling should be well drained and graded to suit the location. The main open part of the space should be lawn of good grass and be kept mown low at all times so that air and sunlight may purify the soil.

The lawn is for use, to walk and play on, and should be laid out with that in view. "Keep off the grass" may be all right for city parks, but the home lawn is a green carpeted outdoor floor for every-day use.

Abundance of flowers, shrubs and trees are essentials for completing the picture, but flowers and shrubs must be massed in clumps and borders along the sides, and the trees must be grouped in one place, preferably the rear or somewhat removed from one side of the dwelling.

Under the trees in the cool, shady part of the grounds a children's playhouse or rustic, open structure is a good place for rest and play for both young and old. We can never get too much of the open air, even though we live in the country; and such a covered place under the trees makes a fine nook in which to read or take a nap and fully enjoy the sweets of outdoor life.

Such a play-house is dear to the hearts of children, and they will spend many happy hours each day there; when if no such provision were made they would be in places in which we should not want them.

For wet weather, concrete walks are comfortable and economical. They are cheaply and easily made. They need not necessarily be wide, but there should be enough of them so that all outbuildings and other much frequented places can be reached without walking on the wet ground. Walks a foot wide are much better than none, and such can be made at a trifling cost.

The barn and entire group of farm buildings, together with the grounds they occupy, may be made to harmonize in a general way by proper construction, arrangement, and painting. The grounds about the barn and other feed and stock buildings, which for convenience are located near the dwelling may, and should be, as neat and clean as the home grounds proper. This is both good farm management and a mark of good taste and character on the part of the farmer.

Good fences around all the home grounds and lots are a necessary convenience, and keeping them in good repair adds to the neatness and beauty of the picture as a whole.—Farm World.

PANSY.

These lovely flowers are favorites with all, not only for the brilliancy and variety of their colors, but for the durability of their bloom. Seeds may be sown in open ground in spring or summer, or in hotbeds early in spring. The ground cannot be too rich; coolness and moisture are necessary. Transplant them when an inch high.

NASTURTIUM.

These will always be valuable summer flowering plants. They flower better, however, in a poor, rocky soil, as a rich one has a tendency to make them "run to leaf." The "Tom Thumb" varieties are splendid bedding sorts.

The annual short course for fruit growers is now in session at the State College at Pullman, Washington.

CONSERVATION.

THE National Conservation Commission has recently made public the first of its schedules on which the inventory of the country's natural resources is being conducted. Only a few of the schedules have, as yet, been given out, but between the lines of these it is plainly evident the National Conservation Commission intends to hunt down waste in all its varied forms and to devise some means to prevent it. This is apparent in the general schedules as to each of the four sections of the Commission—waters, forests, lands, and minerals.

For instance, the schedule relating to lands inquires into waste of soil by erosion, which is the washing away of the land. That schedule also suggests waste through "bad agricultural methods." The lands schedule likewise goes into waste in the carrying capacity of the public range in the West. The section of waters is inquiring into how much land capable of irrigation is wasted by not being irrigated. More important still are its suggestive inquiries tending to show that we are wasting our waterways to an alarming extent by not using them as we should. Perhaps the greatest form of waste brought out in the entire schedule is that relating to water power. Two of the official inquiries are as follows:

"Are existing developed water powers put to their full use?"

"To what extent can coal be saved by the substitution of water power?"

Under the head of flood waters, the Commission inquires, "To what extent are flood waters wasted?"

The minerals section of the Commission is seeking to find out "the nature and extent of waste in the mining, extraction and use of mineral products" and "methods of preventing or lessening this waste."

That forest conservation must largely take the form of saving wastes in manufacture seems to be the conviction of the Conservation Commission. The Commission is busy conducting a census by correspondence to find the common wastes in wood-using industries. Queries have been sent to eight hundred manufacturers of cooperage stock for the purpose of getting a line on the waste of wood in the making of barrels and casks.

Similar wastes occur in turning the logs into headings and in the manufacture of barrel hoops. The Forest Service is trying to find just how important such wastes are, with the object of suggesting, if possible, some way of cutting down the drains upon the forests which mean no gain to any one, but loss to all. The returns from the inquiries will form part of the report of the Conservation Commission, when the work of taking the preliminary inventory of our natural resources is completed.

JUST WHAT SHE WANTED.

The lecturer had been describing some of the sights he had seen abroad. "There are some spectacles," he said, "that one never forgets."

"I wish you could tell me where I can get a pair of them," exclaimed an old lady in the audience. "I'm always forgetting mine."—Chicago News.

PROTECTION FOR STRICKEN MESSINA.

Of course, everybody was homeless in the chief city of that beautiful Sicilian isle, after the most appalling calamity of modern times.

Close upon the quick emergency action to relieve actual suffering our government turned its attention to providing comfort and shelter for those bereft of home and habitation. Accordingly an order was immediately placed with the Barber Asphalt Paving Company, Philadephia, by the U. S. Government for over two hundred thousand square feet of Genasco Ready Roofing for the direct shipment to Messina by government vessel from the Brooklyn Navy Yards.

This order was promptly filled by this the largest company in the world manufacturing ready roofing, and the roofing was dispatched to complete homes for the homeless and provide shelter for the shelterless.

The choice of the Government in selecting Genasco Ready Roofing for the purpose is a glowing tribute to the merits of this roofing for the Government is exacting in its requirements and particular in its choice.

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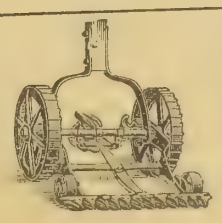

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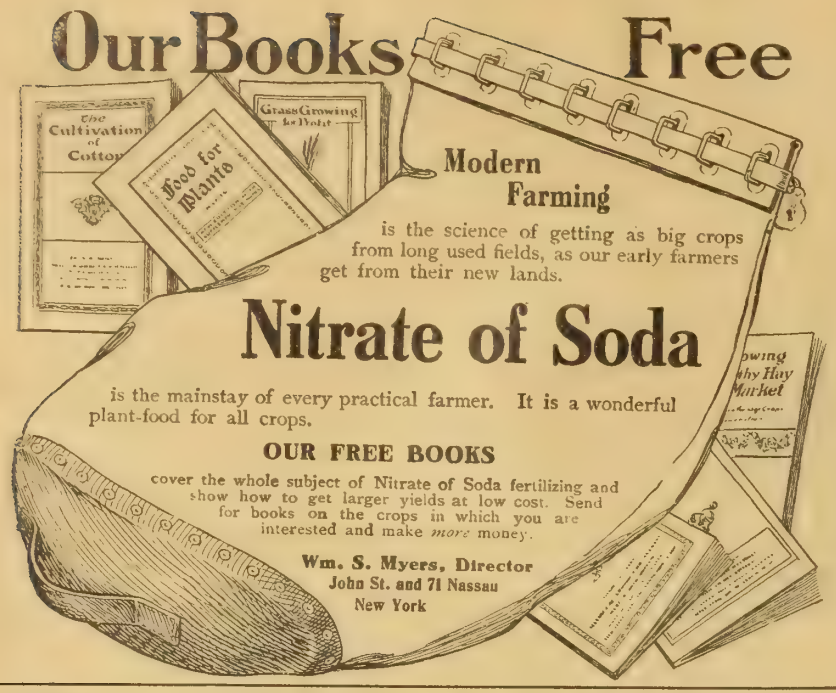

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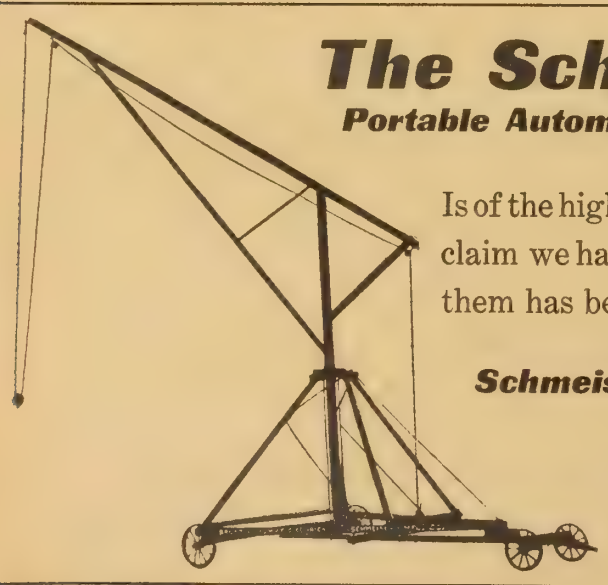

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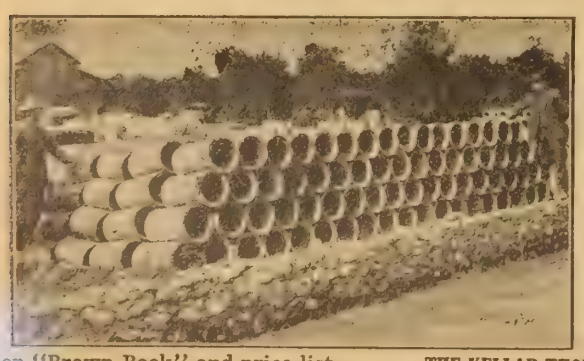

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Ten-Inch Pipe

made by four men from 10 bbls. of cement in 9 hours — 280 two-foot joints, or 560 feet. This pipe was made with the

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An equal amount can not be made with any other tools in the same period of time. Write for "Brown Book" and price list.

THE KELLAR-THOMASON MFG. CO., Covina, Cal.

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Naming Apple.

Please give name of apple which I send under other cover.—H. C., Laton.

The apple is a small, red apple, brightly colored, hard and firm, apparently an exceptionally fine keeper. Round or slightly elongated in shape. It was submitted to Mr. Mathews, one of the largest apple handlers in Los Angeles, and while he would not definitely identify it, thought it was either the Wagener or the Jonathan. Subscribers in sending apples for naming should bear in mind the great difficulty, in fact the absolute impossibility of naming apples in this state without knowing all particulars possible to be known. A mountain grown apple and one grown in interior valleys might have entirely different characteristics though the scions were taken from the same tree. To aid in such identification give fullest particulars as to shape of tree, where grown, and all other possible information. If this apple was grown at Laton it shows remarkable coloring for that section and should prove valuable.

Plowing Under Green Manure.

At what age and size should burr clover and vetches be plowed under to give the greatest amount of fertilizer and humus in the soil? Do they gain most during this respect in the first part of the season or later? What is the best way to put them in the ground so as to get the best results? If they are to be plowed under, to what depth?—M. G. B., Colton.

There is no material difference, pound for pound, in the content of nitrogen between the earlier and later growth. The nitrogen gathering nodules form very early in the life of the plant and we are told it has slightly more value then than when the plant is older, and that there is some loss, especially in humus content, when the plant begins forming woody fibre. But it must be borne in mind that the increase in tonnage is so great after the plant is well rooted that it is desirable to secure the benefit of this as much as possible. Therefore the usual plan is to let it grow as long as possible not to let the soil get too hard from loss of moisture. Probably the best way is to plow under with a plow with a long mold board and heavy chain. Get under six or eight inches if possible without disturbing the roots of the trees. Some orchardists, however, prefer disking, cutting the vines into small bits and working into the upper soil. After plowing under, the next step is to follow with a disk harrow, set very straight, in the same direction in which the plow went first, then following diagonally.

Pearl Guineas.

Replying to the recent inquiry about guinea fowls, Mrs. J. Lenert of Chino writes that she has Pearl Guineas and says: "I think they would stand the climate of Imperial valley, as they originally came from Africa. I have excellent success in raising them here."

Beet Pulp.

Please give me information concerning feeding of beet pulp to cow, as to quantity per feeding, effect on amount and test of milk. Can it be given without other feed?—G. N. S., Riverside.

This question will be answered at length in an article in next week's Cultivator, in the Stock Department. We may say now, however, that beet pulp is an excellent addition to the hay ration, although it cannot be fed exclusively. One experiment station states that the food requirements for 2200 pounds live weight of the stock per day is well balanced as follows: fresh beet pulp 110 lbs., hay 40 lbs., moist beer grains 44 lbs., bruised grains 7 lbs., peanut cake 2 lbs. Some of these feeds are not convenient for California feeding, but it gives the proportion of hay and pulp. It would probably increase the flow of milk, but we think it is conceded that no feed has influence on the test of milk.

Large Potatoes for Seed.

Should large potatoes be selected for planting, or will small size potatoes of good shape do just as well?—S., Soquel.

For years, many growers maintained the small seed were just as valuable for planting and would produce the equal in every way of the larger potatoes provided the smaller ones were perfectly ripe. Under this plan of work it became a settled conviction that seed potatoes would "run out" and have to be renewed from other sections. Now it is generally believed that instead of running out potatoes may be made by proper selection to increase in productiveness, size and quality from year to year. If one wishes merely one crop, it is barely possible that the small potatoes will give very good returns; but the regular planter who values a slight increase in crop and wishes to breed up his seed should choose the most perfectly formed potatoes from the strongest producing vines.

Nitrate of Soda.

When is the best time and what are the best methods of applying nitrate of soda to an orange grove that is now in first class condition?—Reader, Bloomington.

The best time to apply nitrate of soda is after the heaviest storms are over, because it is very soluble and heavy rains after application might cause great loss by leaching away from the roots. As this is a good season to secure its advantages, however, if applied now, apply small quantity now; a few weeks later another application; still later, when the danger of further heavy rains is past give the last application. For instance, if you have planned a 3-pound application to each full-grown tree, give three-fourths of a pound now, and the rest later. If the trees are young, do not, of course, make such heavy applications.

Luglienga Grapes.

A subscriber recently inquired regarding Luglienga grapes. We have a statement from Mr. Roeding that the Fancher Creek Nursery has a very few vines in grafted stock.

Value of Hen Manure.

What ought I to pay for old, dry hen manure per pound?—T. R. M., Ioamosa.

We refer you to the Cultivator for September 10, 1908, in which Mr. Mills answers this question at length. Briefly, we would say, it is worth about $5 per ton.

To Kill Weeds.

Is there any kind of acid solution cheap enough to be practical to kill weeds along sides of flume?—J. B. B., E. Highlands.

Such an application is apt to be disappointing. Plenty of materials, placed on the ground, will destroy growth, but such applications injure practically all plant growth nearby. Within the last few years there have been extensive experiments in spraying with sulphate of iron in grain fields, a solution of 100 lbs. sulphate of iron to each 50 gallons water used. This solution is sprayed over the grain fields and has proved of no particular injury to wheat or other grains while destroying wild mustard,

dandelions, cocklebur, and Canada thistles. We have never heard of its being used on weeds along a flume, but of course in such a case the solution could be made much stronger. We do not know what the effect would be on Bermuda grass and other persistent pests. If you try it let us hear from you.

Live Oak.

Is there any way by which I can hasten the growth of a young oak? Will fertilizer and water help, or is it best to let it alone? It is in very gravelly soil.—R.

To be sure a reasonable amount of water and fertilizer will aid in gravelly soil in establishing a young live oak. It is, however, remarkably discouraging under the best of conditions to watch a young live oak wait several years to establish its roots before it begins to grow perceptibly. The writer prefers the eucalyptus or more rapid growing trees as a rule. Young people may live long enough to see the young tree grow to respectable size, but for all the quicker growing trees have an advantage. The live oak is amongst our most beautiful trees, once it is grown.

Grafting Olives.

I have a large olive tree about ten inches in diameter. Think it is about 18 years old. It is thrifty, strong growing tree, but fruit is worthless being so very small. Can this tree be profitably grafted?—S. H., Nestor.

The olive can be grafted and if the tree is located so as to be valuable for shade and ornament it will probably pay to take up the work of grafting. As a commercial proposition it might be doubtful. So large a tree would have to be grafted very high and in the smaller branches. Use scions not larger than a lead pencil, inserting in April. Graft high enough so the branches will not be over say a couple of inches in diameter. The side graft usually does well with the olive. Grafting is high as this in a large tree will make a great quantity of wood from which the sprouts will have to be continually pruned to prevent the old top reasserting itself.

Agricultural School.

Will you please inform me is there or will there be an agricultural school in Los Angeles in the near future?—W. E. K., Glendora.

There are three high schools in the city of Los Angeles, the L. A. High, Polytechnic and Gardena High, which is in the outskirts of the city though within the city limits. This Gardena high school has as principal a man who is reported to be an enthusiast on the question of agricultural education. His enthusiasm is backed by remarkably good ideas and he is being supported in them by the Los Angeles school board. It is now hoped that the Gardena high school will be the best as it will be the first public agricultural high school in the country.

Billion Dollar Grass.

Will some one who has tried it tell me as to the value of Salzer's Billion Dollar Grass? Does it become a pest like Johnson Grass?—Subscriber.

We know nothing whatever of this grass and ask our subscribers if any have tried it, to be kind enough to report. If it is as big as its name indicates it surely will be equal to Johnson grass.

Bitter Milk.

I have a young cow that dropped her first calf in May 1907, when she was 2½ years old. We were unable to use the milk for a month after the calf came on account of a disagreeable taste. The veterinarian thought it was caused by alfalfa hay, so I changed to oat hay for a time. The milk got all right and caused no further trouble, though I soon changed back to alfalfa. She dropped her second calf in July 1908. This time we had no trouble with the milk until about the first of December, when it began to smell offensive and to taste bitter, (not salty) very much like that of a cow about to be fresh. It would taste and smell slightly when first milked and by the end of 24 hours would be very offensive. Her mother and grandmother were subject to such spells I have recently learned.—Inquirer.

I have a cow about three months fresh and the milk and cream turn bitter in from 30 to 36 hours. Feed alfalfa and rolled barley. All milk utensils are thoroughly scalded both morning and night. Can you tell cause and remedy?—Subscriber.

If you are sure that is a race quality in these cows, they should go to the butcher at once and the strain be stamped out, as it is worthless. First, however, I should give the benefit of the doubt as I went through a like siege in finding out how to make gilt edge butter. I never found a cow giving bad milk. Afterwards I even fed cabbage and onions to see if I could make the cow send the taste into the milk. The taste comes from something absorbed by the milk. I have the cows fed on alfalfa to within an hour of milking time an then put them into a yard until they have breathed off the flavor. The stable is kept clean from droppings and if a cow makes any, a shovel of gypsum is thrown over it to keep down the smells. The stables are kept whitewashed and in sweet condition all the time. I do not say a cow may not give taste to the milk, only I have never had a case of its happening in the dairy here. Try also sweetening all the pails with lime water after they are scalded—thoroughly scalded. Lime water is made by the barrel by dropping into a clean barrel a large lump of lime and working it smooth with a stick in a small amount of water, adding water as it slakes. Then fill up the barrel with water and if there is a small amount of lime in the bottom you know you have a saturated solution by no more dissolving. After twenty-four hours skim off the top and use the clear water of lime to sweeten the milk buckets. A tablespoonful can be added at any time to the milk given to a calf if it has scours.—M. E. S.

Muddy Corral.

How can I best fix my cow lot to keep it from getting muddy? Would concrete be too hard for the cows to be on all the time? Has any one tried oil for this purpose? The lot is 32 by 48 feet.—Subscriber.

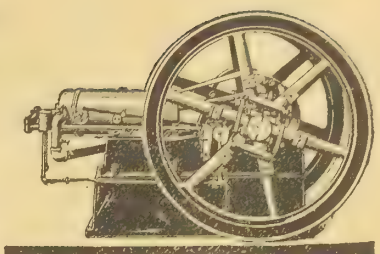
During a season like this, nothing but paving will keep a corral clean. The oiled road is "loblolly" under the cows tramping to the Bermuda pasture. Concrete, well roughened, or else the small cobbles from the washes set into concrete except the top inch would make a perfect pavement for the yard. Cost is the only reason I know for not having this satisfactory pavement in all yards.—M. E. S.

Root Knot.

What is the matter with my logan berries? When planted a year ago the roots seemed healthy. I send a diseased root. Also please tell me how to rid my soil of wire worms.—C. L. F., Colton.

Prof. Smith of the Southern California Laboratory, answers: "The loganberry root is affected by the disease known as "root knot," a trouble very similar to and possibly

A RELIABLE WATER SUPPLY FOR IRRIGATION



AFTER preparing the ground, sowing the seed and getting the crop well started, your greatest concern is for a reliable water supply. You *must* have water to irrigate in season. Your crop may be ruined in a single day for the want of it.

You have a dependable supply of water in the form of low lying lakes, ponds and reservoirs. The problem is to raise this water so you can apply it to the land.

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They will not only pump water for you in large quantities, but they do it economically. It costs practically nothing to keep an I. H. C. engine in repairs, and the expense of operating it is a very small item compared to the value of the crops you can raise.

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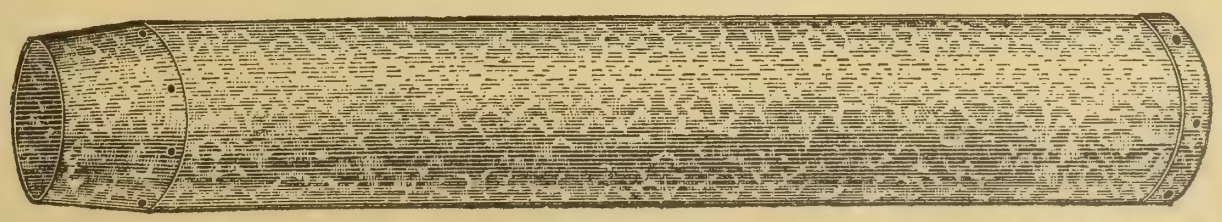

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FOR SALE—BERRY PLANTS, BLACKberry, Dewberries $10.00 per thousand. Mammoth Logan, Phenomenal $1.50 per hundred. H. O. SORKNESS, Hemet, Cal.

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WANTED—TO BUY ALL KINDS OF early vegetables from growers direct. References, Wells Fargo and any bank. MRS. M. VETTER, Santa Maria, Cal.

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FOR SALE—ONE REGISTERED JERsey Bull. Dam has given 6,300 pounds of milk with this, her first calf. Price, $50.00. GEO. W. THOMAS, West Central Ave., Riverside, Cal.

identical with the crown gall of many of our fruit trees. There is no known remedy for this trouble, since it affects the roots under ground where no treatment can be applied." Wire worms can be handled only by rotation of crops. That is planting such crops that they are not sustained in the soil.

Frostless Belt.

Please tell me where the frostless belt of California is and how much country it takes in. Does it ever rain where there is no frost? How does garden truck grow in such a place.—Mrs. F. E., Riverdale.

The frostless belt of California is located in various "spots" all over the state. We have, however, never been in any section of the state which was absolutely frostless. Little coves and protected sections are, to all practical purposes, frostless; but a season like the present one has doubtless shown many claimants for such a title that their claim is untenable. There is no thermal "belt," as the thermal lines vary widely up and down the state, according to altitude, possibilities of drainage away of cold air, protection from cold winds, and influence of the ocean. As a rule, all the mesa land within a short distance of the ocean south of San Francisco is almost frostless. Along the Sierra Nevada foothills from even Shasta county south there are other protected spots where the orange is growing and many other semi-tropical fruits flourish wonderfully. Of course in the extreme south, next to the Mexican border, under ocean influences, it is very probable the records would show a perpetual temperature above freezing point. We doubt, however, if any section of the state can show absolute freedom from the white frost. We do not know as to the rainfall in so-called frostless sections, but it would not be materially different from that of other sections under the same influences but not so favorably situated as to temperature. Garden truck does excellently if supplied with sufficient moisture and if the soil conditions are right.

Live Oak Lumber.

What is value of live oak for hard wood floors as compared with other woods usually used for that purpose? Where can I find market for 100,000 feet?—Subscriber.

As it is possible many other subscribers may have land covered with large size live oak trees we answer this in this column. The Southern California Hardwood Manufacturing Company of 1200 E. 8th St., Los Angeles, informs us that it manufactures a great quantity of California grown live oak into flooring. We do not know the comparative value but we are informed that it makes an exceedingly fine floor. The company mentioned has the mill in Los Angeles for sawing up the logs.

Walnuts for Planting.

Where may I secure good walnuts and almonds for planting, or will any good nut bought at the stores or stands answer? Does the outer shell have to be broken? What is the best time to plant and how?—D. B., Hanford.

The best way to secure desirable seed for planting is to get them from the grower and from trees which are

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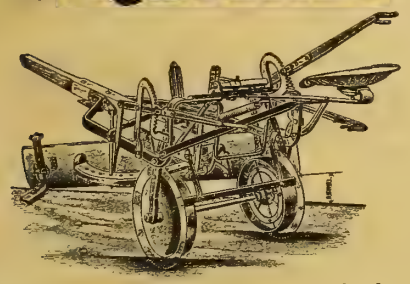

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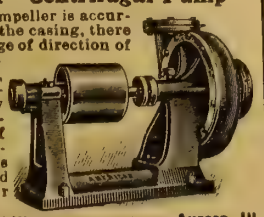

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known to produce nuts of the best quality. Even if for grafted or budded stock, then strong growing variety is desired for the stock. The nut, especially the walnut, from the store has been treated with sulphur fumes or bleaching solution which will not improve the germinating qualities even if not entirely injurious. The nuts may be planted as soon as gathered, many preferring to plant them in sand until they sprout, then re-plant to nursery rows. The shell is not cracked in planting.

Dust Spraying.

Can you recommend a system of dust spraying in lieu of wet spraying for orchard trees? I desire to kill moss and insect pests with Sal Bordeaux, arsenate of lead, etc.,—Prunegrower, Morganhill.

The Cultivator will give next week an excellent article on dust spraying by Mr. A. N. Judd of Watsonville. Mr. Judd, who is an ardent believer and worker with the dust spray, gives us his method of preparing the spray. His position is attacked by many others who believe more in the solution spray. Sure it is the dust is much cheaper and for insects perhaps actually as good. For removing moss we do not think it would be so desirable as the water spray.

Almonds.

Will almonds do well in Tulare county? What is the yield per acre and how old will they be before they get into bearing?—J. A. D., Visalia.

This query has been referred to Mr. Mills, and will be answered by an article dealing with almond culture later.

Blight.

What is the matter with my young bearing apple trees? An enlargement of the twigs is shown by the enclosed specimen where the lower part of the twig seems to stop growing, while the upper part grows larger. The fruit on the tree was small and pale and often withered. There were also many dead twigs on last year's trees. What is the disease and can it be controlled by spraying?—Mrs. C. A. M., Orloff.

Prof. Ralph E. Smith answers: The apple twig is not sufficient to show what may have been the trouble with the trees, but by your correspondent's description it would appear that they may be affected with the blight, the same trouble which affects the pear so seriously. This disease cannot be controlled by spraying, but the trees should be gone over very carefully during the winter and all the affected or dead twigs and limbs cut out. In doing this it is necessary to sterilize the instrument, and the best solution for this purpose is 1-1000 corrosive sublimate. This can readily be obtained at the drug store. The blight is not usually as serious on apples as on pears.

SEEDING ALFALFA.

Having derived a lot of information through your farm paper, which I assure you I appreciate, I am going to tell you of my experience in seeding several pieces of alfalfa this winter. Before proceeding with the alfalfa talk I wish to say that I think it the duty of farmers to write of experiments and their results, to be published in the Cultivator, that others may benefit and in that way help build up the modern way of farming. I am a young farmer, having been an electrician, telegraph operator, stenographer, gasoline engine worker, previous to coming on the farm, and of all the trades which I have learned, I like farming the best, and wish to thank the Cultivator for its suggestions which I have benefited by. In reciprocating I will be glad to answer any question for Cultivator subscribers, on electricity, gasoline engine troubles, etc., free of charge.

Now for the alfalfa experience. I first seeded a piece of land to barley early in the fall between my young walnut trees for pasture during the winter. After pasturing four head of stock on this 1½ acre piece of barley, I decided to plow the piece up and seed to alfalfa, but was advised to harrow the barley land and sow the alfalfa in with the barley, which I did before a rain. Now the barley was up about four inches and as thick as hair on a dog, but the seed all took and today is as thrifty as any plant I ever saw; in fact it is much larger and hardier than alfalfa that I sowed on a different piece a week previous. So it is my opinion that the proper way to seed a piece to alfalfa is to sow barley early in the fall and harrow in alfalfa seed during the winter. If I am not misfaken the Easterner sows his timothy and clover on the wheat in the spring and gets a good stand. I believe the secret of this argument lies in the shading of the alfalfa and the damp and moist condition of the barley which feeds the alfalfa plant and keeps it growing. Am I right?—Ernest A. Beard, Anaheim.

In a wet season, yes. But in a dry season you'd better watch out and be prepared for irrigation. Be sure and do not seed so close to the trees but that you can give them clean culture, and then in summer do not allow the trees to suffer for want of water as one is apt to do with inter-culture crops. If that is done the loss to the trees will more than outweigh the feed advantage.

A SWEDE TOPSY.

A little Swede boy presented himself before the schoolma'am, who asked his name.

"Yonny Olsen," he replied.

"How old are you?" asked she.

"Ay not know how old Ay bane."

"Well, when were you born?" continued the teacher, who nearly fainted at the reply:

"Ay not born at all. Ay got stepmutter."—Kansas City Journal.

THE DEADLY PARALLEL.

A dog ran off with a doctor's book
And the doctor raised a shout,
But the dog went on, as the doctors do,
And took its appendix out.
—Henry W. Roby.

THE DOCTOR'S SOLILOQUY.

The dressmaker has some wicked ways,
But calmly I endure them,
She's always giving the ladies fits,
While I sit around and cure them.
—Henry W. Roby.

THE MODEL FARM.

"Does your son know much about farming?"

"I should say he does," answered Farmer Corntossel. "He says he reckons he'll go to town an' make about a million dollars, an 'then cum back an' run this farm proper."—Washington Star.

WHICH MANURE SPREADER.

Which spreader shall you buy? You are agreed that you ought to have a spreader, but which shall it be? Most spreaders are alike in many particulars. But there is this great essential difference between the old line Success Spreader, made at Syracuse, N.Y., which has taken the lead all the way, and other spreaders. The Success Spreader is roller-bearing. Other spreaders are not. The advantage which the Success Spreader thus enjoys is plainly manifest. The less strain, the less breakage. If the operating parts of the machine turn hard, the wheels which drive them, must turn hard. It is the original spreader and it has been over 31 years working them out. It has always been in the lead in adopting approved devices. We known of no point in which the Success Spreader lags behind others in what makes for right operating and proper spreading of manure.

Armour & Co., whose general office address is Union Stock-yards, Chicago, Ill., are sending out a farmers' almanac this year that will be sent to any reader of this paper on receipt of a request for the same and a 2-cent stamp for postage. Being a farm almanac the bulk is reserved for articles of interest to every farmer, such as a scientific treatment on the growing of wheat, a very interesting and comprehensive article on the cultivation of tobacco; the care of live-stock, the making of a fruit crop; the importance of raising a higher grade of meat animals; and some very valuable suggestions on the importance of the use of high grade commercial fertilizer, as well as other valuable articles and hints for farmers in general. It contains a generous sprinkling of art, wit and humor, fashion hints for the women as well as other items of interest and information usually found in an almanac.

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Your name and address will get it.

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Carnations, Roses, Etc.

Strawberries, Raspberries, Blackberries, Loganberries, Dewberries, Himalaya Blackberries, Phenomenals, Crimson Winter Rhubarb. Everything for the flower and kitchen garden. Write for catalogue. Address

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Grafted Walnuts a Specialty

15,000 Trees, Grafted and Seedlings

Grafted trees grafted on Northern black and California soft-shell roots. Seedlings grown from selected nuts from grafted trees selected by myself. Place your orders early to avoid the rush and get the best trees. Price 15c and up. Took first premium on nuts and trees this year. Some lemon trees still unsold. Fine lot of Kadota Fig trees.

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CHAS H. HAMBURG **Whittier, Cal.**
Home Phone 288

Crimson Winter RHUBARB

$1.50 a dozen, $6.00 per 100, $40.00 per 1000. Now is a good time to plant. Pedigreed Stock. Fruit Trees and Berry Plants of all kinds.

J. B. Wagner, Pasadena, Cal., 'Barb Specialist

Healdsburg will make a display at the Cloverdale Citrus Fair.

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TRIPLE ACTION IS THE ONLY REAL SAFETY

You don't need to worry about it. You don't need to wonder whether the "safety mechanism" is going to work or not. The

HOPKINS & ALLEN TRIPLE ACTION

Safety Police Revolver

(Trade-Mark) Nickled Finish $9.50

Insures Absolute Safety

The third or safety action is so plainly a safety action that a blind man can feel it and know it when he feels. It isn't an-added-on mechanism. It's the action of the revolver that secures safety, positive, perfect safety all the time.

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This is the best revolver proposition on the market. A revolver guaranteed to the fullest extent. Sent, charges prepaid, to any address, upon receipt of price. If there's a dealer in your locality, ask him to show it to you.

The Army Grip gives a strong, firm hand hold. This feature appeals particularly to the revolver enthusiast. 32 and 38 cal., 4-inch barrel. Blued Finish, $10.00.

Our 1909 Gun Guide Sent Free.

This catalog gives many bargains in high-grade, low-price fire-arms, and much information regarding the selection, care and use of arms. Send for it now.

THE HOPKINS & ALLEN ARMS CO.

121 Franklin St. NORWICH, CONN.

Angle Lamp

The Light That Never Fails

Thousands in use all over the country. A good light is the greatest pleasure and the first necessity of every home.

The only lamp on the market that is sold under an absolute guarantee.

Remember, the light from Kerosene is the light science has agreed upon as being the purest and best, because it is soft and mellow and restful to theeyes.

Here are a few of The Angle Lamp Merits:

NO UNDER SHADOW. NO SMOKE, NO ODOR, LITTLE HEAT.

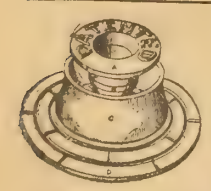
GREAT ECONOMY—COST LESS TO BURN than an ordinary lamp. As easy to operate as gas or electricity, and better than either. ABSOLUTELY SAFE under all conditions. Lighted and extinguished like gas. Burned HIGH or LOW like GAS without a trace of odor. And a BRILLIANT, soft, steady, shadowless light—but this you will have to see to appreciate.

The lamp as shown in cut burns 22 hours on 3 quarts of oil.

Send for Illustrated Catalogue with Prices

Boesch Lamp Co., 1135 Mission St., San Francisco

Established 1869 Incorporated 189



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The Star only Oil-Gas Burner is a simple, safe and economical device for taking the place of wood and coal in all cook stoves, ranges, heaters or furnaces, without more soot or smoke than from a wood fire. The only Oil-Gas Burner that will not clog.

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$1.50 a Dozen, $6.00 per 100, $40.00 per 1000

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Fruit Trees and Berry Plants of All Kinds.

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Nobody can know everything. To become expert means to specialize. We are specialists in producing the best flower and vegetable seeds. In 52 years we have become experts. Sow Ferry's Seeds and reap the results of our care. For sale everywhere. Read our 1909 catalogue and profit by our experience. Sent free on request. Address

D. M. FERRY & CO., DETROIT, MICH.

Household Department

LITTLE THINGS.

A good-bye kiss is a little thing;
With your hand on the door to go,
But it takes the venom out of the sting
Of a thoughtless word or a cruel fling
That you made an hour ago.

A kiss of greeting is sweet and rare
After the toil of the day;
And it smoothes the furrows plowed by care,
The lines on the forehead you once called fair
In the years that have flown away.

'Tis a little thing to say, "You are kind;
I love you, my dear," each night;
But it sends a thrill thro' the heart, I find—
For Love is tender and Love is blind—
As we climb life's rugged height.

We starve each other for love's caress;
We take, but we do not give;
It seems so easy some soul to bless,
But we dole the love grudgingly, less and less,
Till 'tis bitter and hard to live.

—Andrew Long.

About the House

A HOUSEWIFE of many years' experience writes that "monotony" is the enemy that the woman at the head of a household must fight continually. It is so much easier, for a time, to go on in the same old rut, that before we know it we are tired of everything, and the work that should be a pleasure has become an almost hopeless task. Take for instance the cooking—the same meat, potatoes and bread, served in the same way every day. Just a little variety in the cooking and serving and you will imagine you have something new.

Most farmers' wives know how to make cottage cheese, Dutch cheese or schmierkase,—but do they know that it makes a delicious salad, pretty enough for a "company" salad? Form the cheese into balls about an inch in diameter, and press into the sides the halves of an English walnut or an olive or a thin slice of cucumber pickle. Lay on lettuce leaves or shredded cabbage, or celery cut in dice, and serve with mayonaise dressing.

For those who are so unfortunate as not to like olive oil for salads I will give the formula for a mayonaise that we use, for we do not care for the oil.

Put one half pint of milk in double boiler, cream one third cup of butter and two level tablespoons flour; stir into the boiling milk and stir until it thickens; then let it stand for a few minutes. Beat three eggs until frothy. If eggs are scarce I use only one. Add to them two level tablespoons of sugar, one level tablespoon of salt, two level teaspoons of mustard, and a pinch of cayenne pepper. Mix thoroughly and then add one half cup of vinegar. Stir this into the hot cream sauce and cook until smooth. This dressing will keep for ten days or two weeks.

While talking of salads I want to tell you of an orange salad that I like, and other women like, but which I have never known a man to eat; he refuses it more or less politely. Separate the oranges into sections, or cut them into small pieces, and cover with a dressing of lemon juice, salt and pepper. Heap on lettuce leaves. One day I had no lettuce, so I went out to the grove and got some orange leaves and blossoms and used them instead of lettuce. The salad was an artistic one, with its green and white and gold.

At this season when canned tomatoes are so generally used, new ways of cooking and serving may be welcomed.

For "scalloped" tomatoes, butter a baking pan and fill with alternate layers of tomatoes and bread or cracker crumbs, seasoned with bits of butter, pepper and salt, with well-buttered crumbs for the top layer. Bake until nicely browned on top and serve in the baking dish. For plain stewed tomatoes, season with butter, pepper, and salt, and sugar if you wish, and when hot pour over small pieces of stale bread or broken crackers.

A cream of tomato soup, if properly made, is delicious. To one pint of tomatoes add one quart of boiling water, a slice of onion, a small piece of red pepper, three or four whole cloves, a bay leaf, a small piece of stick cinnamon, one teaspoon of sugar, and one half a teaspoon of salt. Cook for twenty minutes, then strain and keep hot while you heat a pint of milk and slightly thicken it with one tablespoonful of flour and two of butter rubbed together. When the butter and flour are smoothly blended with the milk, add a level teaspoon of soda to the hot tomato liquor and quickly pour in the thickened milk. Let boil up at once and serve immediately with crackers or croutons. A tablespoonful of chopped celery may be added just before serving.

A tomato stew that pleases most people is made by cooking one pint of tomatoes until well done. Season with pepper, salt and a little sugar. Then add a tablespoon of butter, and a tablespoon of flour stirred into a little cream. Let cook a minute or two and pour over bits of buttered bread and serve at once.—Elbepe.

* * *

Preserving Citron.

Will some one "About the House" please tell me if the citron we grow here on trees is the citron of commerce and if so what is the process for preparing it for household uses? —E. S., Fresno.

It is said to be the same. To prepare it for use, the fruit, before assuming a yellow color and also when bright yellow, is picked and placed in vessels filled with brine, and left for at least a month. The brine is renewed several times, and the fruit allowed to remain in it until required for use, often for a period of four or five months. When the citrons are to be candied they are taken from the brine and boiled in fresh water to soften them. They are then cut into halves, the seed and pulp removed, and the fruit is again immersed in cold water, soon becoming of a greenish color. After this, it is placed in earthen jars, covered with hot syrup, and allowed to stand about three weeks. During this time the strength of the syrup is gradually increased. The fruit is then put into kettles with crystallized sugar dissolved in a small quantity of water, and cooked; then allowed to cool, and boiled again until it will take up no more sugar. It is then dried and packed in wooden boxes.

THE SANITARY HOME.

In a real home every member of the family should feel some responsibility, if it is to attain the best moral and physical development. Health is man's birthright, but we often find physical weakness that might have been prevented with proper knowledge.

The walls and floors should be of material that may be easily cleaned. Painted walls may be cleaned without injury. There is a new sanitary wall covering which is particularly good for kitchens and bath-rooms. It is called "Sanitas," and is really an oil-cloth which is made with artistic patterns and coloring. It may be washed like the ordinary oil-cloth. Do not use carpets on the floor. A painted floor with a rug is far better and makes much less work for the housekeeper. In planning a house, be sure that the rooms are arranged so that they may be well ventilated. Have windows that may be raised from the bottom and lowered from the top. There should be a window in every clothes-closet, because clothes should be aired; but very often we find this closet dark, and it is almost impossible to see where anything is placed. There should also be a window in the hall, so that there will be no dark corners to cover up the dust.

In planning a house, many people

CALIFORNIA
Genuine Sardines

Caught in Pacific Waters, along the Southern Coast of California. Noted for their choice quality. Very Fat.

Put Up Under These Brands Only

Brands	Styles
GOLDFISH	RAVIGOTE
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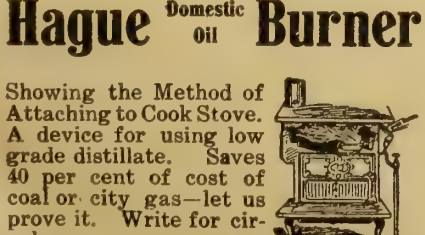
MISSION	

SUNSET, Broiled Mackerel Style.

FOR SALE EVERYWHERE California Sardines THE GENUINE SARDINE

Cannery San Pedro



Only Cannery of Genuine Sardines in America and the only one that is operated 12 months in the year in the same line of business.

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The Model Acetylene Gas Generator

Built **especially** for generating the **best** known gas for **cooking** and **illuminating.**

Considered to be the best on the market by those who know.

Permitted by the National Board of Fire Underwriters.

Sold under a positive guarantee.

Satisfaction also guaranteed or money refunded.

Send for an illustrated catalogue and learn why it is the best.

An excellent opening for good salesmen.

J. M. Gillis
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Hague Domestic Oil Burner

Showing the Method of Attaching to Cook Stove. A device for using low grade distillate. Saves 40 per cent of cost of coal or city gas—let us prove it. Write for circular.

Hague Domestic Oil Burner Co.
214 Winston St., Los Angeles, Cal.

Edison Phonographs, Victors, Zonophones
Records and Supplies, $10.00 orders delivered at your nearest railroad station upon receipt of full retail price. Write for catalog.
Peter Bacigalupi & Sons, 941 Market St. San Francisco

pay very little attention to the back stairway. The consequence is that it is almost impossible to carry up a trunk or any large piece of furniture. Plan to have wide stairways with steps that are broad and low.—Mary F. Rausch, Colorado Agricultural College.

WHY NOT?

Once upon a time the house was really a home and all the industries were carried on under its roof. Many a business man returns today with his grandchildren to the old homestead in New England. He shows the children the spinning-wheel, the plain solid furniture, the rag carpets, the huge kitchen, the old trees and shrubs. The house meant the family life and a fine hospitality. Everything was collected and saved here and the house that was built for a young couple was used by their children for many successive generations.

Today the home life is in most cases quite different. The family live here and there and comparatively few people have lived in the same house for twenty-five years. Consequently there is less home feeling. Many young people today start out in a flat or rented house, and make shift to avoid work and responsibility. If they start out humbly, they plan from the first to move as soon as they can "do better," forgetting that they could not possibly do better than slowly and contentedly to build a real home from the foundation.

Women should appreciate the little house and the value of doing their own housework. Most of us are doing our work, so why not enjoy doing it, and make a joy and a sacrament of our home building instead of going at it in a grudging spirit.—C. S. M.

THE WINDOWS.

Window arrangements may make or mar the beauty of a room. They should, therefore, be planned with the utmost care. Not only should the shape, size and location of the windows be taken into consideration, but every detail of the room as well.

The light that comes in through the window is one of the important items. A window having a cold north light or one well shaded by trees may be curtained in light, even bright colors, though pure white muslins are not effective.

A window on the light, sunny side of the house, on the contrary, is more pleasing done in quieter tones, with the net or muslin sash draperies just off white.

The sun shining through a plain white curtain reflects a harsh, glaring light that is most trying to the eyes, besides being inartistic and unbeautiful. The most pleasing light in a room is one that is cheerful and sunny and yet subdued and restful. This very desirable quality of light is gained by the choice of color in the curtains.

In a sunny room a white curtain may be used with good effect, provided it is combined with a figured or flowered chintz or similar material, for this breaks up the all-white glare.

The color scheme is all important. The curtains must harmonize with the room, both in line and color, to be effective. One rule that is invariable in all rooms is that if there is a figured paper on the walls then the hangings should be plain, for if both are figured the effect is confusing.

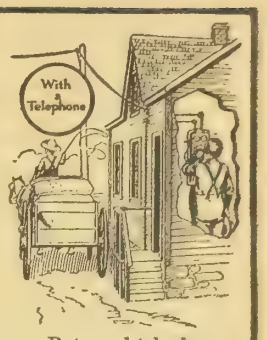
A fancy curtain material, on the other hand, is best with plain walls, for if both are plain the result is flat and uninteresting.

A dainty arrangement for a bedroom window is a shade of flower chintz and a sash curtain of plain white muslin, with an insertion of lace.

APPLE PIE AND MELTED CHEESE

Bake a pie crust in the bottom and on the side of a pie tin; fill with apple quarters stewed till tender and return to the oven, putting a little cinnamon, sugar and bits of butter over. When it is baked enough to set, draw it out and cover with a thick layer of grated cheese. Return to the fire and let the cheese melt and brown. Serve immediately.—Harper's Bazar.

Why Drive to Market Yourself



when you can't afford to leave your work on the farm? With a rural telephone you can talk to town at any time, making it possible for a boy to go and attend to the details leaving your time free for other work.

The telephone also enables you to take advantage of fluctuations in the market and sell your products at best prices. But good telephone service depends first upon the quality of the apparatus installed and without good transmission qualities a telephone system is worthless.

Western Electric Rural Telephones

have highest efficiency and reliability with lowest maintenance cost. Our apparatus has high transmission qualities over long as well as short lines and is used by the leading telephone companies of this country.

We have brought the rural telephone within the reach of every farmer, and with our Free Bulletins before him a boy can install and operate the system. Our telephones are guaranteed.

Cut out this advertisement, write your name and address on the margin and mail it to-day so that the Free Bulletins, which describe the entire plan in detail, may be sent you immediately.

WESTERN ELECTRIC COMPANY

Eastern	Central		Western	Pacific
New York	Chicago	Manufacturers and Suppliers of all Apparatus and Equipment used in the Construction, Operation and Maintenance of Telephone Plants.	Saint Louis	San Francisco
Philadelphia	Indianapolis		Kansas City	Los Angeles
Boston	Cincinnati		Denver	Seattle
Pittsburg	Minneapolis		Dallas	Salt Lake City
Atlanta			Omaha	

Northern Electric and Manufacturing Co., Ltd., Montreal and Winnipeg

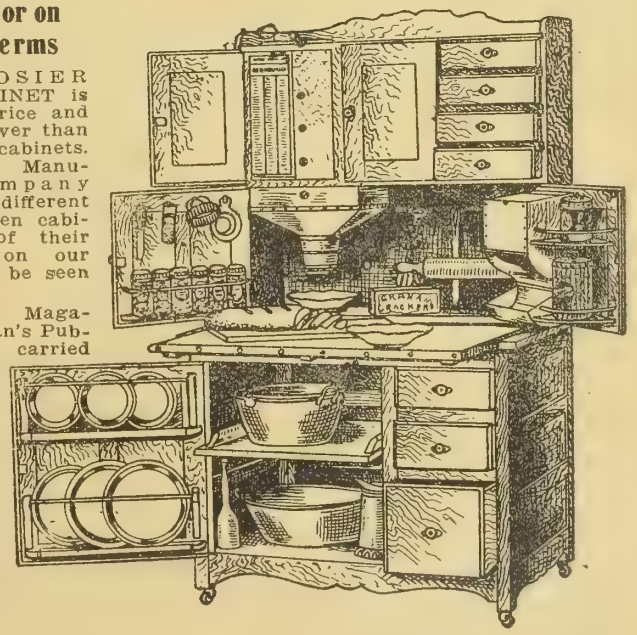
71 **Address Our Nearest House**

Hoosier Kitchen Cabinets Save Money

Sold for Cash or on Attractive Terms

The HOOSIER KITCHEN CABINET is sold at ONE price and that price is lower than other similar cabinets. The HOOSIER Manufacturing Company makes several different styles of Kitchen cabinets and all of their patterns are on our floors and may be seen at any time.

The National Magazines and Woman's Publications have carried full and double page announcements of the HOOSIER CABINET. These have fully described and emphasized every detail. We are therefore assuming that almost every woman is thoroughly familiar with the HOOSIER CABINET and already fully appreciates its value in the home.



Let us Put one of These in Your Kitchen

HOOSIER CABINETS have a handy place for everything, are provided with flour bin with a sifting attachment, sugar bin, spice cabinet, tea and coffee canister, want lists, aluminum extension tops, plate racks, sliding shelves, breadboards, cupboards, drawers, etc. There is always ample room in this cabinet to accommodate all food supplies and cooking utensils.

A HOOSIER KITCHEN CABINET will effect a saving in materials used and labor expended sufficient to eventually pay its full cost.

The HOOSIER KITCHEN CABINET is appropriate in every home—cottage or palace. We make attractive terms to suit the purchaser.

Write for Catalogue and full particulars

We are Agents in this territory.

Pease Bros. Furniture Co.

HILL STREET BETWEEN 6TH & 7TH
Los Angeles, California

When writing advertisers, mention Cultivator.

The Produce Markets

Los Angeles Markets

LOS ANGELES, Feb. 24, 1909.

Butter.

Butter shows a 2½ cent decline on both of the better grades. Local stock is coming in more freely.

Produce Exchange wholesale quotations are as follows with actual selling price to the trade 2½c advance on Extras.

Creamery ex per roll	72½
Firsts	67½
Cooking	23@25
"Butterine"	16@20

Cheese.

Southern California Anchor	15½
Northern fresh	16½@17
Longhorn	19
Eastern singles	17
Cheddars	17
Swiss	21@22
Imported Swiss	30
Daisy	17@18
Limburger	21@22
Oregon triplets	16
Twin	19

Eggs and Poultry.

The bears could not hold prices down to the point to which they forced it last week and a slight advance of one to two cents was made during the week.

Eggs local candled	29
Eggs case count buying price	25@26

Dealers pay for live stock.

Hens per pound	15@16
Young roosters per pound	20
Fryers	22
Broilers per lb	26
Roasters	18
Old roosters	7
Turkeys	20@22
Geese	15
Ducks	16
Squabs	1.25@1.75

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs from 175 to 200 pounds	6½@6¾
Prime steers	4¾@5
Heifers	4@4½
Calves per pound	5
Sheep ewes per head	3.75@4.00
Bambs per head	3.00@3.75
Wethers	4.50@5.00

Potatoes.

Wholesale prices are:

Sweets per ctl	2.00
New per box	2.00
Highland fancy	1.85
Highland choice	1.70
Coast	2.00@2.15
Salinas	2.10
Idaho's	1.70@1.85
Oregon Early Rose	2.50
Colorado's	1.85
Sweets choice	1.00

Onions.

Wholesale quotations:

Australian Browns	2.50
Danvers	2.75@3.00
Silverskins	2.50
Oregons	2.75@3.00
Garlic	12

Vegetables.

Artichokes per doz northern	1.00
Asparagus per lb	20@22
Beets per doz	35@40
Bell peppers per lb	20@25
Beans string	15@16
Beans Limas per lb	8@10
Brussels sprouts per lb	10@11
Cabbage Red per lb	3
Cabbage sack	1.00@1.40
Celery per crate	2.85@3.00
Chili per lb	18
Chili dried	10@12
Chicory per doz	50
Cucumbers per box hot house	75@2.25
Cauliflowers per crate	1.50
Carrots per doz	35@40
Egg plant per lb	8
Green onions per doz bunches	25
Horseradish per lb	12
Lettuce per crate	1.00@1.25
Lettuce choice	75
Mushrooms per lb	35
Peas sugar per lb	3@8
Parsley doz	20
Parsnips	35@40
Rutabaga per doz	40
Rhubarb	80@90
Rhubarb Northern per lb	8
Radishes per doz	15@20
Salsify	40
Summer squash per box	1.00@1.25
Spinach per doz	20
Turnips doz bunches	25@40
Tomatoes crate	2.00@2.50

Citrus Fruits.

Navels fy	2.00@2.50
Navels ch	1.75
Tangerines	1.45@1.60
Grapefruit seedless	3.25@3.75
Grapefruit seedlings	2.25
Lemons fy	2.25
Lemons choice	1.75
Limes per basket	50

Fresh Fruits.

Wholesale prices on the market are:

Baldwins 4 tier	1.15
Bellflowers	1.15
Newton Pippins	1.25
Red Pearmains	1.25
Spitzenberg	2.50
Grapes Red Emperors	1.50
Guavas per lb	6
Cornichons	1.25
Guavas	6
Pears lug obx	1.25
Persimmons per box	2.25
Pomegranates per box	1.75

Dried Fruits.

Wholesale prices are:

Apricots	9½
Exap. apples fy per lb	6½@7½
Figs loose white	5
Figs blk	5
Peaches in boxes	7½
Peaches sacks	6
Pears	9
Plums, pitted	10
Nectarines	9@10
Prunes 30's to 40's boxed	8
Prunes 40's to 50's	7½
Prunes 50's to 60's	7

Beans Dried.

Wholesale prices are:

Limas per ctl	4.75
Pink No. 1	3.20@3.25
Lady Washington	4.75
Small white	5.50
Black eyes	3.50
Garvanzas	4.50
Lentils	8.00
Bayou	3.50

Nuts.

Almonds IXL per lb	11
Pecans polished	12@17
Peanuts Virginia	6½
Peanuts California	5
Walnuts No 1	12@12½
Chestnuts	8@8½

Honey.

Wholesale quotations:

Extracted water white	8
Extracted Light Amber	7
Comb W W	15
Comb white	14
Beeswax	30

Hay.

Prices paid to producers f. o. b. Los Angeles are as follows:

Barley No 1	21.00@23.00
Barley No 2	18.00@20.00
Alfalfa northern per ton	14.00@15.00
Alfalfa local	15.00@18.00
Tame Oat No 1	22.00@24.00
Wheat No 1	18.00@21.00
Wheat No 2	18.00@20.00

Grains.

Wholesale selling price f. o. b., Los Angeles.

Wheat new per ctl	2.00
Kaffir corn	1.80
Corn Eastern sacked	1.75
White oats	1.90
Seed Rye	1.80

Feed Stuff.

Wholesale selling price f. o. b., Los Angeles:

Cracked corn	1.80
Shorts	1.80
Bran	1.65
Oil cake meal	2.50
Feed meal	1.85
Rolled barley	1.55

WHY BOYS LEAVE HOME.

Do we thoroughly appreciate our boys? Of course, it would be hard to find a father who did not have affection for his son, but does the average father, the average father on the farm particularly, do the best he can for his youngsters? No doubt, he thinks he does; but is his method the best? Put yourself in your boy's place. Remember when you were a boy and also remember that times have changed, wages have advanced and that you pay your farm help more than the prevailing rate on your father's farm.

Pay your boy a wage for his services. Better yet, make him your partner in a small way telling him that if he makes good you will increase the interest. Buy him a U. S. Cream Separator and fix his hours of work (when not at school) from say, 7 a.m. to 12. Let him have the afternoon to himself to work for outsiders to earn some extra ready cash.

Charge the cost of the U. S. Separator to his account and show him how to pay for it gradually to you and the interests on the money from the profits he makes in separating the neighbors' milk for them. Then give him a calf to raise all his own, and later some good milch cows. He can use the U. S. Separator to still better purpose then and start butter making on his own account. To run a U. S. Separator will not tax a boy's strength, it is so free from friction and weight. U. S. Separators are so simple that a child can run one.

As a first step toward keeping your boy on the farm, where he will do himself, his parents, the farm and his country the most good, write the Vermont Farm Machine Co., Bellows Falls, Vt., for Catalog No. 20.

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

San Francisco Markets

SAN FRANCISCO, Feb. 22, 1909.

Butter.

Buter is exactly as last week with supplies meeting demand.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras per lb	36
California firsts	33
California seconds	30½
Ladles extra	23½
Storage Cal ex	32½
Eastern extras	31½

Cheese.

California flats fy	15
Firsts	14
Cal Young American fy	16
Firsts	15
Seconds	11½
Young American Oregon fy	16½
Eastern N. Y. Cheddars fy	17½
Oregon flat fy	14½

Eggs and Poultry.

Eggs have declined heavily during the week, being quoted 8½ cents under last quotations.

Official quotations of the S. F. Wholesale Dairy & Produce Ex. are:

Fresh ranch extras	21½
Eggs first per doz	21
Eggs second	20
Eggs thirds	19
Pullets selected	19
Hens per doz	5.00@6.50
Hens extra	7.00@9.00
Young roosters	7.00@7.50
Old roosters	4.00@5.00
Fryers per doz	6.50@7.00
Broilers per doz	4.50@6.50
Geese per pair	2.00@3.00
Goslings per pair	1.75@2.00
Ducks young	5.00@9.00
Live Turkeys	19@21
Dressed Turkeys	20@26
Pigeons young	2.00@3.00

Live Stock.

San Francisco prices gross weight:

Steers No 1	5
Do second quality	4½
No 1 cow and heifers	4
Second quality	3½
Hogs 100 to 130	6
Hogs 130 to 250	6⅜@6½
Rough heavy	4½@5
Calves per lb	4@5
Lambs spring	6½
Wethers No 1	5¾@6
Ewes No 1	5¼@5½

Potatoes.

Wholesale market quotations:

River white fy sacks	1.25@1.60
Earley Rose	1.75@2.00
Salinas Burbanks	1.65@1.85
Sweets per crate	1.00@1.50
Lompoc Burbanks	2.00
Early Rose seed	1.25@1.30
Oregons	1.65@1.75

Vegetables.

Wholesale quotations:

Asparagus per lb	8@14
Bell peppers per lb	25
Brussels sprouts per lb	3@5
Celery per ½ crate	1.00@1.50
Cucumbers per doz	75@1.25
Chili peppers per lb	25
Egg plant per lb	25@30
Green peas per sk	75@1.50
Mushrooms per lb	12½@25
Marrowfat squash per ton	20.00@22.50
Squash per box Southern	1.00@1.50
Onions green per box	50@75
Okra per box	1.25@1.50
Rhubarb per lb for bay	6@8
Rhubarb, Southern per box	1.00@1.25
Tomatoes box Los Angeles	1.25@1.50
String beans	10@12½
Wax Beans	10@12½
Garlic new	8@9

Onions.

Onions, Oregons	1.75@2.00

Citrus Fruits.

Navels fy	1.50@2.00
Tangerines per crate	75@1.50
Mandarins	75@1.00
Grapefruit seedless	2.50@3.50
Grapefruit seedlings	75@1.25
Lemons ch	1.25
Lemons fy	2.50.3.00
Limes	6.50@7.00

Fresh Fruits.

Bellflowers	75@1.00
Bellflowers No 2	50@75
Spitzenberg	1.25@2.00
Newton Pippins	1.25@1.40
Ben Davis	1.25@1.50
Winter Nellis	1.00@1.50

Dried Fruits.

Prunes 4-size basis	2½@3
Santa Clara	3¼@3¾

½c premium for larger sizes

Apricots per lb; Choice 8½; fancy 7@10.

Peaches—Choice	4; fancy 6½
Apples, evap	5@6½
Pears	4@8
Figs	2½@4
Nectarines	5@5½

RAISINS—1908 crop, f. o. b.: Clusters and Layers, 20-lb bxs—Imperial Clusters, 6-crown, $2; Dehesa Clusters, 5-crown, $1.75; Fancy Clusters, 4-crown, $1.40; London Layers, 3-crown, $1.15; do, 2-crown, $1.05. Seeded, 25-lb bxs—Fancy bulk per lb, 5¼c; Choice bulk, 5c. Loose Muscatels, 50-lb bxs—Standard, 4-crown, 4c; do, 3-crown, 3¼c; do, 2-crown, 2¾c; Seedless, 3½c. Seedless Sultanas—Unbleached, 4¼c. Thompson Seedless—Unbleached, 4¾c. Dried Grapes, 2½c.

Nuts.

Walnuts S S No 1 new crop	9½
Walnuts No 2	6
No 1 Standard	8½
No 2 Standard	4½@5
Almonds Nonp	11½
Almonds IXL	10½@11
Ne Plus Ultra	9½
Drakes	8½@9
Chestnuts	9½@14
Peanuts Cal	5½@6

Beans Dried.

Limas	3.80@3.90
Pink	2.40@2.60
Small white	5.00@5.25
Large white	3.80@4.15
Black eyes	2.80@3.00
Red Kidneys	3.50@3.60
Garvanzas	3.00@4.00
Bayo	3.00@3.30
Horse beans	2.00

Hops.

Hops 1908 crop	6@10

Honey.

White comb	11@13
Light Amber	9@10
Exracted W W	7@8
Extracted light amber	5½@6
Beeswax No 1 per lb	28@30
Beeswax No 2 per lb	23@25

Hay.

Somers & Co. say: The market for choice grades of hay remains about the same although the range of prices seems to be getting more narrow, i. e., the medium and poorer grades of hay advancing indicating a heavy drain on this class of stock which of course is used more extensively when hay is scarce and prices high.

Country shipments although being somewhat hampered by weather conditions are moving very heavily and many inquiries are coming in not only from the smaller towns but the larger cities of the state, showing that they are approaching close to the limit of their source of supplies.

Alfalfa stays up remarkably well considering the grass outlook but from present indications it would seem as though stocks of this hay are not more than enough to supply dairymen and other users of alfalfa who never figure on green feed.

Choice wheat hay	21.00@23.50
Good wheat hay	19.00@21.00
Other grades same	17.00@18.00
Wheat and oat	17.00@21.50
Tame oat	17.00@21.50
Wild oat	16.50@19.50
Stock hay	11.00@14.00
Alfalfa	16.00@19.00
Straw per bale	50@80

Grains.

Wheat No 1	1.82½@1.87½
Barley	1.40@1.42½
Corn large yellow	1.52½@1.55
Oats white	1.87½@1.95
Oats gray	1.87½
Rye new crop	1.80@1.85
Corn Egyptain	1.60@1.65
Alfalfa seed, Cal	17@18
Alfalfa seed, Utah	18@19

Feed Stuff.

Bran per ton	29.00@30.00
Feed cornmeal per ton	39.50@40.50
Cracked corn per ton	40.00@41.00
Rolled barley per ton	28.50@30.00
Oil cake meal per ton	38.50@40.00
Cocoanut cake per ton	26.00@27.00
Middlings	33.50@36.00
Shorts	32.50@33.50

Citrus Market

LOS ANGELES, February 24, 1909.

The campaign of advertising which was carried on all over the Middle West has plainly stimulated the demand for oranges in a way which is most gratifying to those who have made this experiment. As to a increase in prices, there is no great difference though it is probable slightly stronger prices prevail than would have been the case if ths effort had not been made. Oranges have been selling so as to demand in the neighborhood of $1.40 to $1.60 per box f.o.b. California points. The auction markets also as will be seen following have been very satisfactory.

This condition in the face of the fact that much fruit was injured by the extremely cold weather of December which surely had a depressing effect was very gratifying. The injured fruit is all going forward under no name brands so that the established brands are not being injured.

The new trade mark "Sunkist", established by the Exchange is of course put on only the higher grade fruit so that in advertising and urging the purchasing of Sunkist fruits the Exchange insists that its members make good to the extent that the patented trade-

Cream Separators, all sizes, all prices. O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

mark shall cover only the very finest fruits.

Lemons are selling as well or even better than could be expected with the great number of foreigns that are coming in. While the imported fruit is not in the market very far west of Atlantic sea board points it has an influence on the market conditions to the Rocky Mountains. That is, it is selling at low prices in New York and other Eastern places which has a moral influence on the trade of the West by which they refuse to pay as good prices as the shippers desire. However, returns are not discouraging and fruit is continually going forward.

Shipments.

The total shipments to date since November 1 are: Oranges 6,768 cars; Lemons 1,377, or a total of 8,165 cars.

NEW YORK, Feb. 23.—

NAVELS— Average

Bronco ex fy American Ft Co 2.75
Aurora fy orch run E Peycke Co ..2.55
Deal standard do 2.45
Pansy ex fy Colton Org Go Assn 2.75
A One fy orch run E Peycke Co 2.65
Deal standard do 2.45
Golden Flower ex fy Redl GO A 2.85
Gold Buckle imp R-H Ft Ex 3.20
Lochinvar imp do 3.00
Blue Globe Riverside Ft Ex.....2.90
Red Globe do 2.80
California Orange do 2.75
Harmony imp San Antonio Ft Ex 2.95
Pet do 2.70
Iris Duarte-Monrovia Ft Ex 3.00
Royal Knight R-H Ft Ex 2.85
Queen Bee Queen Colony Ft Ex ..2.80
Royal do 2.75
Golden Orange AH Ft Ex 2.85
Red Shield A-C-G Ft Ex 2.85
Green Crown do 2.60
Gold Buckle R-H Ft Ex 3.10
Lochinvar do 3.00
Arab San Antonio Ft Ex 2.70
Gold Leaf Bryn Mawr Orange Co 2.75
Goddess San Antonio Ft Ex 2.70
Butterfly Covina Ft Ex 2.70
Arab Semi-Tropic Ft Ex 2.70
Whittier do 2.45
Signal ex fy Stewaft Ft Co 3.00
Solano orch run do 2.75

LEMONS—

Homer, Queen Colony Ft Ex 2.60
Red Shield A-C-G Ft Ex 2.15
Loma Vista A P Nelson 2.00
Independent choice Growers Ft Ex 2.25
Camel Queen Colony Ft Ex 2.40
Rook ex ch Ely Gilmore 2.20
Independent fancy Growers Ft Ex 2.70

NEW YORK, Feb. 19.—Seventeen cars of navels, one mixed car and two cars of lemons were sold. The market is very strong, and higher in spots on navels and steady on lemons. The weather is clear and favorable.

NAVELS— Average

May 2.55
Deal E. Peycke Co.....2.35
Champion A C Denman 2.90
Mt Harrison Sewall 3.05
Old Mission Chapman 3.15
Orchard National Orange Co 3.05
Standard do 2.50
Signet Red OG Cash A 3.25
Colonel OG Cash Assn 2.85
Signet Red OG Cash Assn 3.00
Colonel OG Cash Assn 2.60
A One E Peycke Co 2.45
Deal do 2.75

LEMONS—

Naralima 2.30
Circus Sparr Ft Co 2.20
Senorita Bos & Co Riv Ft Co 1.85
Homer QC Ft Ex 2.55

BLOODS—

Iris halves Duarte Monrovia Ft E 1.70

CLEVELAND, Feb. 19.—It is raining. Market is unchanged; six cars sold, one car on track; one car Florida oranges sold, $2.45@2.85, mostly $2.75. Market is higher on Floridas.

NAVELS— Average

Uncle Sam Riv Ft Ex Pachappa 2.35
Fiesta Riv Ft Ex Pachappa Sta..2.40
Plain Or do 2.40
Pond Lily do 2.05
Standard Growers LFGA LG 2.15
Gavilan, Riv Ft Ex Riverside 2.40
Violet DM Ft Ex Monrovia 2.30
Jasmine do 2.20
Crocus SB Ft Ex Yerkes Spur 2.65

For Mehring Foot-Power Milking Machines see O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles, Cal.

LEMONS—

Whittier ST Ft Ex Whittier 2.35
Pico do 2.45

BOSTON, Feb. 18.—Eight cars sold. Weather favorable. The market is easier. There are fifteen cars on track.

Homer QC Ft Ex Corona 2.55
Family do 2.35
Sweetheart AF Ex Highgrove 2.60
Homer QC Ft Ex Corona 2.60

PHILADELPHIA, Feb. 19.—Nine cars navels and two cars lemons sold. There are ten cars on track. There is an improvement in the market in navels. Market is steady on lemons. Weather clear and mild. Fifteen cars Florida oranges sold. The market remains unchanged on good stock.

NAVELS— Average

Red C Covina Ft Ex Covina.....2.52
Carmencita St Ft Ex Fullerton ...2.50
Coyote Ok Ft Ex 2.53
Goddess SA Ft Ex Pomona 2.50
Las Fuentes Crock'r Sperry Sum'l'd 2.29
Blue Globe Riv Ft Ex Riv 2.74

LEMONS—

Palm Tree AH Ft Ex Prenda 2.60

PITTSBURG, Feb. 19.—Three cars sold. Twelve cars on track. Prices low on account of the quality of the stock offered. The market remains unchanged. Two cars Florida oranges sold, average $2.00. Prices low on Floridas account the quality of the stock offered. The weather is unfavorable.

NAVELS— Average

Butterfly Covina Ft. Ex Covina ..1.55
Teal do 1.60
Yellow Beauties AF Ex Highgrove 1.30
Yankee Doodle do 1.55

ST. LOUIS, Feb. 19.—Weather cold. The market is advancing on navels. The market is strong on small sizes lemons. There are five cars navels and two cars lemons on track.

NAVELS— Average

Lochinvar RH Ft Ex E Highl'ds ..2.65
Belt do 2.35
Pointer ACG Ft Ex Charter Oak ..2.45
Hunter do 2.20

ST. LOUIS, Feb. 22.—It is raining. The market is strong on regular sizes navels. Eight cars sold. There are nine cars navels and two cars lemons on track.

NAVELS— Average

Lochinvar RH Ft Ex E Highland 2.70
Belt do 2.35
Belt Imp do 2.50
Planet SS Ft Ex Orange 2.35
Searchlight do 2.05
Sunset do 1.90
Valley TCC Ft Ex Porterville 1.60
Full Value do 1.50
Royal Knight RH Ft Ex Redlands 2.60
Newsboy do 2.30
Redlands Oranges do 1.90
Volunteer SA Ft Ex N Pomona ..2.75
Greyhound do 2.45
Liberty Escondido Ft E Escondido 2.45
El Dorado do 2.35
La Paloma Riv Ft Ex Arlington ..2.65
House wife, Riv Ft Ex Arlington 2.65
Pride of California Arlington 2.30
Circus Sparr Ft Co 2.15
Senorita S B & S R Ft Co 1.95

MALTA BLOODS—

No Name Escondido Ft Ex 2.65
No Name do 2.30

TANGERINES—Halves

No Name Escondido Ft Ex 1.40

LEMONS—

El Dorado Escondido Ft Ex Escon 2.70

PITTSBURG, Feb. 20.—Ten cars sold. Two cars on track. The market is steady on navels. Prices are almost 10c lower on lemons.

Three cars of Florida oranges sold, average $2.65 per box. The market is strong on Floridas. The weather is favorable.

NAVELS— Average

Golden Flower, Red GO Assn 2.65
Blossom Mutual OG Assn 2.00
Red Globe Riv Ft Ex Riverside....2.55
Victor SA Ft Ex Claremont 2.05
Mtn Crest do 2.15
Zebra TCC Ft Ex Lindsay 2.30
Red and Blue Label do 2.25
Full Value do 2.10

LEMONS—

Pico ST Ex Whittier 2.15
Circus Sparr Ft Co 2.25
Senorita Boston and S River F Co 1.95

CINCINNATI, Feb. 22.—One car navels sold. There is one car on track.

NAVELS— Average

Full Value TCC Ft Ex Lindsay ..1.60

CLEVELAND, Feb. 22.—Weather cool. The market is strong on navels. Two cars sold. There are six cars on track here.

NAVELS— Average

Homer QC Ft Ex Corona 2.50
Family do 1.70
Gavilan, Riverside Ft Ex Concrete 2.65
Pride of California Riverside Ft Ex 2.35

THE SNOWDRIFT.

When night dropped down, the fields
were dark and dun,
Storm sprites were out—we heard the
north wind blow;
Then when arose the slowly wading
sun
Morning came mantled in a robe of
snow.

White grew the landscape; every
field and knoll
Shone forth transfigured by the
snowstorm's spell;
The trees and fences stood in motley
droll,
Half dark, half whitened by this
miracle.

But where the stone wall held its Parian weight
Of snowdrift, like some Alp or
Apennine,
We saw a sculpture man could not
create,
Smoothed off and chiseled by some
touch divine.

Mute wonder of the myriad molded
snow,
Pure as the stars that sentinel the
sky,
What art could improvise and fashion so,
Unless some godlike power sped
procreant by!

Here plinth and cornice, architrave
and frieze,
Lift up a beauty to the day and sun,
Amidst the silver of the tinseled trees,
That never Phidias or Canova won.
—Joel Benton.

Teacher—Is there any connecting link between the animal and the vegetable kingdom?

Bright Pupil—Yes, mum; there's hash.—Philadelphia Inquirer.

"It costs more to live than it did years ago," said the man who complains.

"Yes," answered the man who enjoys modern conveniences; "but it's worth more."—Washington Star.

"What is this peculiar key on your typewriter? I never saw it on any before."

"Hist!" My own investion. Whenever you can't spell a word, you press this key and it makes a blur."—Boston Transcript.

THE LAND CONTAINS WEALTH.

Beneath the surface the extent of these resources should be determined in every neighborhood. Under any farm or any rugged hill, there may be found great quantities of mineral which should be mined, as people are in need of coal, oil, gas, pure water, etc., and the laboring people need the employment. A group of farmers and prospectors should combine in an effort to have a permanent development organization in every township or school district. By organizing a corporation for this purpose, the burden of loss would not fall on anyone alone and the sure profit in some cases would go to the stockholders in equal measure. Our readers should correspond with the American Well Works, Aurora, Ill., in regard to procuring drilling machinery and ask for catalogue.

ROSENEATH RANCH.

The new poultry ranch of Oswald M. Robertson is built on generous plans. All the houses are lathed and plastered on the outside making them free from draughts. In a number of the houses Mr. Robertson uses the burlap front which we consider good. We have always advocated the open front house with a burlap curtain to let down at night and during damp days. This curtain will absorb the moisture, yet give plenty of fresh air. The ranch is situated at Arlington where the soil conditions are all that could be desired, being of a sandy nature. Mr. Robertson is not new at the poultry business, having had several years' experience, but sold his ranch some time ago and after carefully looking over the country for an ideal location, he selected Arlington, and has laid out his new ranch on practical lines and with the idea of combining the practical features of modern poultry culture.

He breeds White Leghorns and Orpingtons and makes a specialty of selling day-old chicks. Any one desiring stock or eggs will receive generous treatment from the Roseneath Egg Ranch.

DOAK GAS ENGINE CO.

The above reliable San Francisco house is back in the Cultivator again with its regular announcement as to gas engines of all kinds and it will pay our readers to write them for a catalogue and prices.

We take a natural pride in referring to our machinery and pump advertisers as none but reliable firms are admitted to the columns of this paper if we can help it. Both in San Francisco and Los Angeles are found leaders along these lines and pretty nearly every reliable firm in the state is represented. Always mention the Cultivator in writing these firms and make a note of the Doak Gas Engine Co., at 7-9 First St., San Francisco.

LARGER QUARTERS NECESSARY

There has been such a constant increase in my business, and such demand for ABSORBINE, that our present equipment will no longer accommodate us. Consequently we are about to move to 75-77 Temple Street and 273 State Street, where orders will henceforth be received. Prompt attention given to correspondence and all orders filled promptly. I thank you for your past patronage, and solicit a continuance of your orders.

W. F. YOUNG, P.D.F.
244 Monmouth St., Springfield, Mass.

G. A. Murphy of the Sunnyside Stock Farm writes us that he has some fancy boars from New York and a number of fancy young sows of his own breeding, some being from the many times champion sow of P. F. Beauty and others from her daughters and great-granddaughters, which he would like to sell. Mr. Murphy's well-known reputation in California as a stock breeder is a guarantee as to his reliability and intended purchasers should write him for prices.

IT'S PENNY WISE

Policy to set out a good tree, costing good money, and then let the sun burn the bark or the rabbits gnaw it, when for $1 an acre you can get Yucca Tree Protectors that are practically indestructible. Write for free sample of the wrap. Yucca Manufacturing Company, 1380 Willow street, Los Angeles.

Imperial Valley Lands have a greater earning capacity per acre than any land on earth. For price list and information address, James S. White Jr., and R. A. Holt, Holtville, Cal.

HAY and GRAIN

J. S. Going & Co.

Commission Merchants

217 Lissner Building, Los Angeles, Cal.

Reference: National Bank of California
Correspondence Solicited

Water Pumped by 50 H.P. Western

THE WESTERN

"From Our Shops—Straight to Your Crops"

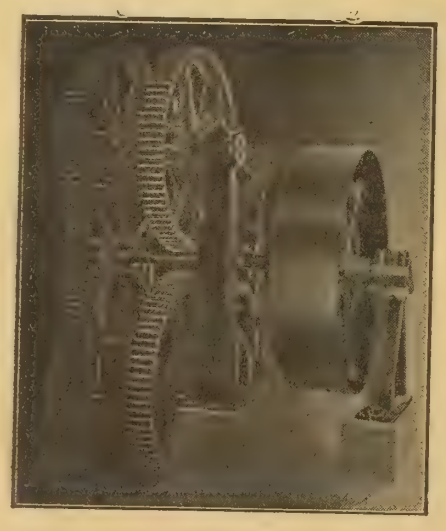
The SATISFACTORY Engine For Irrigation

See our exhibit at "Made in Southern California" Exposition, Exposition Bldg., 316-318-320 So. Main St., Los Angeles

Western Gas Engine Co.

Factory and Main Office: 908-932 N. Main St., Los Angeles
Northern Branch: 22 First St., San Francisco, Cal.

The New Pomona Deep Well Pump



A reliable pump built by a responsible Company.
Being built with machine cut gearing and adjustable bearings, they run as smooth and noiseless as a watch.
You cannot afford to buy a Pump before investigating ours.
Send for Catalogue or what is better—COME TO POMONA.

Pomona Manufacturing Co.

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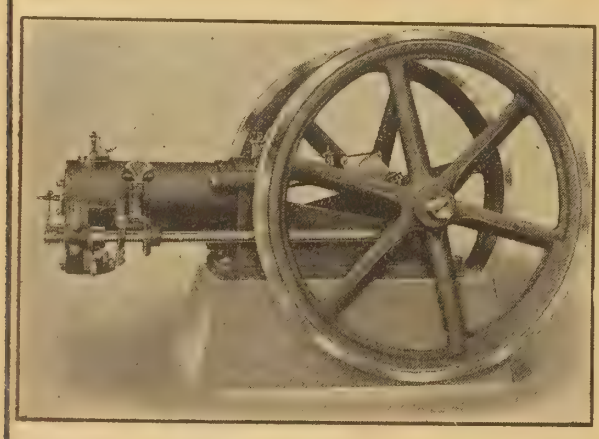

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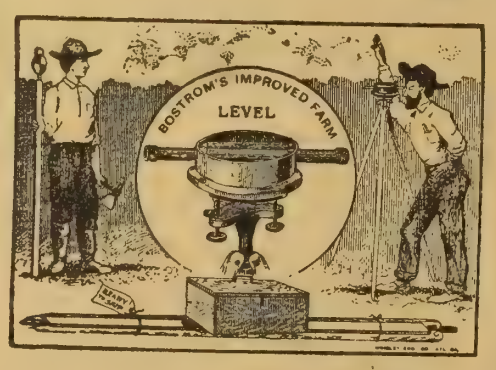

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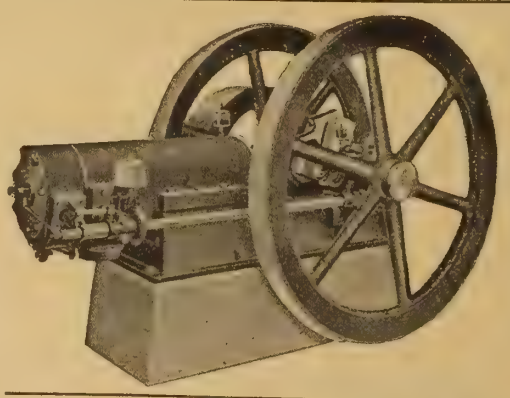

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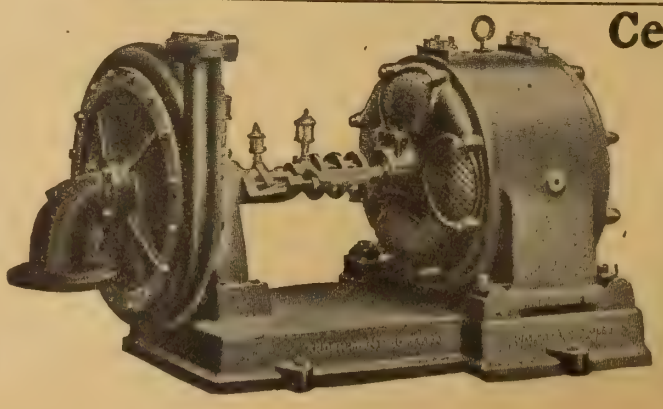

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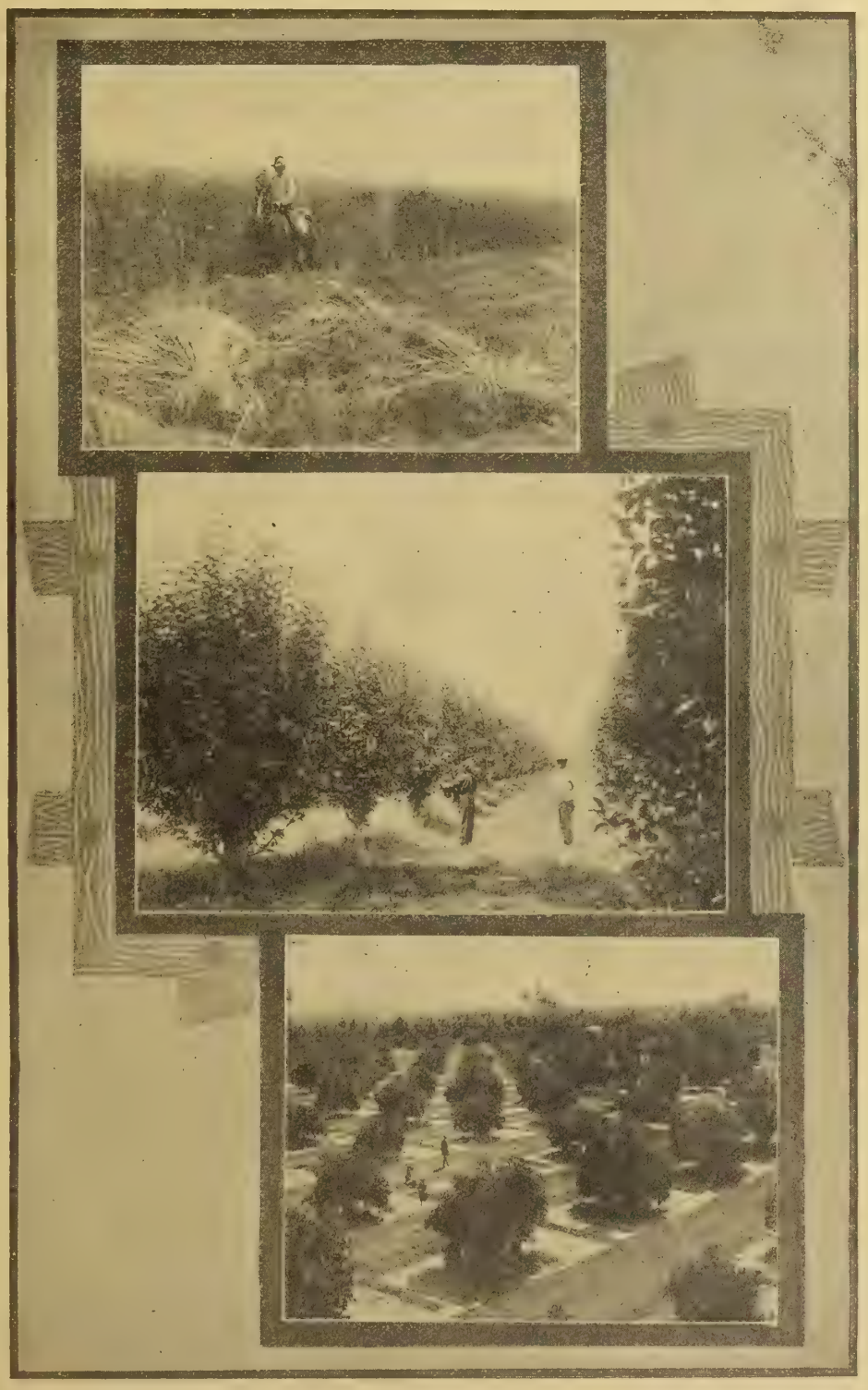

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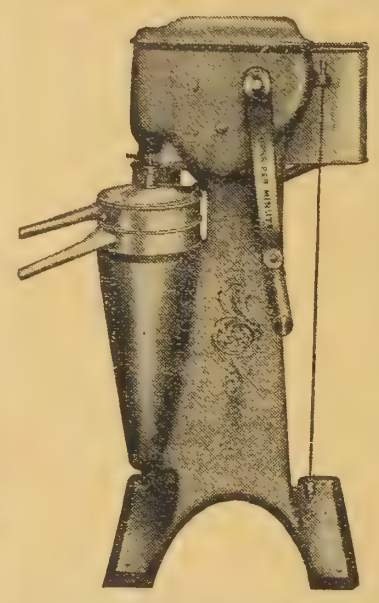

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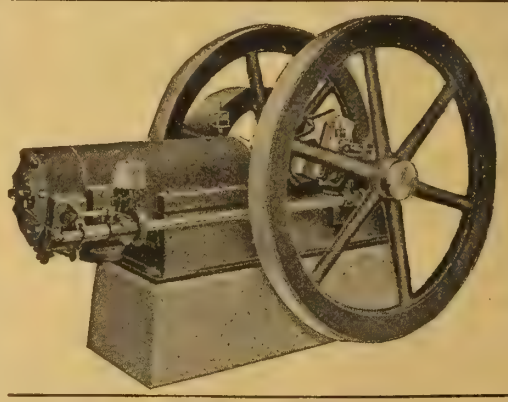

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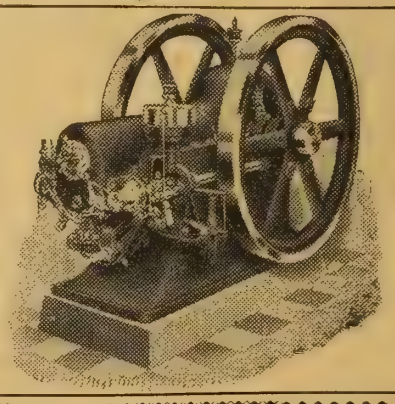

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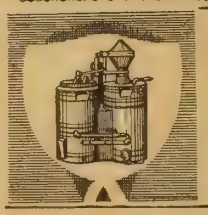

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The Mealy Bug on Citrus Fruits

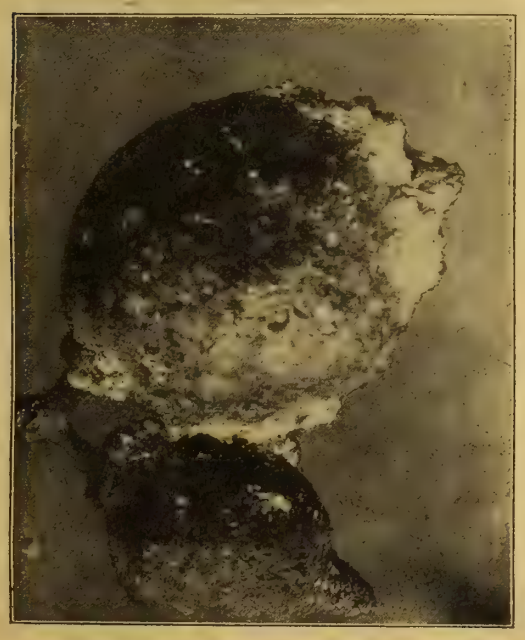
From the Report of the Claremont Farmers' Club

Articles by Commissioner Smith of Ventura County and R. C. Allen of Bonita

We gave last week, a short extract from the Claremont Farmers' Club Report, and now give a continuation in the report made at that meeting by Commissioner Smith of Ventura County, also R. C. Allen of Bonita. We also give from the engravings furnished by the club, illustrations showing the infestation from mealy bug. The Claremont Club is worthy of commendation for this work, which is not taken up without considerable expense to its members, but the results are freely given for the benefit of other horticulturists not connected with its own organization.

I WILL first give something of the damage done by the mealy bug, and its dangers. From close observations in a badly infected district I would say that the mealy bug is by far the most damaging and dangerous pest now in the Southland. I believe that the citrus industry is threatened by the invasion of this insect as it has not been threatened since the ravages of the Icerya purchasi, before it was checked by its natural enemy, the Novius (Vedalia) cardinalis. In prolificness, in endurance of hardships, in power to spread, and to do damage, no pest in the South is nearly its equal.

The pest attacks equally effectively the orange and lemon. It is commonly supposed, I believe,



The Citrus Mealy Bug on Lemons.
(Photos by Commissioner Smith.)

that the navel orange is the principal sufferer. This is not the case. An equal if not a greater damage is done the lemon because of the additional time taken in the packing and curing of the fruit and consequently greater rotting.

The mealy bug atacks the stem, leaf and fruit. In a badly infected grove as high as a hundred of the pest can be found upon a single leaf. I have counted as high as four hundred of the pest upon a green orange not an inch in diameter. As with all Coccids, the mealy bug is continually sucking the sap from the tree. It forms a honeydew, as do most of the other scales, only in far greater quantities, thus causing a dense smut and consequently smothering the leaves. The pest hunts the protected places. Consequently it is found around the stem of the young fruit. A large amount of dropping of the newly set fruit is thus caused. The fruit is wounded and injured, thus causing a great deal of rot. The smut upon the fruit is difficult to remove by washing, and more rotting is caused by the severe treatment necessary to remove this smut.

The pest is exceedingly prolific. A mature insect lays from 350 to 400 eggs. These hatch in 9 to 10 days, so its enormous power of reproduction is seen. An additional danger is caused by the fact that any disturbed insect immediately goes to laying eggs. The insect need not be more than half grown for it to begin to reproduce itself. This makes treatment by direct means, that is, by spraying or fumigation, inadvisable, unless the most thorough work is done. We experimented with a water-white oil spray of 8, 10, 12, 15 and 20 per cent strengths. No damage to the tree was done by any of the sprays. The 8 and 10 per cent were not very effective. The 12 per cent seemed about as effective as the higher percentages. A 3 per cent distillate spray was also tried, but was not effective, not so much as the 12 per cent water-white oil spray. The 12 per cent spray seemed to be very effective at first and for a time it looked as if we could control the pest in this way. But the insects that were left, being disturbed, immediately went to laying eggs and in a short time the tree would be in as bad or worse condition than it was before treatment. This was partially due to the fact that the parasites and predaceous insects were also killed. The insect protects itself very thoroughly, as does the white scale. Thus the spray had to hit it direct, under high pressure, or it was of no avail. This cottony secretion also protects it from the hydrocyanic gas, especially are the eggs protected.

The pest is always capable of movement and, until it begins to lay eggs, is often moving from place to place. The power of movement, combined with its power to live a considerable time without food, makes it many times more easily spread from one place to another than is the purple or red scale. I have put specimens in a vial and closed it with cotton. In a month's time instead of the few specimens that I had put in the vial there would be hundreds of the young insects waiting to commence feeding.

We have done considerable work in experimental fumigation and I will give the dosage and results. In all cases the measuring system of Mr. Woglum was used and care was taken to be exact in the dosage. You are familiar with Mr. Woglum's purple scale table and know that the dosage per 100 cubic volume varies according to the size of the tree. Thus a large tree, say 40 feet over by 50 feet around, would not require so much cyanide per 100 cubic feet volume as would a smaller tree, say 20 feet over by 30 feet around. This is because of the decreasing area of tent surface per 100 cubic feet of volume as the tree becomes larger. Consequently there is a smaller evaporation surface per 100 cubic feet of volume. All trees which we experimented upon were large, nearly filling a 45-foot sheet, so that for a small tree the dosage given here would have to be increased to get the same results that we got.

We used a dosage of 1 oz., 1¼ oz., and 1½ oz., and 1¾ oz., per 100 cubic feet. On the 1 oz. trees a great many live mealy bugs were left. The 1¼ oz. gave a little better results, but a great many of the pest were left. A very little burning was done with this dosage. The 1½ oz. gave quite a bit better results, but too many of the pest were left to make the treatment effective. A little of the very small fruit was burnt, but the burning was slight and practically no damage was done. The 1¾ oz. per 100 cubic feet gave good results; on examination a week after the dosing no mealy bugs being found. The burning was not bad, although some quite large fruit was burnt. For the size trees that we did, this dosage figures out about 100 per cent heavier than Mr. Woglum's purple scale dose. With this dosage most of those upon the ground were killed, although the eggs were not all destroyed.

Where the pest is piled up several deep those on the outside are much more easily killed than are those beneath. This is for two reasons. Those beneath are somewhat protected. Those beneath are sucking the juices of the tree and so have a much greater power to resist the gas. Although apparently dead the next morning I found that they would revive later. In all cases I found that those feeding were much more difficult to kill than those that were crawling. For this reason many of those on the ground would be killed although the gas was much less dense than it was higher up in the tree.

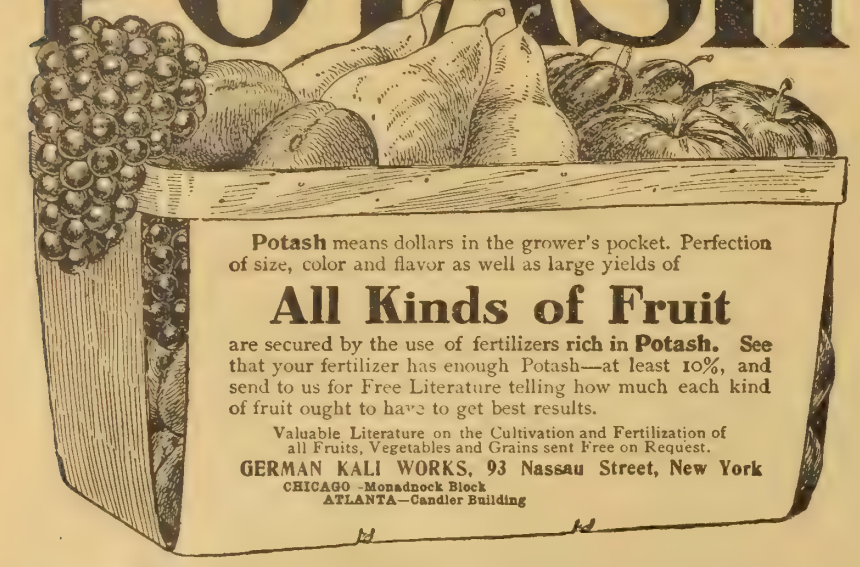
The difficulty of treating by direct means is increased by the large number of host plants that the mealy bug feeds upon. They are found on different species of palms, many weeds, on pumpkins, etc. I will give a few suggestions for treatment. I believe that fumigation, using a dosage of 1¾ oz. per 100 cubic feet will control

The Long-Tailed Mealy Bug, Which is Also Found on Citrus Trees But is Never a Serious Pest.
(Photo by Mr. Essig.)

the pest and prevent its spread, if the situation is taken in time. This dosage will burn the trees some, but a lighter dosage endangers the success of the work. Repeated inspections should be made of the infected and surrounding orchards. All weeds should be kept from the orchard. Also it will help materially if all the old fruit and as many of the leaves are burned as pos-

(Continued on Page 244.)

POTASH



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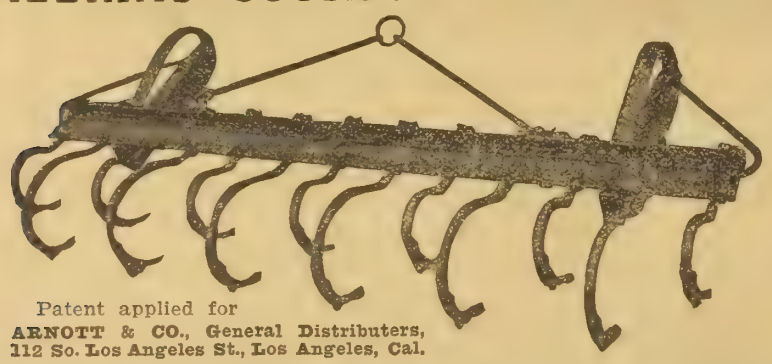

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UNTIL very recently the progagation of avocado trees as a commerical enterprise was not undertaken, and the only method employed to extend the culture was to plant the seed where the tree was expected to fruit. Under this method no extensive plantings were made, since the resulting crop proved too variable and uncertain. All species of plants grown from seed are subject to variation. Our principal fruit trees, without exception, must be propagated by a sexual means to obtain even an approximately uniform product. It has been asserted frequently that the avocado comes true to seed, and until the growing of it was taken up for commercial purposes this view was generally accepted. In fact, only a few years ago it was generally believed that avocados could not be budded and it has been but recently demonstrated that budding and grafting are practicable.

Mr. Henry Davis, speaking before the Farmers' Institute of Hawaii, February 4, 1905, said. "I can positively state that I have planted seed from selected fruit, both as to size and quality, and the resulting tree upon bearing produced fruit entirely different from the original." The experience in Florida with seedling avocados is quite the same as in the Hawaiian Islands.

The budded orchard has so many advantages over one consisting of seedlings that it is not at all probable that any grower would plant seeds in order to establish an orchard. A few good varieties can now be obtained in limited quantity from nurserymen. The present high prices indicate a strong demand for the stock rather than a difficulty in the operation of budding. There are now thousands of seedlings that are producing fruit; among these will be found a few of such superior excellence that buds ought to be taken from them for propagation.

Budding.

The simplest form, known as shield budding, is the best one to employ for the avocado. This not only proves very successful, but admits of being done most rapidly. The operation is very simple and the same as that employed in budding orange trees in California.

When the buds have taken, the wrapping should be removed, and a week or two weeks later the stock should be lopped. Here is where considerable difficulty wll be experienced, as a vigorous growing avocado stem will snap off rather than be lopped. If the entire top is taken off it is apt to prove fatal to the bud. Where the stock happens to be very brittle it becomes necessary to resort to ringing; this should be done two inches or more above the bud. Where ringing has to be practiced it should be followed by cutting back the growing tips of the stock so as to force the bud along, and any buds of the stock that have been forced into growth as a result of the ringing should be removed.

As soon as the buds have grown to the desired size and the wood has matured, the trees must be taken from the nursery and set out in the places they are to occupy in the orchard. In transplanting a considerable portion of the top should be cut off; otherwise the amount of evaporation from the leaves will be too great for the plant and the death of the tree will result. The extent to which the top must be cut back will depend upon the proportion of the roots that has been lost in the digging. When the trees have been set out some kind of shade should be provided to protect them from the direct rays of the sun.

MEALY BUG.

(Continued from Page 243.)

sible. No fruit from an infected orchard should be taken to the packing house.

Those inspecting should be exceedingly careful not to carry the pest from an infected tree to a clean tree, as it is exceedingly easy to get it upon the clothing and carry it.

I believe that experience has proved that the final control of this pest will come through parasitic and predaceous insects. This has been found to be the case in San Diego and in some of the Northern points. Nearly all the Coccinellids attack the pest. The Rhizobius ventralis and R. lophanthae have increased greatly in this district and are doing much to check the ravages of the pest. The Chrysopa and Hemerobid flies also help materially. However, the predaceous insect that has controlled the pest in San Diego is the Cryptolaemus montrouzieri, a ladybird. It has done wonderful work there and should be introduced after fumigation. They can be secured of Mr. Austin, San Diego, upon payment for his services. An internal parasite, a Chalcid fly, has done good work in some Northern districts.

Delay is fatal in handling the pest. For this reason this district is so badly infected. We are trusting entirely to parasitic and predaceous insects, except in new infections, where we follow the method that I have outlined.

I would make one other suggestion. That is, that the use of tree tanglefoot after fumigation might give good results. It would keep any live insects on the ground from going into the tree. I have not tried this and do not know how effective it would be.

What I have written and the method of treatment that I have outlined applies to this district. Conditions may be different with you. Examination will show this.

I hope that what I have written may be somewhat of value to you and that you will be successful in checking the ravages of this most destructive pest.—P. E. Smith, Horticultural Commissioner, Ventura County.

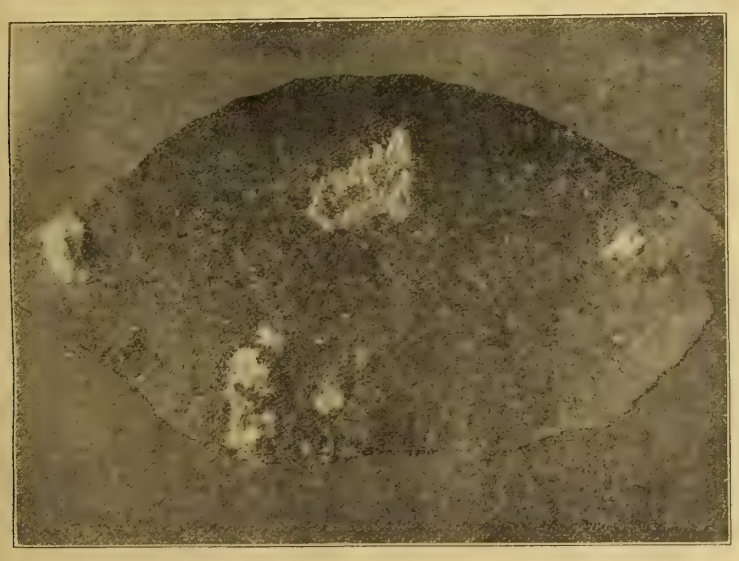
Mr. R. C. Allen of Bonita, San Diego county makes the following report:

The first I ever heard of this pest was some ten or a dozen years ago, when it appeared in Mr. Granger's orchards in Paradise Valley, probably not more than three miles in a straight line from our orchards. When the drouth came on, his orchards were abandoned and we heard no more about the mealy bug. At that time its operations seemed to be confined to a very small area, not more than a half a mile wide in every direction. Three years ago last September, the mealy bug appeared in our orchards in three separate localities.

Larvae of Cryptolaemus Eating the Citrus Mealy Bug.

The first time that we had the bug it did not spread much. We introduced the parasite—the Cryptolaemus—together with it. I do not think that the parasite did much work, for the reason that we immediately began to attack the bug ourselves by distillate spray and by fumigation. When cold weather came on in December, as usual. That fall we had fumigated our entire orchard, but this had no effect whatever upon the mealy bug.

In consequence of its remaining on the trees throughout the winter, the Cryptolaemus increased very considerably, so that last summer it was present in immense numbers. When fumigating last fall, I set aside three



Egg Masses and Young Citrus Mealy Bugs on Lemon Leaf.

the mealy bug disappeared and we saw no more of it until the following August. That year we introduced more parasites, which we got in San Diego, and also again tried to exterminate it with the distillate spray. Our efforts in this direction amounted to nothing. The winter of a year ago, as you know, was very warm, and the mealy bug did not disappear patches of about an acre each in different parts of the orchard where the mealy bug was bad and the Cryptolaemus most abundant. I did this for the purpose of preserving and multiplying the latter. In this we were very successful, and after the orchards had been fumigated the Cryptolaemus seemed to spread pret-

(Continued on Page 271.)

Lady-bird Beetles (Cryptolaemus) Eating the Citrus Mealy Bug.

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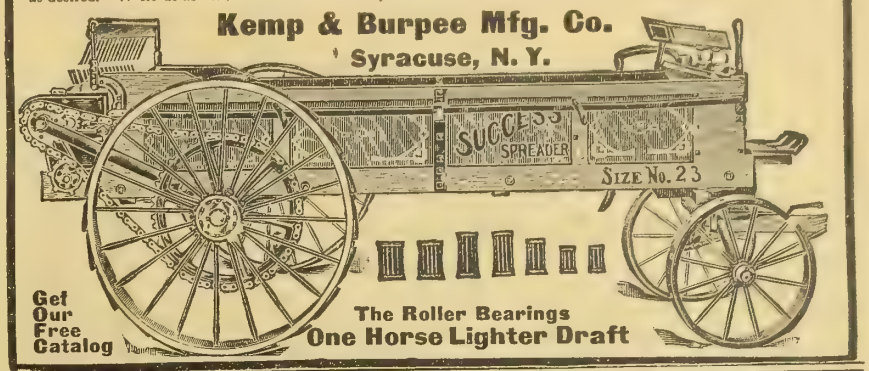

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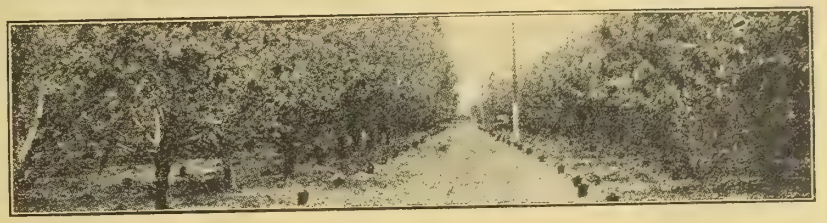

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TREE TANGLEFOOT

A Sticky Preparation Applied Directly to the Bark of the Trees

Will not injure trees. A band 5 inches wide and 1-16-inch thick cannot be crossed by any climbing insect pest. Remains sticky five to ten times as long as any other known substance. You can test it at slight expense as no apparatus is required. Used by the carload in New England against the Gypsy and Brown-Tail Moths. In California it preserves prune orchards from the Canker Worm. Wherever the Gypsy or Brown-tail Moths, Tussock Moths, Fall or Spring Canker Worm or Web Worm appear TREE TANGLEFOOT is of great value, and should be used when the caterpillars begin to crawl while they are very young.

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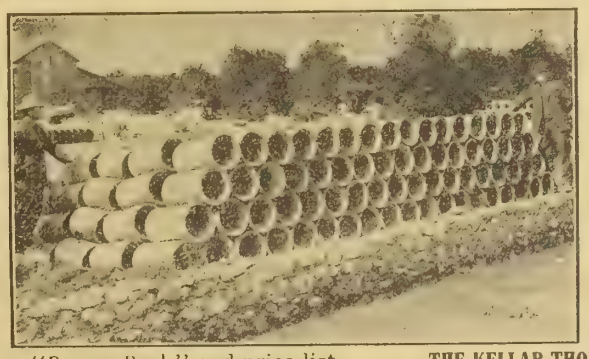

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An equal amount can not be made with any other tools in the same period of time. Write for "Brown Book" and price list

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OUR ASSORTMENT

Comprises all the Best Commercial Varieties of

Peaches
Plums
Pears
Apricots
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Grapes, Etc.

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and our stock is the best that years of experience, care in selection, and care in growing can produce. That is what you want.

Catalogue and Price List Mailed on Application

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Newcastle, California

Agents Wanted

Peaches 4 to 6 feet, $15.00 per 100; 3 to 4 feet, $13.00 per 100.
Apricots 4 to 6 feet, $13.00 per 100; 3 to 4 feet, $11.00 per 100.
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Walnuts 4 to 8 feet, $30.00 per 100; 3 to 4 feet, $20.00 per 100.

All the Varieties No. 1 Trees

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GRAFTED WALNUT TREES

Different varieties on black and soft shell roots, **25c** and up.

Orange and **Lemon Trees, 50c** and up. Special Prices on Large Orders. **Deciduous, Eucalyptus** and **Ornamental, Berry Bushes, Grapes, Roses,** Etc., Etc.

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Bartlett Pears, Apples, Peaches and Plums *In Variety*

20,000 Asparagus Con. Colossal. **10,000 Mammoth Blackberries**

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We grow a large stock of all the leading varieties of Trees, Berry Plants, Walnuts, Eucalyptus, etc, at lowest prices

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Deciduous Fruit Culture

By J. W. Mills

DUST SPRAY.

MANY inquiries regarding my experiences with dust spray lead me to ask you to publish the following as it will answer many of your readers who write to me regarding the subject.

First, I use fine hydrated lime as a conveyer (in place of water) for any or all insecticides or fungicides. The dry lime does not set up any adverse chemical action, hence either one or all known remedial agents can be used at one and the same time. For instance, take this formula: 40 pounds of the lime, (being air slaked it is dead as far as forming any cement or hard scale is concerned when it gets wet), and two pounds of Paris green or codling moth, horn caterpillar (tussock moth), green, black or apple aphids, tent caterpillar, or any leaf or fruit eating insects; and for fungi such as apple scab, shot hole, blight, powdery mildew, and moss, add two pounds each of Sal-Bordeaux and double sublimed sulphur. Even if I have no fungi I put one pound of Sal-Bordeaux with the Paris green, as it is an insecticide as well as a fungicide.

These can all be put on at one spraying and at the proper time, which is when the trees are one-half out in full bloom. The reason for selecting this time is that the fungi spores are very active and destructive to pollen and the blossom stems at their base when in clusters, causing them to drop as well as the fruit later. My success in continuous good crops and clean fruit every year I attribute to this method and time.

At that time, too, the terminal buds are breaking out with their tender leaves, a fit subject for fungi, causing that distressing disease, the powdery mildew. Again, the leaf and fruit eating insects are just hatching, the age when easy to kill. Two weeks later it would take double or triple the amount of Paris green to kill the hardest of them all, the horn caterpillar, so there is economy to be considered as well.

Two men, one horse, and a power blower screwed to a low orchard truck will spray well 20 acres a day of full bearing trees.

At the time to spray, the ground is often too wet to use the heavy, cumbersome, and expensive water spraying outfit. Besides the dust finds every minute spot and is always ready for the enemy, while the little hairs or fuzz on the very young fruit or leaves prevents the water from wetting at the bottom of them, hence the enemy is safe.

I want to say that neither rain nor wind will mash or blow off the dust. It can be put on at any time, but the dryer the better. [We assume Mr. Judd means less freedom from rains. In the interior, warmer valleys, a foggy morning when dew is on is most satisfactory for dry spray. Watsonville leaves are nearly always moist enough to take the dust.—Ed.] Wind makes no difference, except the inconvenience. If the trees are set on the square I drive diagonally so the team need not stop, as then the trees are not opposite, and the operator will have time to change the pipe over to the tree on the other side.

For mixing, I take a whisky barrel. I saw a square hole as large as the space between the middle hoops will allow. On the edge of the hole I tack a piece of canvas twice the width of the distance around it, equalizing the fullness. Sew up the seam. This cloth will form a funnel shaped tube. To mount the barrel so as to turn, I screw one inch gas pipe to a flange on the ends of the barrel, long enough to reach outside a 3½ foot box plus the frame, which is in the form of an A whose legs reach to the bottom of the outside of the box and far enough above to permit the barrel revolving in the notches made in the top of the A's (to admit the one inch pipe) to clear the top of the box so as to prevent the surplus canvas that is half a yard long from dragging on the edges of the box while turning back and forth a few times. Do not fill the barrel too full and when all ingredients are in, tie the canvas and turn the barrel until the ingredients are thoroughly mixed.

Untie the string and the surplus canvas makes the spout to lead the stuff when mixed into the box as well as having served to put it in the barrel. Four pieces of pipe, 16 inches long, and four elbows, will make the extensions and handles to turn with. Nail a cleat around the box to keep it on the truck. Put on a good cover and line the box with cloth put on with good strong paste, thus saving much dust that will otherwise find an outlet.

I never have found it necessary to spray but once. Perhaps in a different and a dryer climate where the codling moth is worse than here a spraying six weeks before harvest would be of value, leaving out the sulphur and one-half of the Sal Bordeaux. Experience will dictate in every place.—A. N. Judd, Watsonville.

• • •

Mr. Geo. W. Pierce of Davis was asked to give his experience on dust spray, but he writes as follows:

Yours relative to the "Dust Spray" is at hand. In reply will state that I have not used the dust spray on my orchards but expect to do so on my almond orchards this season. Some of my neighbors have used this spray on almond trees and recommend it highly. It seems to have been effective in some conspicuous cases. With this as a basis, together with cheapness and ease of application this manner of spraying is likely to be fully tested and its efficiency definitely settled.

In this region of dry air and freedom from fogs the application must be made in the early morning or on days of relatively high humidity.—Geo. W. Pierce, Davis.

FACTS ABOUT GRAPES.

How long the grape has been in cultivation by man can never be fathomed. Profane history does not reach back to the first plants of the first wine made from the grape. It is interesting to note that grape seeds have been found with the remains of Swiss and Italian lake dwellers, in European graves of the Bronze age, and in the tombs of the Egyptian mummies. The vine is frequently the subject of metaphor in the Scriptures

Low Prices

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French Prune, small trees, on Almond.
Muir, Tuscan Cling, Seller's Cling Peach, Royal, Blenheim Apricot.

Good Stock Home Grown

Also full assortment of other varieties. Prices reasonable.

Eucalyptus Trees

and splendid ornamental stock, Berries and Walnuts. Write

Leonard Coates Nursery Co., Inc.
Morganhill, Cal.

See our Special Circulars on **New Fruits**

THE "BOSS"
Tree Protecter

Made of Yucca Palm

Is cheap, durable and quickly put on the tree. It prevents Rabbits from destroying your trees. A sure protection against frost, sun-burn, grasshoppers or dry winds. Can be easily removed; will last for years.
Send for samples.

Prices

12 inch long,	$ 9.00	per 1000
14 inch long,	10.00	per 1000
16 inch long,	11.25	per 1000
18 inch long,	12.50	per 1000
24 inch long,	15.00	per 1000
30 inch long,	17.50	per 1000

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YUCCA MANUFACTURING COMPANY
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5000 Grafted Walnuts

1 and 2 year old grafts

On California black and English walnut roots. The stock of the California black are all from northern grown seed from large trees.

Prices very reasonable.
Eucalyptus in variety.

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Colorado Grown Trees

Because your order gets our personal attention, whether evergreen, or forest, ornamental or fruit tree; whether small fruit, shrub or rose bush, we guarantee it to be grown in Colorado; healthful, well-rooted, true to name. We give premiums to clubmakers. We pay freight on $10 orders. Agents wanted. Send for free catalog today to

The Schroeder-Son Nursery Co.
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Walnut Trees

Grafted or grown from carefully selected seed. Postal gets prices.

A. A. Mills, Anaheim, Cal.

LAND PLASTER

Gypsum will make available the plant food in your soil and bring good returns through small investment.

Wonderful Soil Corrector

Write for prices in car lots.

Acme Cement Plaster Co.
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Trees French Prunes on Peach, and Apricots, Muirs and Tuscan Clings, and many other varieties of Peach Trees; all fine budded stock. Large stock of all the leading varieties of Apples, grafted on whole roots and free from all pests. Also a fine stock of Cherries, Pears, Plums, etc. Send for price list.

A. E. SCHEIDECKER SEBASTOPOL, CAL
Prop Pleasant View Nursery.

—to dwell under the vine and fig tree is emblematic of happiness and peace.

Perhaps no plant and its products are used in so many ways and for so many purposes as the grapevine and its fruit. We enjoy the grape in the fresh state, or, when dried, in the form of raisins; the unfermented juice and wine are important items in the household economy and medicine, while the grape yields many other products and by-products. The vine itself gives pleasure to the senses by its fragrant blossom, beautiful foliage and luscious fruit; it affords shade and shelter; various parts of it are employed for divers purposes; and the wood is used for fuel in the manufacture of furniture and other useful articles. In Switzerland the leaves are applied to medicinal or surgical uses. For cuts and fresh wounds they are esteemed a sovereign remedy. Decoctions of the juice of the leaves are used in poultices. An agreeable tea is also made from the leaves, which is said to greatly strengthen nerves. In its use more sugar is necessary than for tea from the tea plant. The leaves are also excellent food for cows, sheep and hogs. The "tears" of the vines used medicinally, are a limpid exudation of the sap at the time the plant begins budding. The liquid is collected by cutting off the ends of the canes, bending them down and sticking the ends in the neck of a bottle, which will be filled in a few days. The wood and branches are used in the manufacture of baskets, furniture, rustic work bark for typing materials, etc., and when burned furnish potash and salts. The wood of the grape is said to be of the most lasting nature, very beautiful in its texture. The columns of Juno's temple at Metapont, and also the statue of Jupiter at the city of Appolonium where made from the wood of the vine. The great doors of the cathedral at Ravenna are made of vine planks, some of which are twelve feet long and fifteen inches broad.

It is difficult to accurately estimate the age of vines by the usual methods of counting the rings, because the yearly growth is not distinctly marked. Some authors state that the vine equals and even surpasses the oak in point of age. Pliny mentions a vine 600 years old. It is stated that some of the vineyards of Italy held good 300 years and that vines 100 years old are accounted young. The celebrated vine in the conservatory at Hampton Court England, planted in 1769, had in 1830 a stem of thirteen inches in girth, and a principal branch 114 feet in length, the whole vine occupying more than 160 square yards; and in one year it produced 2,200 bunches of fruit, weighing on an average of a pound.

A wild grapevine upon the shores of Mobile bay, about one mile north of Daphne, Ala., is commonly known as the "General Jackson vine," from the fact that Gen. Andrew Jackson twice pitched his tent under it during the campaign against the Seminole Indians. In 1897 the trunk of this vine was reported to have a circumference of 6 feet 1 inch at its base.

A vine now standing in California planted in 1842 by a Spanish woman, covers nearly an acre, and it is estimated that 800 persons could find protection from the sun's heat under its branches. The first election in Santa Barbara county under American rule was held beneath it. In 1893 it bore eight tons of grapes and in 1895 over ten tons. The trunk of the vine is 7 feet 8 inches in circumference.

What is considered the largest vine in the world is a scuppernong grapevine on Roanoke Island, North Carolina. According to tradition of the island, this vine was planted by a member of the first Anglo-Saxon colony in the United States in 1586-87. It is still hearty and vigorous, covering over an acre of ground and yielding today a large crop of fine, large grapes. The parent stem is larger than a man's body.—Guy E. Mitchell.

GREAT PRODUCTION OF TABLE GRAPES.

At the State Fruit Growers Convention Judge C. W. Norton of Stockton spoke as follows on the necessity of organization to profitably dispose of the table grape output:

"Within the next ten years it is safe to say that the output of Tokays, without any more planting, will be quadrupled and that within that time, instead of being called upon to market 4000 carloads, we shall have 16,000 carloads to find a market for.

"These figures are truly startling. Not so much on account of the growth that has been made in the last thirteen years, but the prospects in the next ten. Certainly not an encouraging outlook for prospective planters. Indeed, the man who would plant Tokays in the face of this showing would, to use a popular expression, have to have his nerve with him.

Marketing the Fruit.

"How are we to handle and successfully market this vast quantity of perishable fruit? The answer is, by improving the methods of marketing the fruit. First reduce the quantity to be shipped by eliminating everything from eastern shipments except strictly first-class grapes. We must educate our growers to raise the highest possible percentage of choice stuff and they will find that one-half of their product, properly culled and packed, will bring more money than all if it were put up in any old way. Let them bear in mind that there is more profit in one crate at $2 than there is in eight crates at $1.

"Again, we must widen the markets and reach more people with our fruits, and we must extend the period of marketing by improved methods of packing. Along the lines of reducing the output by relentless culling too much can hardly be said. I have said that we must educate our people along this line, and so we must; but it is probable that experience is doing more to teach this important point than any amount of friendly counsel can do.

"As to the matter of widening our markets so that we may reach more people and get better prices, nothing can be done without the co-operation of shippers and growers for the improvement of the quality of the pack to be put up, to the end that we may make our fruit so excellent that instead of its being a drug on the market, it may be eagerly sought after in all quarters of the country."

Almost the entire sugar industry of the Hawaiian islands has been developed since the annexation of those islands in 1898.

One peach planter is engaged in putting out 300 acres of peaches near Atwater, Stanislaus county.

TREES

ROEDING TRUE TREES FRESNO, CAL.

Largest Stock on the Coast

Every tree is strong and thrifty with well developed roots.

Oranges
Limes, Lemons
Pomelos
Apples, Pears
Peaches
Apricots, Cherries
Nectarines
Plums, Prunes
Grape Vines
Figs, Almonds
Walnuts
Olives, Pecans
Eucalyptus
Palms, Roses
Etc.

Our nurseries embrace over 1500 acres located in the most fertile and favorable spot in all California for the propagating and growing of first-class nursery stock of every description.

Everything in Trees Fruit and Ornamental

PLACE YOUR ORDERS NOW

Our Price Catalogue SENT FREE

We are sole propagators and disseminators of all Luther Burbank's New Creations. Send 25c for our booklet describing his valuable new products. Beautifully illustrated in natural colors.

PAID-UP CAPITAL $ 200,000.00
FANCHER CREEK NURSERIES
INC.
Geo. C. Roeding Pres. & Mgr.
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IMPROVED

TOMATO

Absolutely the finest of its type. Ripens evenly to the stem without a crack, and is not subject to rot. Vine vigorous and very productive. Fruit round, apple shaped, large in size, a deep, rich red in color, and astonishingly heavy. We have been five years in perfecting this strain and this is the first season we have been able to place it upon the market. All of the larger canneries in and about San Jose use the New Stone in preference to all others. Equally suitable for market or table use.

Price per Packet, 10c; per oz., 50c; per lb., $5.00
Prices include postage.

Vegetable Garden for 35c 20 pkts. choice vegetable seeds, no two pkts. alike. Free with every collection 25c pkt. of our giant-flowering ruffled-pansy seeds.

Our 100-Page Catalogue Is Free. Send a Postal.

Chas. C. Navlet Co. *Nurserymen, Seedsmen* **San Jose, Cal.**

The Seed House of the Great Southwest

Write for our special circulars on Watermelons, Casabas, and Peanuts.
We have special selected seed of the following varieties of Watermelons:

Watermelons

Angeleno, Large, prolific, and one of the best for shipping.
Kleckley Sweet / ***Rattlesnake*** The favorites in the San Francisco and Northern markets.
Florida Favorite, The earliest good shipper.
Chilian, The favorite in Southern California and Arizona.
McIvars Sugar / ***Alabama Sweet*** / ***Santiago*** The favorites in the South.

Cantaloupes

Eden Gem / ***Waters Solid Net*** / ***Van Buskirks Netted Rock*** The best strains of the popular Rocky Ford.
Burrells Gem / ***Hoodoo*** / ***Fordhook*** Yellow Flesh, good shippers.
A. & M. Triumph / ***A. & M. Pineapple*** / ***A. & M. Model*** The favorites on the Los Angeles market.

Oregon Evergreen Sweet Corn is the best for market gardeners.
Write for our 150 Page illustrated catalog of ***Seeds, Poultry Supplies, Plants.*** Special Eucalyptus Department.

AGGELER & MUSSER SEED CO. **113-115 North Main Street Los Angeles, California**

SEED

75 varieties of ***Sweet Peas*** Separate Colors, 5c per Pkt. 15 Leading Varieties, post paid, 50c. 4 Varieties, that bloom in 45 days, 25c. This is the besttime to plant.

Onion Seed First Quality Yellow Danvers and Australian Brown for Main Crop. Germination over 95% by test. Per lb $1.75.

Get Our New Catalogue

Eucalyptus All the Leading Varieties in seed @ 15c per package. (Six of the leading varieties, E. Rostrata, E. Leucoxylon, E. Rudis, E. Globulus, E. Corynocalyx, and E. Tereticornis for 50c, with cultural directions). 500,000 Plants, all varieties. State your wants and get prices. Send 10c for large packet each of our new ***Cabbage Head Lettuce, King of May*** and ***Brown Dutch***, earliest and finest flavor.

MORRIS & SNOW SEED CO. **425 So. Main Street Los Angeles, Cal.**

TREES

We have a full line of Nursery Stock, including citrus and deciduous fruit and nut trees: Also eucalyptus trees, 15 varieties.

ROSE BUSHES, ORNAMENTAL, SHADE AND STREET TREES.

We publish a price list, a descriptive catalogue, and a special Eucalyptus pamphlet.

Orange County Nursery & Land Co.
Main office and Nursery
Riverside Branch, Cor. Market and 7th, Sts.
Corcoran Branch, Whitely Ave.
Fullerton, Cal.

Small Fruits and Vegetables

THIS MONTH.

GROUND is in a fine condition for spading. Rake off and burn leaves and vines or rubbish. Egg plant, peppers, squash, cucumbers and other tender plants that have been started in a hot-bed the month before may be set out in the open in March. Another sowing of the same vegetables can be made for a succession of crops. Squash, sweet corn and beans are planted in the average locations usually free from frost. In fact, all kinds of vegetables may be set out from now on. Keep a supply of tobacco dust, sulphur, and insect soap on hand to fight the insects that always appear on melons, cucumbers and squash when they have two or three leaves. Stake up the berry bushes and spray them if infested with scale.

GLOBE ARTICHOKES.

CYANARA Hortensis is the Globe Artichoke of the garden. It is a hardy perennial and in this climate, an evergreen, growing from three to four feet high, with numerous branches. In rich soil the leaves will measure three to four feet in length, cut in deep, horizontal convex segments, which are covered with an ash-colored down, the whole plant resembling a large thistle. The portion eaten is the under side of the head, before the flower opens. The whole head is removed and boiled, the leaves laid aside, the bottom eaten, dipped in butter with a little pepper and salt. It is sometimes eaten raw as a salad. Sometimes the young suckers are tied together and blanched and served in the same manner as asparagus. Plants thrive best in deep rich loamy soil, although I have seen very thrifty plants in Southern California grown in adobe soil of the very meanest gumbo type.

They are usually set in rows three feet apart and about the same distance apart in the row. In the eastern states seed is usually sown indoors and the plants potted the same as tomato or egg-plant and set out into open ground in May. If well cared for it will make a fine growth the first season and some heads may be obtained during August and September, but the next year all the plants will flower and continue to do so for years.

In California the seed may be sown at any time and transplanted into open garden when six or eight inches high. It will mature in about eight months from planting the seed, but the usual time for blooming is during March.

If it were possible to get them to bloom late in the summer and fall they would doubtless bring fancy prices during the winter. I know of no method of doing this.

This plant is supposed to be a native of the South of Europe. The first account of its cultivation was in Italy in 1473, and from that period, when it was said to be very scarce, it has steadily grown in favor and its cultivation extended. There is a well-defined impression among eastern gardeners that a soil containing a large proportion of saline properties suits it best. Whether it would flourish in arid desert climate, I do not know, but it has always been successfully grown near the sea.

In two or three years the plants may get too large and should be divided into two or four pieces to the hill. This should be done here any time from December to last of January. Artichokes are not always satisfactory when grown from seed, owing to the numerous and undesirable types thus produced. One can secure a good stand by discarding the poor types and dividing the plants of the finer kinds and replacing the poor ones; but it takes time to do this. One ounce of artichoke seed will produce about 500 plants.— Q. A. Lobingier, San Gabriel.

"TIPPING" RASPBERRIES.

Many of our readers have some of the "cap" varieties of raspberries which they would like to propagate for another year's planting. For the benefit of amateur growers we will say that the "cap" varieties include such as do not propagate by root sprouts about the parent plants. These include all the black raspberries and the purple sorts. They are easily tipped but the work must be done in season, which is during the month of September. In fact, the plants are ripe for tipping any time after the summer's growth of wood drops, so that the terminals touch the earth.

We use a spade to open the soil by plunging the blade downward and pushing the handle forward until an opening is made in the earth in the rear, and after inserting the tip, withdraw the spade and press the soil firmly about the prospective plant with the feet. The tip should extend into the ground to moisture, or about three or four inches, where it will soon form a bunch of vigorous roots when they become an independent plant. These can safely remain where they started until spring, or may be dug out and "heeled in" or put into storage for next season's use. One good, vigorous bush thus treated will make a dozen or two of plants for the following year. If the fall happens to be very wet, some of the tips will root simply by coming into contact with loose sod.

Black raspberries are more dependable than the red varieties as far as yield is concerned, but as a rule are not quite as hardy. Every farmer's garden should contain a variety of fruits and vegetables.—Northwest Pacific Farmer.

WARDING OFF THE CUT WORM.

The grower of all kinds of vegetables will soon have to be on the lookout for the cut worm. A knowledge of a few essential points to control and destroy the pest will save each grower much money if practiced. I take a newspaper and cut it into squares of about two and one-half inches. After the plant is partially imbedded I wrap this slip of paper closely around the plant, making sure that it will be no less than from three-quarters to one inch above the ground when leveled around the plant. This I leave around the plant about 10 days to two weeks, or until the plant is sufficiently hardened and proof against worms. Then I take care that these paper slips are ripped off, as I lost some plants once by the paper sticking so closely that it killed the plant.

The Ornamental Garden

THIS MONTH.

SET all deciduous trees and shrubs into their permanent location at once. Roses, vines, sweet peas, annuals should be planted. Amongst others, ageratum, coxcomb, balsam, zinnia, snap dragon, and other summer flowering plants. Pot bulbs of gloxinia, gesneria, tuberous begonias and fancy calladium.

The lawn needs trimming and fertilizing and a good rolling will benefit it.

Don't neglect pruning off the straggling ends of the ornamental trees.

PLANTING OF PERENNIALS.

Every one admires flowers. Children delight to gather them. Artists gather inspiration from them. Their artistic blending of colors inspires us to admiration for the beauty of nature, and we delight to see them in the landscape. If they are properly placed in the planting of the home grounds, they add much to the attractive features of the landscape picture. The place for them is not in the center of the lawn, but at one side, where they may have a background of shrubbery.

But only the hardy ornamental perennials should be used for this purpose. If perennials or annuals are wanted for some special purpose or cut flowers, they should be grown in a place by themselves where they can be cultivated, the same as vegetables. The perennials are flowers which once planted are ever present. There are a large variety of these perennials from which selection can be made, which will give flowers in abundance throughout nearly the whole year. Some of the best include Phloxes, Gaillardias, Pyrethrums, Irises, Delphiniums, Foxgloves, Poppies, Rudbeckias, Sunflowers, and a host of others. Some of these should be planted among the surroundings of every home.—L. A. Times.

MASSING OF SHRUBS.

All shrubs and flowers should be planted in masses of several plants of a variety in a group. They should be planted close enough together so that we do not see the individual plants but the group as a whole. The distance apart will depend upon the ultimate size of each variety. Thus most of the perennials should be planted a foot apart, while the proper distance for shrubs varies from two to eight or ten feet. A mistake of too close planting is much better than otherwise, for we can then thin out if necessary. If our means are so limited that we can afford to have but a half dozen plants, they should all be placed together in a single group rather than to make the common mistake of planting them here and there as individual specimens in the lawn. Grass and shrubs do not do well together, but when the shrubs are planted in masses the ground can be given up to them and no grass allowed underneath. All the care required is an occasional stirring of the top soil in order to retain the moisture and prevent the growth of grass.—Los Angeles Times.

A big corporation is contemplating a big eucalyptus plantation in Glenn county.

TO KEEP PANSIES GROWING.

Soapy water used on the pansy bed is said to cause blight that kills the plants in a short time.

Try cutting almost the entire top off the straggling pansy-plant in July keeping it as dormant as possible during the hot weather, then dig a little fertilizer in about the roots, water well, and in a short time the plant will begin to bloom abundantly.

When the pansy plant begins to sprawl, gather the plant up in a bunch, dig up the roots and dig a hole deep enough to set the whole plant in, so the crown will be about an inch or so below the surface; press the soil firmly about the plant, with the branches held closely together in a bunch; cut off about an inch of the straggling branches, and the result will be a fine, stocky plant for fall blooming.

Keep the blossoms picked freely from the pansies. If allowed to perfect seeds, the plant will cease blooming. Nature seeks always to provide for a succession, and this being done, the life work of the plant ceases. This is so with nearly all free-flowering plants.

CUTTINGS.

Gardeners have good luck this month rooting cuttings of carnations in clean, sharp sand; young brittle tips are selected, broken off or cut with a keen knife, and set firmly in the sand just deeply enough to hold themselves erect. As soon as rooted well, they should be potted in soil.

Hardwood cuttings of roses, if made now are pretty sure to root and so will hardwood cuttings of lilac, crape myrtle, hydrangea, deutzia and other dormant shrubs and trees. The cuttings should be made long enough to have three or more eyes and be set firmly and deeply in sand box or the ground, leaving one or two eyes above the surface. A partially shaded position is best.—Pacific Garden.

NOT SO BAD AN EXAMPLE.

The Denver Field and Farm says:

"The irrigation district idea which proved such a holocaust in California twenty years ago is working all right in this state and if we can only rock along a few years longer without a pettifogging legislature dipping in on us the cloth will cut all right and make a warm garment. Almost three-quarters of a million acres have been and are being reclaimed through the agency of the district law and nearly $15,000,000 in bonds have been issued. Not a dollar of interest has been delinquent and the work of district development in the state otherwise practically impossible has but fairly begun. The men who drew up the law creating these districts made a careful study of the Wright act which brought so much grief upon California and with such a horrid spectacle for a guide they were enabled to steer clear of the shoals and the result is a law entirely satisfactory to everybody connected with it. The horror of a bad example is sometimes a good lesson."

It may be admitted that the Wright act was handled so as to cause great loss in some districts, but that was not because it was a bad law. Where understood and properly handled it has given satisfaction and is the cause of some districts' prosperity so they are today adding to the wealth of the state.

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Irrigation and Forestry

METHOD OF PROPAGATING EUCALYPTUS.

FROM Bulletin 196 published by the State Experiment Station and written by Norman D. Ingham we quote as follows of the method of propagating and care of young seedling eucalyptus plants:

The Propagation of the Seedlings.

The necessary conveniences for the propagation of the seedlings are as follows: seed boxes or flats, a good soil, seed true to name, plenty of water convenient to all flats, and in most localities a shade for the young plants from the sun is required.

The Flats.

Boxes can be bought very cheaply from the grocery stores, that will make, when sawed up, flats of varying sizes; flats in the shook, sawed to any size can be bought from the box factories at a very reasonable price. Flats 22 by 16 inches in size, outside measure, will hold one hundred transplanted plants, although they can be made larger or smaller and handled practically as well, but the depth should not be over three inches, so that the roots of the young plants will have a tendency to spread out, instead of forming a long tap root that is liable to be either cut or broken off in transplanting.

The Soil for Seed-bed.

It has been proven that eucalyptus seeds will germinate and grow in nearly any soil, from a clear beach sand to adobe, but the best results are obtained if the seeds are sown in a light loam, while a medium loam mixed with about one-fourth well-rotted horse manure should be used in the transplanting flats.

The Seed.

When buying the seed, care should be taken to deal with reliable seedsmen, for otherwise a season's growth may be lost by sowing seeds not true to name. Eucalyptus seed can be bought at from $4 to $15 per pound, according to the species and the seedsman's reputation. In many localities seed of a few species can be gathered, such as the common Blue Gum, Eucalyptus globulus, the Manna Gum, Eu. viminalis, the Swamp Mahogany, Eu. robusta, and a number of others that are scattered over the state.

The Amount of Seed to Buy.

The number of fertile seeds of any species to the pound is very high; the average number of transplanted plants raised to the pound is 12,000.

The seed of most species can be gathered at all times of the year, although the greater amount mature during the summer and fall. The seed cases should be gathered from the trees when the valves begin to open and placed on sheets of canvas or blankets in the direct rays of the sun, which will open the valves, allowing the seed and chaff to fall out.

Shade for Young Plants.

Where a large number of plants are to be grown, a lath house, with the lath spaced their own width apart for the protection of the young plants from the midday sun, will be found more convenient than lath or cheese cloth screens laid on small frames above the flats, as the labor required to move them each time the plants are watered would amount to a large item of expense during the growing season. The lath house or the screens will also protect the seed flats from the ravages of the birds and the young plants from the frosts (if not too severe) during the cold weather of the winter months, before the time for setting in the field.

The size of a lath house for a desired number of plants can be figured out, twenty-eight transplanted plants to the square foot, or an area of sixty feet square will hold one hundred thousand transplanted plants and allow ample room to go among the flats to water them.

The Time to Sow the Seed.

The time to sow the seed varies somewhat with the locality, but as a general rule the seed should be sown by the latter part of June or first of July, and the seedlings from these sowings will be large enough to be set out in the field the following spring, if they receive proper care while young.

Methods of Sowing the Seed.

The seed is generally sown broadcast in the seed flats and the young plants transplanted once before being set in the field, but some persons take the trouble to sow one seed in a place and space them in the flats. By this method transplanting is unnecessary, while others sow the seeds in hills and practise thinning, instead of transplanting, before setting out in the field. This latter method is used in some localities of the San Joaquin Valley with good success, because of the great trouble experienced in transplanting during the hot summer months in that region.

However, in the event of either of these methods being used to sow the seed, fill the flats to a depth of two and one half inches with the prepared soil, pressing it down firmly in the boxes, then sow the seed and cover them to a depth of not over one-fourth of an inch with the same soil, sand or sawdust, pressing this covering firmly over them. The best results have been obtained at the Forestry Station by using sand, while the Experimental Forestry Company of Hanford, California, have had better results with redwood sawdust as a covering and mulch for the seed flats than with any other material.

Care of Seedlings.

The seed flats should be kept damp through the heat of the day, until the young plants break the ground, then care must be taken not to use too much water and that there is a good circulation of air over the flats, or the fungous disease "damping off" is liable to occur. Damping off is most general on damp, cloudy days and where the plants are watered late in the evening, as there is very little exaporation from the earth's surface at night. This disease can be prevented by using practically no water on cloudy days and only in the mornings on clear days. Some species most susceptible to damping off are as follows: Eucalyptus corymbosa, Eu. citriodora, Eu. calophylla, Eu. ficifolia, Eu. globulus.

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By Mrs. Minna E. Sherman

ALFALFA AGAIN.

THIS season as well as last season, the Weather Bureau people have handed the farmers a series of problems to solve rather than seasonable changes. I do not believe any one of us will ever live to have another season that will prove as perplexing and upsetting to all calculations as this one. There are, however, a few fundamentals in farming that must never be overlooked no matter what the season may bring forth. One is that soil must only be worked when it will crumble behind the plow. When the land is too dry it is wasting time to plow at all; when it is too wet it is not plowing but puddling for brick-making. The clods made by plowing wet land will take several years to break down into good condition of soil tilth again. They make the land unsightly and also reduce the productiveness for the time. Farming just now is a scramble to do the things in a hurry that the rain has made impossible to do in their proper order. Only faith in God keeps the farmer from giving up at times. It has been said that three-fourths of the requirement to make a farmer is clear grit, the other quarter is knowing how to do the work.

Dry Lands.

Alfalfa is often successfully sown on land that cannot be irrigated and in wet seasons a full stand is secured. Success in making a catch of the seeding last season was not good in many places; this season is wet enough to fill out these fields. As soon as possible to do so, disk the land to make the division of the crown while the season is cool. Set the disks as straight as possible and have them sharp enough to cut, not tear their way through the plants. When the weather is a little warmer, sow the thin places and harrow in well. Harrow in a cross direction, rather than the way the disks ran. The harrow will throw some loose dirt on the cut crown; this is rather an advantage to them as it covers the cut portions from the light. When the alfalfa plants are four years old, I do not hesitate to disk both ways. On younger alfalfa the crowns are rarely large and solid enough, and the cross disking leaves them small and weak. Attempting to disk when the ground is too dry is a mistake, for the roots are torn to pieces owing to the unyielding soil. The dry soil is not stirred so that the labor is wasted.

Foxtail.

When the alfalfa fields are full of foxtail and other weeds, the regular alfalfa harrow with its spike-like teeth to dig into the soil is used. Crossing the field both ways with this tool stirs the soil and weeds out the shallow-rooted foxtail. To do this successfully the soil must be moist and it will then be made loose and friable. Making the soil loose after the last rains greatly helps the crop of hay. The use of the spiked tooth harrow on many soils proves profitable when it is used after each cutting of alfalfa. Where it is run in this way the soil remains open and light on the surface. On irrigated alfalfa it is even more necessary than on those that are dependent on the roots reaching down to moisture. This in a way may be considered a dust mulch, the same as the horticulturist insists on in the orchards and vineyards of the state. Remember this labor is useless in cases where the land will not crumble readily. One of the most important things we can do is to make this condition possible, for there is a way that the land can be made to stay open, and that is by adding humus.

Humus Making.

The addition of manure to alfalfa land is furnishing it with humus, while adding gypsum to that manure is to increase its availability. Humus is a name for the organized matter of other plant life in a form that is at once food for other plants. While plants can make their own food from the soil, air and water, if we present it to them in a more available form we gain more rapid growth. In dry lands humus becomes a conserver of moisture. It might be better to put that into a little different form and say that humus acts like a sponge to hold moisture and that it will hold soils in a good friable condition long after the soil devoid of humus is baked into a hard mass. When humus is abundant it is not possible for soil to bake. Humus laden soils will hold fourteen times as much water in them as the soil without humus.

Gypsum.

In handling alfalfa on dry land there are often spots that are annoying by failing to grow while all the rest of the field yields well. The same trouble often appears on fields that are pastured too long. These spots should be manured, using gypsum with the manure. A sack of gypsum sprinkled on the top of every two-horse load of manure is a simple way to handle it. Spread the manure about four inches thick over the bald places in the fall or winter time and after it has been rained on plow under four inches deep, harrow again, and when sowing time comes seed again. Then disk the whole field.

Opportunity.

A wet winter like this is the opportunity to bring into fertility all the bad spots on the alfalfa fields. The secret of successful farming is making everything count and doing no useless work. The tax collector makes no allowance for the bad spots on the fields. The mower crosses them and yet they pay no returns whatever. There are other things coming to us soon to help the producer of alfalfa. At the Tulare Station Dr. Shaw has many varieties of regional alfalfa under tests. Three of these were brought from the field to the demonstration train at Tulare last week. The common alfalfa was seven inches tall, while the Turkestan was 14 inches, and the Arabian was 22 inches all grown since last December. As Dr. Shaw expressed it to his audience, it was adding a story to the present yields, making a two and three story structure of the common alfalfa. Per-

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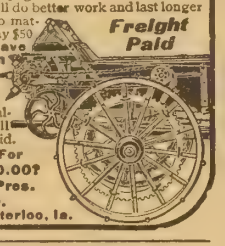

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haps many of you may not know that the University is cultivating in the different parts of California nearly a thousand acres of land in alfalfas, wheats, barleys and other cereals! That the increasing yields of these selected varieties promise to double the present yields! That the careful selection of wheats is now at the point where the millers will not be obliged to import wheat for flour, This seed will soon be ready so that California will be able to grow her own hard wheat. I will try to tell you next week about the trip on the Demonstration train. At every station nearly, I found readers of the Cultivator eager for information in a practical way on the pruning of the grape vine. It was a pleasure to hear the many pleasant words spoken in praise of the Cultivator as a practical farm paper.—M. E. Sherman.

THE FOOT AND MOUTH DISEASE.

Concerning this disease, Dr. Smead of New York says:

"All of the cloven hoofed animals are more susceptible to the contagion than the horse or several toe footed animals. This is no doubt due to the germ or virus being conveyed by moist soil or filth containing it up between the sections of the bifurcated foot to the skin just above the foot, which is the point of inoculation when it is moist or perhaps a little sore or tender. A pustule is soon formed which produces a violent itching. The animal licks it to get relief and then the mouth becomes affected and blisters and pustules soon appear. The whole system becomes more or less fevered. The animal is unable to eat any solid food, and unless it is furnished nourishment in a liquid form will likely starve before the disease will run its course as an eruptive fever, which lasts from ten to fifteen days. If the animal survives, it is practically immune from the disease ever afterward. In extremely bad cases where nothing is done to alleviate the disease the hoofs sometimes drop off.

The milk of all cows suffering from this disease is wholly unfit to use for either human or animal food; also the flesh is unfit for human food; yet the danger of conveying the disease to the human by the use of either the milk or flesh is extremely doubtful. There are on record a few cases where it was thought to have been thus conveyed; but the chief source of human infection is direct inoculation of the poison or germ entering the system through abrasions of the skin or sores on the hands.

It is not a very fatal disease in animals, the loss being largely from dairy herds becoming worthless, the loss of hoofs of other animals, and—worse than all—the soil where the animals run becoming inoculated to the extent of making it a source of continual danger. Therefore, all cattle, sheep or swine owners, on the first appearance of disease of the nature described, should do their utmost to stamp it out. Our federal government has been very alert and generous with the livestock owners of this country, and has thus far deemed it better and safer for the country's good to buy all ailing animals and pay for them; also to disinfect, or aid the livestock owners in disinfecting, their premises; and it becomes all livestock owners to aid the state and national governments all they can in their work of preventing this disease from ever getting a foothold in this country, even if for a short time a rigid quarantine has to be enforced. The germs or virus—whichever it may be—can be conveyed in men's boots, by dogs, cats and fowls. Therefore, don't hesitate to keep the animals shut up whenever there is an outbreak, and usually a week's time will stamp it out when properly managed.—Hoards.

NEED OF CAREFUL MILKING.

Every milker thinks he knows how to milk, but if the cows could speak, they would probably intimate that a few lessons in the gentle art would not be out of order. It is not fair treatment to sit down to a cow and tug and haul on her until the steps around in the stall and acts as if she were badly hurt. Sometimes a cow will stop eating and wait until the ordeal is over before she will resume her meal. The cow that does that is usually not comfortable, and an uncomfortable cow will not do her best. Some men have a way of milking that so pleases the cow that she clearly shows her satisfaction. These are the men whose methods should be studied. They never shout at, strike, or otherwise ill-treat their cows. They sit down quietly, take hold of the teats gently, no matter how much of a hurry they may be in, and begin to draw the milk without pressing too hard, for they know they are touching her at a tender point. Then they keep steadily at it until the last drop is out. There is no excuse for having a kicking cow in the herd. The kicking cow is almost always made so by her attendant. If a cow is handled before she comes in so as to become familiar with her attendant, and has been kindly treated, there will probably be no trouble.

It is my opinion that in nine cases out of ten, where there is trouble of this kind, it serves the attendant right to get a good kicking. I think if all milkers would do a little thinking, a little sound reasoning, and investigate matters a little, they would probably find sore teats a common cause for a kicking cow. Instead of using the much-talked-of straps or ropes, I should advise them to use a good remedy. One which has proven effectual without a single exception is simply clean lard. About 15 or 20 minutes before the cow is milked the first time, the lard should be applied to the teats, and when through milking wipe the teats perfectly dry with a soft dry cloth and apply the lard again. This was usually found necessary for about five or six milkings. Many milkers have the bad habit of wetting their fingers when milking, and when the teats of young cows are left in this condition, they get sore. On the other hand, lard heals or takes away the soreness that is so natural, caused by the action of rough, hard hands upon the teats that are not accustomed to the milking process.

I once visited a farm where they had a fine young Holstein cow which has just freshened for the first time. The milker and the poor animal had gone through almost everything during the first three milkings. The cow had no means of expressing her sufferings except with kicks, and the owner, though a kind, intelligent person, could not think of other methods to apply except what he had used so often with other cows—tying her with straps or ropes. He decided then to let her keep her calf, as it seemed

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an impossibility to milk her. It was then that I happened to have my attention called to it, so I told him of our method which at that time we had tried only with three or four young cows. He laughed at me when I suggested that I would apply the lard myself. But the poor cow's teats were now so sore she would not even let the calf touch her. With considerable patting and rubbing and kind words I had the satisfaction of getting the lard applied, and the still greater satisfaction of seeing the cow stand perfectly still a short time afterwards to the great astonishment of those present.

The cow is a creature of habits, and upon the attendant depends the formation of these habits. The more regular they are the better work she will do in the dairy. Teach the young boys to be kind to the cows, to feed them properly, and do everything in their power to make them contented and happy. The true dairy cow usually possesses a highly nervous temperament, that rebels against harsh treatment. In view of this fact it is ill-advised economy for the dairyman to share with the farm dog the duty of caring for her, for if he does, she will in all probability even up with him by giving an ever diminishing quantity of milk. Gentle treatment is about as important as good feeding, and must be the practise of dairymen if they expect to succeed.—Kimball's Dairy Farmer.

STOPPAGE OF THE BOWELS IN CATTLE.

This is one of the most common ailments that cattle are subject to; at the same time more cattle die from this cause than any other, for the simple reason that stoppage is due to paralysis of the bowels.

Stoppage of the bowels is to be regarded as a sign of another disease rather than a disease itself. It occurs in almost all fevers, indigestion and over-eating.

In order to overcome stoppage of the bowels a treatment must be applied to overcome the ailment which causes it, such as paralysis of the bowels. Seventy-five per cent of the cases of stoppage of the bowels are due to partial paralysis of the bowels. In this case the bowels require a laxative and tonic and not a physic, for if the bowels are paralyzed a physic will have a tendency to cause irritation, indigestion, inflammation, and death follows. For this reason it is dangerous to give a cow salts or oil.

A cow thus afflicted should be given a laxative and tonic, plenty of drinking water, with the chill taken from it, bran mashes made of flaxseed tea, also inject several quarts of warm water once or twice daily through the rectum by the use of the hose and funnel, and give the animal a reasonable amount of exercise.—Dr. David Roberts, Wisconsin State Veterinarian.

Have little bedding in the pen at farrowing. Wait until the pigs get large enough to take care of themselves before bedding heavily. Have the pen dry and clean and keep it thus. Make liberal use of the well-known disinfectants. Prevention is cheaper than cure.

Before calving the cow's food should be reduced in quantity and of a laxative nature.

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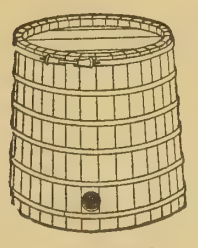
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California Cultivator

ESTABLISHED 1889

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Contents

AGRICULTURAL SCENES NEAR PHOENIX. Cover.
MEALY BUG ON CITRUS TREES. 243.
CITRUS.—Propagation of the Avocado, 244, 245.
DECIDUOUS.—Dust Spray; Facts About Grapes; Great Production of Table Grapes, 246, 247.
SMALL FRUITS AND VEGETABLES.—This Month; Globe Artichokes; Tipping Raspberries; Warding Off Cutworms, 248.
ORNAMENTAL GARDEN.—This Month; Planting Perennials; Massing of Shrubs; Pansy Growing; Cuttings, 249.
FORESTRY AND IRRIGATION.—Propagation of Eucalyptus Trees, 250.
LIVE STOCK AND DAIRY.—Alfalfa Again; Foot and Mouth Disease; Need of Careful Milking; Stoppage of the Bowels in Cattle, 251, 252, 253.
EDITORIAL.—America a Great Market; Knowledge and Experience; The Water; Agricultural High School, 254.
AGRICULTURAL NOTES OF THE PACIFIC COAST.—Northern, Central, Southern, The Coast, 255.
POULTRY.—Poultry as Scavengers; Incubation Chat; Poultry Queries; Grit for Hens; Selecting Laying Stock; Why Hens Lay Eggs Without Shells, 256, 257, 258, 259.
FARMERS EDUCATIONAL AND CO-OPERATIVE UNION, 260, 261.
AN AGRICULTURAL HIGH SCHOOL, 261.
EGYPTIAN COTTON, 261.
BEES AND THEIR CARE.—Bees Aid the Grower; More Laws for Bee Keepers, 262, 263.
QUERIES AND REPLIES.—Olive Cuttings; Fox Terrier; Contracted Hoof; Oleander Scale; Vinegar from Grape Juice; Small Supply of Milk; Fig Cuttings; Galled Shoulders; White China Geese; Alfalfa Seed; Drying Figs; Grape Fruit Stock; Eucalyptus in Poor Condition, 264, 265, 166.
HOUSEHOLD.—Selling the Farm; The Old Man and the Old Farm; About the House; Hay Cooker; Boiled Dinner; Weaving, 267, 268, 269.
PRODUCE MARKETS.—Los Angeles Market; San Francisco Market; Citrus Markets, 270, 271.

AMERICA A GREAT MARKET.

A Texas subscriber kindly sends us a copy of the San Antonio Daily Express in which the possibilities of Mexico as a producer of tropical and semi-tropical fruits are referred to. The paper says: "Statistics show that in the year 1907 the United States imported tropical and semi-tropical products to the value of $567,166,242 gold or $1,134,332,484 Mexican currency, and that in this enormous importation Mexico, a country directly at its doors, had but a small share. Here are some of the facts brought out:

"In 1907 the United States imported tropical and semi-tropical fruits and nuts to the value of $37,040,689 gold. Mexico's share in this amount was $189,641. In 1907 the United States imported coffee to the value of $76,534,808 gold. Of this amount Mexico received $1,697,094. In 1907 the United States imported cacao (chocolate) to the value of $14,578,989 gold. Mexico sent just $11 worth.

"The details of the fruit importations show that in the year under discussion the United States bought bananas worth $11,872,283 gold, and that but $10,884 of that amount came from Mexico; that the lemons purchased had a gold value of $4,250,979, and that Mexico participated to the extent of only $2317; that the value of the oranges imported was $309,316 gold, and that Mexico's shipments amount to only $45,179, and that out of $1,342,879 gold paid for cocoanuts Mexico received but $6683.

"That Mexico can produce bananas, lemons, pineapples, oranges, cacao, cocoanuts and coffee of superior quality, and that an immense trade should be built up in these products between the United States and this republic are two points brought out by Mr. Mallen in his book."

In the same issue account is made of the efforts of the Eastern importers through the New York Fruit Exchange before the Ways and Means Committee for free trade, especially on lemons, but in a general way on all semi-tropical fruits. Now the question before our American producers is, will the greatest market of which the world knows be turned over to the New York importers for the benefit of European fruit producers and incidentally for the encouragement of a great industry in Mexico, or will it be retained for our own people, that greater comforts may be had by them and that our own wealth may be produced?

We have seen the statement that if the lemon importation of the United States could be terminated and those same lemons produced in this country, it would give employment and be the means of establishing five thousand more homes in this country. "While the production of American lemons has increased during the past ten years, the percentage of homegrown fruit consumed in the United States has not materially increased. In 1901, 67 per cent. of the consumption was imported; in 1907, 64 per cent; in 1908, 2,231,125 boxes of lemons were imported into the United States, which was the heaviest importation in the history of the business and was an increase of over 400,000 boxes in excess of the importation of 1901. It is still more important to the whole people of the United States that this very necessary article of diet be produced at home, to the end that the supply would be insured and that the prices be freed from the control of a foreign nation or the opportunity for combination of a few large importers.

KNOWLEDGE AND EXPERIENCE.

The rosy hued literature which is sent out from California to induce Easterners to purchase our land and make this their future home, while as a rule telling the truth does not always tell the whole truth. Or at least, often, it has been known to give wrong impressions as to the ease with which farming or fruit growing work is taken up in California.

California soil and climate when supplemented with irrigating water certainly does accomplish wonders in producing wealth. But to give people the impression that the situation here is such that any one can without material effort supply the conditions necessary to make this wealth is, we believe, unfortunate.

True, the shrewd man may say that no one should expect to come here and take up a calling entirely different from that which he has been following in the East and succeed without hard study and close observation of our methods of work. We do not think that the people who are so zealously engaged in promoting the sale of real estate give this wrong impression wilfully—rather through not fully understanding the difficulties against which the Easterner is forced to contend. We have known of people coming here whose life has been spent in the professions and who expected to at once take up farming without giving its details any due consideration. Where the newcomer has done this without understanding, the only salvation for him is to open his eyes very wide and see how his neighbors who are succeeding conduct their farms. Too often, however, the newcomer has an idea that the former settlers are inclined to be back numbers. Possibly this may be true in certain cases, but the older farmer certainly has some ideas which would be of value to every newcomer.

Nor is the farmer who has had wide experience in the East fully qualified to take up the work in California. Conditions are so vastly different that they must be understood from the California standpoint if success is to be secured.

We would not have our newcomers believe by any means that the farmers now located here can supply them with all the information necessary. In fact those same farmers are the ones who today are putting up a loud call for better agricultural education for their children in our public schools. They realize the handicap under which they are laboring and feel that the necessity is imperative for better qualifications for the future farmers.

THE WATER.

The office of experiment stations is sending out Bulletin No. 203 of Irrigation Investigations by Dr. R. H. Loughridge of University of California. This bulletin contains the results of observations upon the percolation of water in the soil beneath the furrows in which water is applied to orchards in the vicinity of Riverside. These observations were made as a part of a study of the losses of irrigation water and their prevention. In the vicinity of Riverside the available water supply has been put to use, and further expansion of the irrigated area depends upon more economical use of this supply. Canals have been lined to prevent seepage losses, the orchards are intensively cultivated to check evaporation losses, and this study was undertaken to arrive at some knowledge as to the losses by percolation, with a view to taking steps to lessen them if practicable. It does not, however, go into the question of methods of checking these losses. The report contains the results of observations on a number of orchards, the results showing clearly the great necessity of each orchardist examining his own soil and subsoil conditions and adapting his methods to these conditions.

AGRICULTURAL HIGH SCHOOL.

In another column of the Cultivator may be seen an article written by Mr. Mark R. Jacobs. Mr. Jacobs is principal of a high school located within the limits of the city of Los Angeles, but being in an outlying rural section has been encouraged by the Board of Education in its effort toward studies which point to nature and to the life with which the farmer comes in contact. Fortunately, the school has fallen under the principalship of one who is enthusiastic or at least deeply interested in things agricultural.

True, the effort is only just taken up, so that no lesson can be drawn from its accomplishments. but we may at least point to the effort and hope it will encourage those in charge of other schools of the state to make similar effort.

The Holstein-Friesian Association of America is offering prizes which will be given at the Alaska-Yukon-Pacific Exposition to be held at Seattle next summer, which will aggregate $500 in value. The same organization will give a $25 silver cup for the fair to be held in Spokane next fall, also a silver cup of like value at the State Fair at Sacramento. We notice the account says that eastern state fairs at Springfield, Illinois, Syracuse, New York, and other sections, will be granted $500 in prizes. This looks as if the Pacific Coast is not in the same class with the Eastern states in the eyes of the Holstein-Friesian people.

"First rude vigor, then tempered strength, then a great human spirit touched with the pathos of infinite patience and sorrow; an ideal American who had climbed from the bottom to the top; who had educated himself by the way, and in becoming supremely great had remained supremely human." That was Lincoln.

No authentic information is given out, but rumor has it that the Ways and Means Committee is to place lumber on the free list. We do not think the fruit growers of the state are making any particular fight for free trade on anything, but stand in the attitude of being wonderfully willing to have free lumber for fruit boxes, trays, and general building purposes.

From data compiled by W. C. Mendenhall, there has been drawn and printed an excellent map of the San Joaquin valley of California. It shows the artesian areas and ground water levels over the entire valley from Tehachapi to Sacramento. The map is known as Water Supply Paper 222 Plate 1.

Agricultural Notes of the Pacific Coast

Northern California

It is predicted that wheat will be a light crop and high priced during the coming season.

Dairymen in the Loleta section, Humboldt county, are organizing a cow-testing association.

Premature blooming of almond trees it is feared may bring disaster upon that crop this season.

It is stated that there are 300,000 boxes of apples in cold storage in San Francisco at the present time.

California butter makers are hoping to secure a contract for a quarter million pounds of butter for the navy.

The Sacramento valley has more water power within its limits than all other sections of the state combined.

Much of the land that is now flooded along the rivers is expected to be dry enough for later spring crops.

The Ferndale Co-operative Cow Testing Association is now fully organized with nearly 30 dairymen as members.

The Farmers Storage Company of Colusa now has a greater warehouse capacity than any other company on the Sacramento river.

Crude oil coating applied to the sides of the levees has been proven during the recent floods to be effective in preventing the wash.

The storms in the Sierra Nevadas have driven down many deer which have been seen in the lower foothills, some even in the settlements.

The Game Farm, located near Haywards, is getting in shape for breeding several varieties of game which have already been established there.

Sacramento Valley Development Association has endorsed the proposition for bonding the state for $18,000,000 to advance the good roads cause.

A committee from the Yuba and Sutter Growers Association held a meeting recently at Marysville to discuss the scab bill now before the State Legislature.

The Colusa County Board of Supervisors has appointed a committee to confer with the supervisors of Yolo and Glenn county to fix upon an uniform coyote bounty for the three counties.

Stockmen in Waddington, Humboldt county, are compelled by the continuance of the storm to feed, and they are now hoping the storm will cease long enough that they may place their stock on pasture.

The bill before the State Senate known as the Price bill calls for an appropriation of $15,000 to promote the investigation of the vine and its enemies and general promotion of the viticultural industry.

The Sutter County Farmer reports that the prospects for a grain crop are the poorest on record, but the crop of hay will be abundant. The first cutting of alfalfa promises to be exceptionally heavy.

Many cows were drowned in the flooded districts during the recent floods. Some at Marysville which had been driven to the tops of the levees were stampeded by dogs, so that many after being saved were lost in their fright.

Central California

Apricots are in bloom.

The Fresno County Farmers Union is considering a proposition of an Eastern firm for 100 car loads dried fruit.

Raisins are now going forward at a more rapid rate than for some time and it is now hoped the old crop will be cleaned up.

Dinuba has recently had a raisin contest at which things cooked with raisins and raisins cooked in different styles were the exhibits.

The Farmers Union at Hanford is busy shipping fruit and the producers are generally impressed with the advisability of supporting this institution.

Delegates of the various Locals of Kings, Fresno and Tulare Farmers Union held a meeting last week at Kingsburg to perfect a district organization.

The County Veterinarian of Tulare county has posted notices announcing quarantine against movement of cattle from that county on account of Texas fever tick.

Producers of the Watsonville district are urging the necessity of deepening the channel of the Pajaro River up to Watsonville so as to give better shipping facilities.

The few oranges left in Sanger orchards in eastern Fresno county after the holiday shipments are now being cleaned up. All fruit is practically uninjured by the cold weather.

Representatives of large fruit buyers have examined many Kings county orchards to determine as far as possible at this early season as to the output of apricots and peaches.

An action brought by apple shippers for loss of apples carried over the Northern Pacific railroad, but which were not provided with refrigerator cars has resulted in an award for the shippers.

A Kings county raisin grower after keeping careful account of raisins fed to young growing pigs has figured out that raisins netted him as pig feed $36 per ton. This is better than some sales which have been made to the packers.

Many growers of the San Joaquin valley have gone east with their raisins and are selling them on their own account. The next step will be for several to stand together and reduce the expense of this kind of a campaign, or as now appears try the Union.

The Pajaro valley apple growers are making more strenuous demands for the erection of a cold storage plant. Success which has been secured with some apples which were shipped to storage plants show the gain which will accrue to the industry if a large plant may be had at Watsonville.

With all the warning which this state has had against introducing fruit trees from Florida and with the knowledge on the part of the grower that no living plant can be introduced from that State under the ruling of the State Horticultural Commission, such shipments are still attempted, and only last week at Lindsay a bunch of pecan and persimmon trees shipped from Macclenney, Florida, were ordered burned.

Southern California

Saticoy boasts of 22 inches of rainfall up to the present.

Imperial shipments of asparagus aggregate about $1,000 a day.

Imperial valley asparagus sold in Chicago recently at $1.25 per pound.

The bulk of the cantaloupe planting is already done in the Imperial valley.

Imperial valley is becoming one of the greatest dairy sections of this state.

Nine thousand three hundred acres of beets are already planted in Ventura county.

The asparagus crop of the Imperial valley this year is estimated to exceed $75,000.

Fruit packers at Redlands are urging the establishment of a pre-cooling plant at that point.

Beans, peas and other garden truck are being planted heavily at El Modena, Orange county.

A Brawley, Imperial county, farmer raised 35 bushels of corn per acre after removing his cantaloupe crop.

Imperial county claims to be the greatest county for irrigation in the state, also in any of the United States.

The cantaloupe acreage in Imperial valley is now reported to be about 3,000 acres short of last year's planting.

Stockmen all over Southern California are greatly elated over the magnificent feed with which all the hills are covered.

Eugene Germain, one of the oldest nurserymen and seedsmen on the Pacific Coast, died at his home in Los Angeles, February 18.

Beet planting is begun for the spring crops and thinning on the earlier planted beets has already begun at Oxnard, Ventura county.

Grain growers hope that the sale of jute bags will be regulated by the Prison Board so as to give more fair treatment to the farmer.

The success which walnut growers secured in last year's grafting operations will inspire extensive grafting over of seedling walnut trees this spring.

The big Bixby ranch near Long Beach, Los Angeles county, is shipping several cars of eucalyptus trees in flats. 56,000 trees are required to fill the car.

Many small tracts are being planted to the sugar beet in the Imperial valley in order to test the soil and see if a good content of sugar can be had in beets grown there.

Many Southern Californians are desirous of a return to the old name of the San Jacinto Reserve instead of the Cleveland Forest, which was the name given by President Roosevelt.

Riverside was recently favored with a shipment of Florida oranges, but as it was consigned to no one, visions of the white fly appeared and it was not long before the box and its contents were consigned to the flames.

A forest ranger in the Santa Barbara National Forest, unable to break his way through the snow to the Ventura postoffice was forced to travel across the mountains into the San Joaquin valley and mail his monthly report at Bakersfield.

The Coast

A heavy rain last week was a great aid to crops near Pullman, Washington.

It is rumored that onion growers near Portland have combined to boost prices.

Spitzenbergs and Yellow Newtons are the favorites with Oregon apple growers.

Cherry growers of Wasco county, Oregon, estimate a big crop for the coming season.

Hops have held fairly steady and no week passes but good sales are made at Portland.

The state president of the Farmers Union of Washington has recently organized five new Unions.

Arid lands aggregating 3,000 acres near Almira, Washington, are soon to be brought under irrigation.

Farmers of the dry farming section of the west have given up hope of the passing of the 320-acre dry farm homestead bill.

A 10,000 bushel sale of wheat was recently made at Pullman, Washington, the price ranging from 96 cents for Russian to $1.10 for Bluestem.

A huge irrigation project has been started near Grant's Pass, Oregon, which will involve the expenditure of $300,00 and irrigate over 9,000 acres of land.

The Local of the Farmers Union at Athena, Oregon, is increasing in membership continually and it is hoped it will include nearly all the farmers of Umatilla county.

The Spokesman Review estimates that the tariff on jute bags and burlaps puts a tax of more than a million dollars on the farmers of the Inland Empire alone.

Oregon prune growers are asking the reason why prunes at this time are commanding so low a price when the crop in hand has been reduced to practically nothing.

Wool buyers near Pendleton, Oregon, have combined and it is feared by the growers that they will not be able to secure from them reasonable prices for the coming clip.

An enthusiastic meeting of fruit growers was recently held at Salem, Oregon, at which it was voted to form the Salem Fruit Union with a capital of $6,000. The object is to handle the produce of the members.

The Oregon Pure Bred Live Stock Association held an important meeting at Portland recently, at which questions of tariff as affecting stock breeders and many other points in live stock development were discussed.

Four hundred farmers of the Inland Empire representing the State Farmers Educational and Co-operative Union, recently held an important meeting at Spokane, discussing the marketing of grain through one man or committee. More than 75 per cent of the producers were present.

The Grand Canyon Electric Light & Power Company has awarded contract to the National Wood Pipe Company, Los Angeles, California, for 15,000 feet of 4, 6 and 8-inch Machine Banded Redwood Pipe with cast iron collars. Contract also includes fire hydrants, and fittings. A complete water system will be installed.

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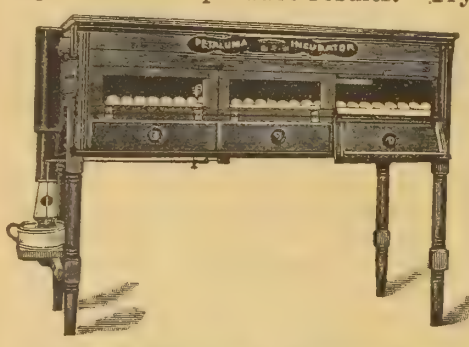
MIDLAND Poultry Food

Is based on ***quality*** and it is quality in Poultry Food that produces eggs. ***Cheap filler*** and ***cheap grain*** will ***not*** make eggs. ***Midland Poultry Food*** contains only the ***choicest*** cereals and animal food the market affords. You ***can't*** afford to try and be successful and not get results. ***Midland Poultry Food*** will produce results. Try it and see. $1.95 per sack



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San Jose Hatchery, San Jose, Cal.

ANNOUNCEMENT

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The incubator we use has been tried out and demonstrated for several years past what it can do. We consider it the best we have come across so far. The success poultrymen are having with chicks it hatches is proof sufficient.

In Mr. Henry Langenschwadt, our manager who attends the incubators, we have a man whom we are satisfied understands his business and he is demonstrating this by results.

At present can furnish following breeds and shall add to them as we can secure stock. All from utility stock:

White Leghorns we hatch regularly in two grades—No. 1 and special. Will hatch lower priced to order but cannot recommend them.

No. 1. White Leghorns: $9.00 per 100; $25.00 for 300; $40.00 for 500; $75.00 for 1,000.

Special White Leghorns: $12.00 per 100; $34.00 for 300; $55.00 for 500; $105.00 for 1,000.

Brown Leghorns, $10.00 per 100. Black Minorcas $12.50 per 100.
Rhode Island Reds, $12.50 and 15.00 per 100.
Barred Plymouth Rocks, $12.50 per 100.

Lots of 50 add one cent each. Less than 50 chicks do not recommend to ship.

Address orders to **SAN JOSE HATCHERY,**
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Count Your Chicks Before they are Hatched!

Hubermann's Automatic Incubator and Brooder Alarm

watches the temperature in your machine **Day** and **Night** and if for any reason it changes the instrument will call you by **Automatically** ringing the warning bell. Bells may be located at any place, such as in the Barn, the feed house and in the Dwelling. Price Complete $5. Satisfaction Guaranteed. Address nearest Agent, or

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Profit in the Poultry Yard

By Mrs. Frank Metcalf

We solicit short articles of a practical nature from the fancier and utility breeder, giving their experience with poultry. All inquiries pertaining to feed, management, disease and its prevention will be answered through these columns.

POULTRY AS SCAVENGERS.

THIS part of the usefulness of a few chickens is often lost sight of in the dread of their well-known destructive tendencies where flowers are concerned and gardens unprotected; but a half dozen or so can almost earn their own living where vacant lots adjoin one's premises, and keep said lot looking better than it would without their presence.

If no lot is available, an hour's freedom with a little watching will do them worlds of good, and they will find many tid-bits going to waste. I have my own yards so arranged that one flock has access each day to a back yard sowed to barley and alfalfa, and on the other days often let one lot out for a run about the house and garden. Sometimes they nip off a choice flower, or eat some particularly tempting bit of garden "sass," but with a little watching, they behave nicely and do worlds of good around the barn.

No need of a patent manure spreader where a flock of hens can swarm over the manure pile. They scratch it fine enough, and find plenty to reward them. The good man often says things which would not sound well in polite society when they get inside the barn and make themselves at home, but it is well to learn to shut doors after one, and he is learning the lesson slowly.

You remember "Samantha" encouraged the wife of a bashful man by telling her that "she wouldn't wonder if got so by the time he was 80, that he wouldn't get over a fence to get out of the way of meeting a woman on the road." So perhaps our men will learn to shut barn doors after them by the time they are 80 or so, if I let the chickens out as a gentle reminder occasionally.

INCUBATION CHAT.

Am afraid hens won't set early enough for good broods of early chicks, so will set up an incubator, and my boy conceived the idea of doing away with the legs and attaching it to the wall by hanging it on brackets. This seems a very good idea, as it will do away with the floor jar, and no legs in the way so a table can be set under if wanted. I have never wanted an outside incubator house, as I want them where I can see them at all hours without taking extra steps, so am setting it in the screen porch, in a corner that is solidly walled in. This insures fresh air, and although the thermometer may vary some, so do eggs under hens vary in degree of heat, yet still hatch, so that don't worry me very much. Just so the heat don't go up, and there is a new contrivance on the market (there used to be such an attachment to old machines) which will ring a warning bell if the heat varies inside the machine, that I may test later on.

I have found that when eggs are placed in a large pan of water at 103 degrees for an hour or so before putting them into the machine, it helps the hatch. They then warm up quicker, and as it takes time to collect enough to fill a machine where one only has a few hens, I conceived the idea that in this way some of the moisture taken away by evaporation, could be restored. Certain it is, that eggs treated in this way, produce better hatches for me so I pass it on for others to test.

I am anxious also to test a new little machine which is said to hatch every day as well as if the eggs were all put in at once. That is, one can save eggs from each hen and set them two days apart, thus toe-marking and pedigreeing the chicks by means of this new fangled contrivance. Sounds particularly good, if it proves out, but so many things claim to revolutionize the world, then fail to "make good." We can only try those which appear good to us, and judge by experience.

The Inglewood Poultry Colony is about to hold an unique exhibition in that utility, and not feathers and "points" are to be given prizes. I want my neighbor who has a hen which lays two eggs a day, (by spells) to exhibit the freak, but she is such a homely specimen, I don't know whether he will or not. The Hogan system is to be the test used to govern the awards. I have some hens which "test" finely under this system, but I am not saying that they are my best layers.

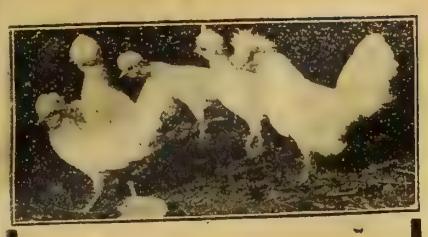
POULTRY QUERIES.

Rheumatism.

I have a Rhode Island pullet hatched last October which has some trouble with the cords in her feet, which seem to draw, so she stand on her toes, or else sits on her knees to eat. She seems perfectly well only for this trouble. She has only been troubled this way a short time. I have a Rhode Island Red rooster which has his legs enlarged from the knee down. They are rough and at feet seem to crack just as our hands would. I used sulphur and lard, but it did no good. He eats well and looks well only for this trouble.—R. H. Grimes, Colusa Co.

The pullet has undoubtedly been fed too concentrated food and not had enough exercise, which, combined with the damp weather has brought on rheumatism. Feed plenty of green feed and no meat of any kind, and especially give her celery tops if you can get them. A dose of Epsom salts will also be a good thing, and bathe her feet and shanks with some good liniment. Treat the male in the same way as to food, and plunge his legs into a pail of kerosene clear to his knees twice a day until the scales come off clean. Usually three or four days will affect a cure in stubborn cases. This is a very severe cure, but also very effectual in stubborn cases. Where his feet are cracked, a dressing of vaseline after the plunge bath would be helpful. Are you letting these birds run in the wet where ashes have been thrown? Is there alkali in the soil? Surrounding conditions have much to do with such troubles as you describe, and dampness will cause a whole train of troubles —Mrs. F. M.

Salinas has a 14 inch rainfall to date.



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Red Pyle Game
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Some splendid birds for sale. Eggs $3.00 per 13, $5.00 per 26, infertile replaced. My fowls are not related to anything in America and are the finest to be had of their respective varieties. Have won hundreds of first prizes from Los Angeles to Madison Square Garden, New York City, during past twenty years.

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FROM

Quality S. C. White Leghorns, Mammoth Imperial Pekin Ducks, Golden Sebright Bantams, Black Tailed Japanese Bantams. All prize winners this season. Write for prices.

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S. C. White Leghorns and Barred Plymouth Rocks

We can fill orders promptly from our selected matings of utility bred stock, at $5 per 100, $45 per 1000. Our prize winning Leghorn, $2 per setting of 13. Won all first and all but one second, also silver cup for best pen at last Chutes Park Show.
San Gabriel car to Masonic Home, two blocks south to ranch.

SWANSON AND JOHNSON
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GEESE

Toulouse ***Embden***

Prize winning stock never beaten at any poultry show.

$1.50 Per Setting

Send your order at once for the best stock in the west.

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High protein MEAT SCRAP.
Just what the name implies.
A Meat Scrap High in Protein
Why Not Use the Best
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Mr. Walter Hogan pronounced my standard bred "Fishel" White Rocks the best laying type he ever handled. 220 to 250 capacity. My White Leghorns are winning with 220 to 270 capacity. Mated for egg production. My birds have been selected for years for laying. Eggs $2.00 for 15, $5.00 to $10.00 per 100.

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GRIT FOR HENS.

With regard to the grit fed to hens I may say, that this opens a very interesting field. It has been said that the grit itself has only one function, and that it is not used for grinding food, and that it has absolutely nothing to do with the grinding process. I have been following the discussion quite closely, and I feel that the first thing we ought to do is to get some facts. I believe that the grit loosens up the grain in the crop, and helps to work the juices together, whether you call that grinding or not. Whether they get any mineral matter out of it is questionable.

I took twenty White Leghorn cockerels and divided them into four flocks and put them into separate pens and did not give any of them a bit of grit to eat for one week, but allowed them to eat grain and all they wanted of it. I fed them two or three times a day both on hard and soft feed, and at the end of that week took the first pen and gave them what grit they could eat, and they had all they wanted. The pen right opposite to them did not get any grit at all, but I waited until I saw what the first pen ate, and then put that much grit into a grinding mill and ground it just as fine as flour so that they would get all the mineral matter that was in it, but they did not get any grinding material. I fed that to that pen, and then to the next pen I gave neither the grit nor the meal nor the ground grit; I put off by themselves and gave them all the grit they could possibly eat and then took it away from them.

I kept that fourth pen just to die for their country, and at the end of three weeks killed one of them and took out the grit that was in the crop, washed it off clean and put it in a bottle and weighed it, and there was actually more grit in the bottle than the fowl had eaten at the end of the first week. The grit had been there before; gravel and stones and pieces of coal.

At the end of four or five weeks I killed another one and there was more grit left in the gizzard than the fowl had eaten at the time I filled it up, and I waited five or six weeks and I killed another, and there was still more grit in the gizzard than there was at the time I started to feed them. Some of these little pebbles were just as smooth and round as they could be, for they had been rolled over and over so many times.

So far as the actual results in the vitality and growth are concerned, the ones that had the grit by them all the time where they could help themselves had done better than the others; but the difference is not so marked as I thought it was going to be. There are some individuals in the pen that have not had grit nor the mineral matter ground up for them that are just as bright and husky as those that had the mineral matter and the grit.

You can learn more from pullets than you can from cockerels, so I put some late hatched Plymouth Rock pullets in one of these colony houses, and another bunch in a similar house and fed them the same way, except one of them had no grit all the while; and as yet I have not seen any marked difference as to their health or condition. I find that the hens are not laying many eggs; they eat about equal parts of the grit and cracked oyster shell, a little more oyster as a rule; and when they are laying rapidly they will eat two or three times as much, which would indicate to me that the hen naturally feels that she needs it.—Petaluma Poultry Journal.

Special Prices

Today we have on hand a few of the latest models of the "Old Trusty" Incubator, just as long as they last you can have them at the lowest prices ever made by any Incubator company in the West. We wish to get our money out of them quickly, we will hold any machine you wish to select if you send a $2 deposit, these machines will not last but a few days at these prices. Now is the time to BUY and save many dollars while you can. This ad may not appear again. If you do not have the catalogue. 148 pages, send for it. We pay R. R. freight in Cal. 120 Egg Size, $10.90, 165 Egg Size $12.90, 240 Egg Size $15.90. These machines are all complete with all attachments ready to run.

E. E. McClanahan
112 E. Eighth St., Los Angeles, Cal.

When the chicks are hatched don't feed them anything for 24 hours, then feed them the best dry Chick Feed you can get. We say that is

West Coast Chick Feed

Read what others say:

SAMUEL R. KELLAM, former president of the L. A. Co. Poultry Association, says: "West Coast Chick Feed is the best feed for young chicks I have ever used. I have given this feed a thorough test, and have always found that it produced fine, large, healthy chicks."

MRS. A. BASLEY, the celebrated poultry authority, says. "I want some more of your West Coast Chick Feed, for it is excellent. It is purer, cleaner and appears better balanced than other feed I had been using, and to tell the truth, I have been experimenting, feeding both together, and they always eat yours in preference."

Ask your neighbors, for there is more of "West Coast" sold in Southern California than all other kinds put together. If not sold by your dealer send us $3.50 and we will send a 100 lb. sack, freight prepaid within 300 miles.

West Coast Mill

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The
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Are now equipped with a moisture guage that will accurately register the moisture; relieves the operator of all guess work and assures better hatches than ever.

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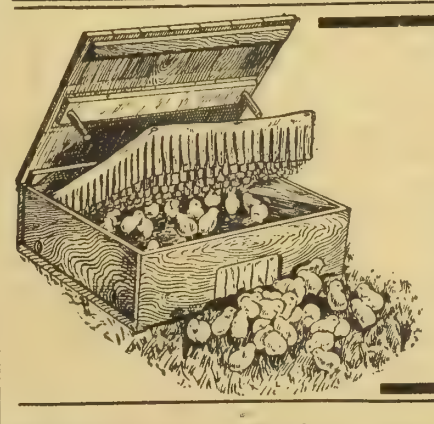

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Did You See My Winnings?
At Los Angeles County Poultry Show, January 18-23

68 Fine White Wyandottes sold last week. Stock is going fast.

The White Wyandottes Lead

Mrs. C. D. Hubbard
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Ranch Mirasol

EGGS FOR HATCHING—WHITE LEGHORNS—MITCHELL STRAIN

Large birds, heavy layers, bred for highest utility only. Order book now open for season 1909

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"SUCCESS" Incubator now ready for shipment. The greatest bargain ever offered. THINK of IT, a $40 Incubator for $25, we pay the RR. Freight. Send today for free book and full particulars, poultry lectures, etc.

I can sell you Incubators for less than some companies can make them for. I own my own factory, pay no rents, employ no useless office help, pay cash for all material, and am satisfied with a small profit. Write to me today and INVESTIGATE; that's all I ask. My Incubators are hot water system, automatic regulators, ventilation and moisture under control at all times.

Just write me today.

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The Only Original Dry Chick Feed for Baby Chicks

Mamma And The Babies All Raised on

CHAMBERLAIN'S PERFECT CHICK FEED

Write for Prices, Booklet, or name of nearest Agent.
W. F. CHAMBERLAIN FEED CO.
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If You Are Not Satisfied Try Excelsior

If Your Dealer Don't Keep It Write Us

A balanced ration for the baby chicks. We have been manufacturing Excelsior Chick Food for years, and it is made to meet the conditions of California. Those who feed Excelsior have no trouble raising strong, healthy chicks.

We also make ***Excelsior Egg Food*** and Excelsior Scratch Food; nothing better. For particulars write

Excelsior Cereal Milling Co.

242 Central Ave., Los Angeles, Cal.

PRICES FOR PURE-BRED POULTRY.

We do not hear so much now as formerly about the "Golden Mean," a phrase which originated, as the writer believes, with the Greeks. The present age has pretty nearly forgotten it.

Sometimes there is criticism of the high prices often paid for pure-bred poultry and for eggs for hatching. And the criticism is often justified. Too high prices are paid in many cases. But whether the price paid in any particular case is too high depends not only on the quality of the fowls or eggs purchased, but also upon other things.

We know of cases where as high as $1,000 has been paid for a single specimen of poultry. Was the price too high? Well, if the man who sold the bird could get $1,000, do you blame him for getting it? In such a case the price is not too high for the sellers point of view. And if the buyer wants the bird a thousand dollars' worth and has plenty of money with which to pay, then he must be the judge as to what price is too high. That price would be too high for the writer of this article to pay, that is certain, but I am not going to undertake to decide what some one else can afford to pay, or ought to pay. One thousand dollars is a big price to pay for a fowl, but is it any higher than $10,000 for a boar, $17,000 for a bull, or $44,000 for a cow? These prices have been paid in this country.

I suppose that no good business reason can be given for paying $1,000 for a single fowl, but often a breeder, particularly if he is in the business for a living, is justified in paying a good price, a big price, in fact, and he has a right to ask as big a price as he can get.

A breeder of Silver Wyandottes who had for several years been making his entire living from breeding this variety and selling his birds and eggs for a big price, showed several very fine females at the Madison Square Garden Poultry Show at New York, the greatest show in America. A rich man wanted to buy his three best females. The breeder refused to sell for various high prices offered him. Finally he said: "I can't afford to sell these pullets except at a price which will warrant me in retiring from this business. I am making my living out of it and a good deal more. I am known as the best breeder of Silver Wyandottes in the country. I have been years in building up my flock to the point which it has attained in my best birds you see in this show. If I sell them I am no longer at the top, and my business suffers." Now wasn't this man right? Didn't he talk good sense? And yet some would have said he was foolish for refusing $500 or any like sum for three "chickens." Maybe people were foolish for sending from all over the world to this man for Silver Wyandottes at fabulous prices, but the fact remains that they were doing it, and he surely would not be justified in throwing away a permanent, profitable business for a few hundred dollars.

This article, however, is not intended to urge any reader to pay "fancy" prices for pure-bred poultry, but it is written with the idea that some readers will see that if they desire to get really first-class pure-bred poultry they should expect to pay what is considered a fair price, and should be willing to do so. They should not expect, for instance, to buy first-class pure-bred fowls for $1. Nowadays the carcass of a fowl of good size is worth that. I killed a cockerel that at the time was worth over $1 at the meat market. And yet if I had asked some one a dollar and a half for this cockerel, including the labor and expense of boxing him up and delivering him at the express office, some people would have thought I had an immense amount of nerve. There would be no profit, and surely no satisfaction, in raising a bird like this and selling him at butcher's prices. I know a breeder of Mammoth Bronze turkeys who sold some fine big toms dressed at 20 cents per pound. For one of them he got $5 as he weighed 25 pounds dressed, and of course this is not an unusual weight for a male turkey, in fact it is under the Standard weight for a full grown tom. But this man told me that if he had quoted a price of $5 to some people for this bird for breeding purposes they would have fainted. But isn't a first-class bird for breeding purposes worth twice his value for eating purposes and up?

The value of a pure-bred fowl depends upon how good he is, and upon his breeding. Each person must decide for himself what he ought to pay. But one must expect to pay a reasonable price, a price at which the seller can make a fair profit, and from this price up if he buys something of the highest quality and buys from a breeder who has a wide reputation. Such a breeder charges for his reputation which has cost him years of time and much money to build up. And he has a right to charge for that reputation, and so will you when you arrive at the point at which he has arrived.—Kansas Farmer.

SELECTING LAYING STOCK.

There are a great many methods advertised in various pamphlets and papers stating that if you will practice this or that method of selecting as laid down in the paper you will be able to select the drones from the workers. The writer has tried some of these methods and knows the trap nest is the most accurate every time. It is by selection and keeping records that advancement is made along this line. Each hen has her own individuality. Certain hens lay eggs that are nearly always hatchable. Some hens lay well, their eggs are nearly always fertile, but will not hatch either under hens or in incubators. The chicks will develop to a certain size, often fully formed, but die in the shell. A few hens lay eggs that are seldom fertile.

In selecting birds one has several objects. The saying is often heard that "the hen that lays is the hen that pays." The majority of those in the business consider egg production the best end of the business. It is often the surest. There is less risk attached to it. If the production can be increased five to ten eggs a hen per year you are doing a good business. The writer is inclined to believe that the average hen does not produce over eighty eggs a year. At the Maine Station, where the trap nest system has been in use some years, the record last year was between 135 to 140 eggs per hen, which shows a considerable gain over previous years. Wonderful improvement may be made by selection for a few years, but after that progress is slow. There must be a good many conditions favorable to make advancement. It

is necessary to discard all hens that do not come up to a certain standard in egg production, and select males from the very best producers. Many people have claimed to have made advancement by selecting certain types of layers, but this is not always accurate. It has been found, however, that a female possessing a nice clean cut head with a full bright eye usually is a good producer, or in other words, hens showing feminine character and not those showing too much masculinity should be selected. A hen with a large crop has a better chance of being a good layer than one with a small crop. If their crops are examined at night considerable variation will be found. Dairymen know that a cow must have capacity to consume food in order to give a large quantity of milk.

One hundred pounds of dry poultry droppings contain elements of fertility that would cost good money if bought on the market.

CYPHERS FIRE-PROOFED INSURABLE INCUBATORS

AND BROODERS Hatch and Raise More and Stronger Chicks than any other. **Not Once Upon a Time, but All the Time.** They comply with the new rules of the Fire Underwriters. They have been Inspected and passed by them. **They Bear the First Insurance Label Ever Issued on Incubators and Brooders.** NOW, in order to be safe on the insurance of your buildings you must watch for the label. To safeguard your homes **refuse every machine without a label.** Our 212-Page Book, illustrating America's Biggest Poultry Farms, tells all about it. It is **free.** Address Nearest Office.

Fire-Proofed, Insurable

CYPHERS INCUBATOR CO., Oakland, Cal.

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A Talk on Hatching of Chicks

we want to send you this Free. Send name and address on a postal to San Jose Hatchery 395 E. St James St. San Jose, Cal.

East Side Poultry Yards

Have pure bloods. Eggs for hatching. Hatching chicks a specialty.

S. C. White Leghorns Chicks 10c. **Barred Rocks** Chicks 12c.

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$6 Fireless Brooders at $1.50

One Dollar secures detailed plans and right to manufacture the best Fireless Brooder in the world. Agents wanted everywhere.

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WHITE ROCKS HUMPHREYS STRAIN

Eight hens or pullets, with cockerel $15. Strong vigorous, heavy layers, superb table fowls.

241 North Union Avenue Los Angeles, California

COULSON'S POULTRY FOODS

MADE IN PETALUMA

GUARANTEED

SOLD EVERYWHERE

Five Pens Prize Exhibition ***Rhode Island Reds.*** Two Pens ***Columbian Wyandottes.*** Won Cup, four specials, five ribbons on five birds at late Show. Eggs—Reds $1.50, Columbians $2 for 15. ***A. B. WHITE***

1816 Acacia Street, Alhambra, Cal.

M. E. DILLINGHAM

BUFF and WHITE WYANDOTTES BREEDER OF **Six Varieties of BANTAMS**

Write for circular. Ranch, Clarence Ave. and San Gabriel Blvd., one mile north of end of San Gabriel car line **San Gabriel, Cal.**

White Wyandottes

The 200 egg kind—the all white variety—the best all around fowl for farm or town purpose. Eggs from the best strains reasonable.

Wm. C. Parker, 111 Pacific Avenue, Santa Cruz, Cal.

When writing advertisers, mention Cultivator.

WHY HENS LAY EGGS WITHOUT SHELLS.

There are several reasons for this, and while shell-less eggs are generally attributed to a lack of sufficient shell-forming material being supplied to the hens, in nine cases out of ten improper feeding is at the root of the mischief. This is demonstrated repeatedly by the fact that, even where shell-forming matter is supplied in abundance, hens will still lay shell-less eggs. In that case we must look further afield for the cause.

A great deal of mischief is done by feeding on over-stimulating foods and the reckless use of condiments which overexcite the ovary, and inflame the lining membranes of the oviduct. In this way the egg-producing organs are stimulated to excessive production with the result that the oviduct becomes diseased and those organs which produce the mineral matter for the shelling of the egg are too debilitated to perform their function properly. It is worthy of note that fowls suffering from inflammation of the oviduct often lose the use of their legs, the trouble being frequently attributed to cramp.

A very common cause of shell-less eggs is internal fat, which blocks the walls of the oviduct and impairs its functions. Worms in the hen's intestines sometimes lead to eggs being expelled before they are properly shelled. Narrow perches are also responsible for shell-less eggs, the eggs being dropped prematurely, owing to the struggle of the fowls to retain their balance. Similarly, fright will cause a fowl—more especially a pullet—to expel the egg before it is ready.

When a fowl has acquired the habit of laying shell-less eggs there should be a complete change of diet. All soft food, except what is cooked, or juicy vegetables, which may be freely supplied, should be withheld for a time and grain only be given. Enough Epsom salts should be added to the drinking water to make it taste faintly saline, and for a few days the fowl should be housed in a quiet place. To help steer clear of shell-less eggs always supply the fowl with plenty of flint grit and guard against internal fat by feeding moderately—two meals a day are ample—giving a plentiful supply of green stuff. Perches must be of the proper size, and, above all, leave condiments and all that sort of thing severely alone.—W. R. Gilbert, Portland Oregonian.

MAY BE?

In a statement to the French Academy of Sciences, an observer says he has discovered a sure and easy means of telling whether an egg will produce a male or a female. His view is that "eggs containing male germs are wrinkled at the small end, while those containing female germs are smooth at both ends."—Ex.

A little bone meal added to the chickens' feed will prevent bowel trouble and weak legs.

Arrange the nests so the fowls can't roost on them. A board on top will do it.

Six square feet of room per bird in the house and 100 in the yard will be about right.

The creamery at Benicia will soon install a 20-ton refrigerating machine.

BUY CHICKS NOW! DON'T WAIT!

We can sell you baby chicks right now as low in price as when eggs are much cheaper. We can ship safely anywhere within 48 hours. **WE HATCH** 19 varieties of poultry. Send today for price list; it gives full details how we sell and ship chicks, etc. We have satisfied customers everywhere. We guarantee you a square deal. We originated the baby chick business several years ago in Southern California. Our sales, in 1908, exceeded 230,000 chicks, ducks, turkeys, geese, etc. We hatch all of them in season. Write us today. Call and see us—visitors always welcome. Heavy breeds are our specialty.

Pioneer Hatchery Co.

108-110-112 East 8th St., Los Angeles, Cal.

Incubators

A good chance to get a small machine at a big bargain price. We are overstocked with the small size Improved Pacific, 62 egg capacity. Regular price $10.50, now $7.00 till stock is reduced. Not old, second hand machines, but brand new and first-class in every respect. No better made. Hot water heating; best Sheer Regulators; everything the best. Catalogue free.

West Coast Seed Co.

115 W. 7th Street, Los Angeles

All the best POULTRY SUPPLIES.

Howard's White Leghorns

When you consider poultry and want to know what kind to keep go at it intelligently; don't jump into a decision of the variety until you know which is best and why, which will lay most and largest eggs, cost less to keep and grow more pounds of flesh for same money. White Leghorns win universally at all laying contests held in various State colleges, Australia, etc. Write us for merits of our strain, win more prizes at poultry exhibits where shown in Colorado, Missouri, Arizona and all over the coast than any; also at great Japanese Imperial Poultry Exhibit for three years, over all birds imported at high prices. Owing to rearranging our flocks we will sell you some nice hens CHEAP, considering their quality. Eggs for setting. Improve your flock with one of our beautiful large white cockerels, bred by trap nesting continuously for several years for great egg production from world's champions. Improve your turkeys by one of our extra Mammoth Bronze toms, whose sire at 18 months old weighed 52 pounds and won highest awards at greatest eastern exhibits. W. W. HOWARD, R.D. No. 2, (Cudahy Ranch), Phone Boyle 8052, Los Angeles, Cal.

Baldwin's White Leghorns

Have Won Again in the Hottest Competition at the Leading Shows on This Coast

San Jose, Nov., '08, we won ***three 1sts, best display, best pair*** and ***6 other*** prizes.

Petaluma, Dec., '08, ***three 1sts., best collection,*** $50.00 Challenge Cup for best ***Cock, Cockerel, Hen*** and ***Pullet,*** with ***5 other*** prizes.

Heaviest ***layers***
Greatest ***payers***
Any can boast.

The ***prize takers***
And ***coin makers***
Of this coast.

Our Specialty, Heavy Laying, Standard Bred White Leghorns. We hatch more (from Sept. to May), cull closer, and have more high-grade birds left than any other breeder. 3000 birds now. Stock, any size, for sale. Eggs $1.50, $3 and $5 per setting, $6 and $10 per 100, $55 per 1000. Send for price list and ***free booklet.***

1st Prize Hen San Jose and Petaluma, 08.

Frank E. Baldwin The White Leghorn Specialist

46 Washington Avenue, San Jose, Cal.

February 6, 1909.

Dear Sirs:—

I have used your Poultry Tonic for a long time and think there is none so good. But you have one remedy, POLLY OIL, I do not feel you know its worth. I had one little sample bottle given me a few weeks ago. I used it on two cases of swell head and it stopped the swelling right away. I had one pullet on which the lump had stayed for over two months, her bill having grown crooked, but as she was a pet I could not have her killed, but could not drive the lump away until I got the sample of Polly Oil. It then commenced to go away, and in a few days is was nearly gone. I have cured every one since that showed any signs of such trouble. I have used all I have and do not want to be without it.

Very respectfully,

FANNIE L. E. WEBBER, Pasadena, Cal.

If not sold by your dealer send the price, 50 cents, and we will send you a bottle, prepaid. WEST COAST MILL, Los Angeles, Cal.

WHY?

Do All Prosperous Poultrymen Use

Jubilee Incubators and Brooders

Our Catalogue A Will Tell You. It Is Free.

Jubilee Incubator Company ***Sunnyvale, Cal.***

Hurst Potato and Orchard Sprayer

This Machine Sprays Anything

Potatoes, orchards, vineyards, truck, etc. Cheap in price, light, strong-and-durable. High pressure from big wheel. Pushes easy as it is well-balanced. Vapor spray, prevents blight, scab, rot and bugs. **Doubles your crop.** Brass ball-valves, brass plunger, strainer, etc. **Guaranteed for 5 years.** All

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Without a cent in advance. Test them with your money in your pocket, and then if you buy, pay us out of the extra profit. Don't pay the dealer's profit, but order direct from us and get wholesale prices. The Hurst Horse-Power Sprayer (shown below) is for large fruit, grape and potato growers. "No tree too high, no field too big for this king of sprayers." Fitz-All Barrel Sprayer fits any barrel or tank. Furnished plain, on barrel or on wheels. High pressure, perfect agitation, easy to operate. Brass ball-valves, plunger, automatic strainer, etc. Write to-day and tell us which machine you are interested in—and you'll get our Catalog of all-kinds-of-sprayers (\$3 to \$100), spraying-guide, and special free sprayer offer for first in each locality this season. Do it now.

Horse Power Sprayer

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FRUIT TREES

If you want the best, well rooted, straight trees, true to name, ask HOWARD & SMITH, Nurseryman, Ninth and Olive Sts. Every order receives special attention—whether for one or a thousand trees. A complete assortment of deciduous and citrus trees, berries, grapes, etc. Send for special price list. Free delivery in Hollywood, Glendale, Pasadena, Eagle Rock and within city limits. Both phones. Mail address, Box 484, Los Angeles.

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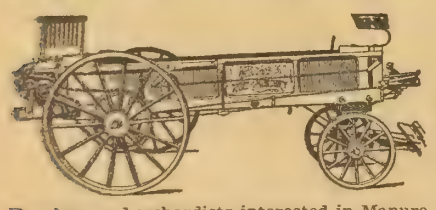

Ranchers and orchardists interested in Manure Spreaders will receive valuable information and catalogues by addressing us on this subject. We carry these spreaders in stock ready for immediate delivery.

Arnott & Company
112-118 So. Los Angeles St., Los Angeles

PREPAID

Raspberries, Surprise, Superlative, Kansas Blackcap, 75c doz.
Blackberries, Mammoth and Rathburn, 75c doz.
Phenomenal Berry, London Red, Golden Queen, 75c doz.
Cuthbert, Gardena and Lucretia Dewberry, Logan, 50c doz.
Asparagus Roots, Barrs, Palmetto, Columbia, 1 yr., 30c doz.
Walnuts, Fruit Trees, Flowers.

Pioneer Nursery, Monrovia, Cal.

The Ukiah Times appeals for a crusade for better farming.

Farmers' Educational and Co-Operative Union

The attention being attracted by the great Farmers Union movement makes it worthy more extended notice. We are glad to have the following from the pen of P. F. Adelsbach of Kingsburg, who is a deputy state organizer in this work. The movement is having large increase in the raisin section.

IN all the history of organizations for farmers, there has never yet been one that attained the phenomenal growth of the Farmers Union. This organization is less than six years old, yet it has already a membership of 3,000,000 and is gaining steadily each week and month.

It was at Point, Raines county, Texas, that Newt. Gresham founded the first Local of the Farmers Educational and Co-operative Union of America, for that is the name of the organization concerning which we are writing. Because the cotton market was very bad and the prices received for the product were below the cost of production, it was deemed necessary to have some sort of organization among the cotton farmers, and the result is the Farmers Union, as we know it today.

In the South, the cotton industry has received a new life, so far as the producer is concerned, for he now receives, in nearly every instance, a price that justifies him in continuing the cultivation of that staple, a condition that did not prevail before the producers, through the Union, got together and sent a consignment of their cotton direct to the spinners in Manchester, England. The result of the experiment was that the growers received 12½ cents for the product instead of seven cents, as before from cotton speculators.

Hang Together.

While the Farmers Union was born and has had its greatest growth in the South, it knows no South, no North, no East, no West—it goes wherever the farmers are, for all farmers need the organization. All other lines of industry find themselves organized, but the farmer class has been slow to come into the fold. There is an old saw that "Men must hang together or hang singly." The Farmers Union has all the good features of the organizations that have gone before, with a great many new ones added; and the features in the old that proved stumbling blocks in the way have been left out of this.

Politics and religion are forbidden discussion in the hall where the Local holds its meeting. Only the purposes of the Union, ways, means, objects, etc., are to be dealt with in a meeting and the plan of going into politics to achieve an end is absolutely forbidden. The Union is a secret order, with its signs, pass-words, grips, etc. This makes it possible to keep out those who are not desirable as members, and gives it a dignity and tone much to be admired. Some have offered objection to the Union because of the secret feature, but there is no reason for complaint here. It is secret only in the sense that its business and affairs are to be kept from those who should not know the inside workings of those who have combined to plan, in a legitimate way, against certain conditions which make farming sometimes unprofitable. It is secret only in the sense that the affairs of a firm are kept secret, or that family matters are secret. Persons holding religious scruples against secret orders, will find in the Union, if they investigate, a sort of secret society they can well admire, for the man or woman who lives up to the teachings of this institution will indeed earn a large reward from Him who sits on the Throne before which all men come.

Who.

Any white person, over the age of sixteen years, male or female, of industrious habits, who believes in a Supreme Being and is of good, moral character, who is a farmer, farm laborer, rural mechanic, school teacher, preacher, physician, and who is not engaged in banking, merchandising, practising law, or belonging to any trust for the purpose of speculating in agricultural products, provided the owning of bank stock by an actual farmer shall not be construed as making him a banker so long as his principal income is from the farm, and newspaper men, by taking a special obligation, may become members of the Farmers Union.

A fee of \$2.00 is required upon joining, and national dues are 15 cents per quarter. In addition to this, the local dues are such as may be fixed by the Local, each for itself. Women in no case pay fees or dues. Officers are elected in the usual manner, but at any time, if one should prove not worthy of the trust placed in him, he may be recalled. The right of initiative and referendum is one of the principals practiced by the Union. Local Unions may be chartered with not less than five members, but never yet has one been organized with so small a number. Cases are common where the charter list contains from 100 to 200 members.

Stayers.

In California the Union first took root at Kingsburg, Fresno county, something like three years ago. It was a hard, long fight, and those who were the first to see the value of the Union and to form their Local were persistent in their staying qualities, or perhaps the Union would ere this have faded from California, rather than, as is the case today, making the most remarkable growth of anything of its kind ever known.

State Organizer.

Last November the National Executive Board, in answer to the call of the few pioneers in Kingsburg, sent as State Organizer for California, Hon. W. W. Welch, of Mississippi, who has made his home and established state headquarters in Kingsburg. Prior to his coming to this state Mr. Welch was the State Business Agent for the State Union of Mississippi, and gave up that position only because the poor health of his wife (who passed to her reward only a few days ago) demanded a change of climate. Her physician recommended that she come to California. Hence the presence of our State Organizer, who has done wonders in the way of waking up an interest that makes it possible for the Union to spread like wildfire.

In less than three months, more than 2,000 members have joined the Union in three counties: Fresno, Kings and Tulare. There are now close to 3,000 members in the state.

Markets Are Not Stable.

One of the chief reasons given for the wonderful growth of the Union in California lies in the fact that the late crop of peaches and raisins is being "held over" by the growers, with no prospect of getting even enough out of them to pay the cost of production. This caused the growers to look to the Union as a possible way of escape. The raisin market has been played with by the packers until it is so very unsteady that many Eastern buyers will not invest in California fruit and raisins for the reason that they do not know how prices will be within the next 24 hours. The stability of prices on our kinds of fruit, was and is utterly destroyed. The Farmers Union, in this case, proposes to establish the prices at a point where it will be profitable for the growers and at the same time encourage the retail dealers in the East and Middle West to stock up more freely.

Why.

It is freely asserted that in many of the larger cities in the East the retail stores carry very little if any California dried fruit and raisins. The reason is set forth above. There is no reason, if the market is properly handled, why the entire crop, now a drug on the market so far as the growers are concerned, should not be unloaded on an open and ready market. Letters have been received from people in several Eastern states, asking what was the matter with the California raisin crop—was there a failure or what was it? The inquiring ones were unable to buy raisins at any price at their retail stores, hence the query.

Not So Small.

It is the purpose of the Farmers Union to take hold of the problem at this time. The Union owns and controls more than 5,000 warehouses in the South and Middle West. The plan is to ship, as a starter, 10,000 tons to the several warehouses in the larger cities, and then to send agents out to dispose of the product to retailers, and if the retailers will not buy, then to the consumer direct. Some investigation has been made along this line, and it is believed the scheme can be carried to a satisfactory conclusion. The tricks of the speculators are many when it comes to causing delays and annoyances to those who would market their own product, thereby ignoring the middleman and the broker, but there are those in the Farmers Union who are "wise" to all these and while some annoyances are expected in connection with the present scheme, it has been resolved to stay with the ship until victory shall crown their efforts. The Farmers Union label is to be used on all shipments, and all goods are to be packed under it. It is calculated that this will be of material assistance in getting the goods through, for all Union men are to be appealed to to assist in the work of bringing Union goods to the front.

Federated Warehouses.

Under a plan recently adopted all the warehouses of the Union in the United States are to be federated. This will mean a wonderful advantage to all Union members. Under that scheme it will be possible for a member to deposit his product in the

DEAD CITRUS WOOD

Is more or less prevalent in every orange and lemon grove, i. e., trees that are unprofitable. How many such have you in your orchard? Would it not pay you to put paying trees in their stead?

Your Home Grounds

Should contain at least a few trees of the better varieties of oranges and lemons. For this purpose we have some exceptionally fine trees to offer, being grown as specimens. Possibly you would like to plant a few citrus trees about your home this season. If so, will you do us the favor to correspond with us about it?

Citrus Fruits

Historically, Horticulturally, Commercially.

Our new booklet gives more valuable information about varieties, methods of planting, cultivating, pruning, picking, packing and shipping than anything of its kind ever issued. Sent anywhere for the small sum of 25 cents. Correspondence a pleasure.

The San Dimas Citrus Nurseries

R. M. Teague, Proprietor
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Our **Hydrated Lime Department** is constantly gathering practical and scientific data on use of **Hydrated Lime** as soil **Fertilizer, Dust spray, Etc.** which is at your disposal. References furnished showing great **Efficiency** and **Economy** in its uses. Correspondence solicited. Write for sample and prices to

The Holmes Lime Co.

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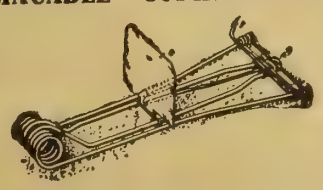

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Z. A. MACABEE, LOS GATOS, CAL.

Orange Trees For Sale

Dormant buds, Navel and Valencia.

J. S. Killian, El Monte, Cal.
Phones: Sunset, 8x4. Home, Red 31, or,
L. C. Rice, Tropico, Cal.
Phone Sunset Glendale, 263

FOR SALE

Choice two-year orange seed-bed plants—sweet stock. Call or address
F. J. LOCKE, 27 Stockman Ave. Alhambra, Cal.

Union warehouse, and if his bank will guarantee the quality of his goods, he will be able to draw three-fourths of the market value at once, the balance to be paid him upon the sale of the goods. These warehouses are to be under the management of a Board of Control of three men, each of whom is to be under $10,000 bonds. The money is in no case to pass through their hands, but all financial matters will pass through the bank indicated by the man who deposits his products in the Union warehouse. This plan has been some time in working out, but the national officers feel that the time has come when they will be able to carry it out, and within a very short time, it is expected that announcement will be made that the federated-warehouse is ready for business.

Hope of the Farmers.

In Central California nothing is receiving the attention that has been attracted to this movement. The hope of the farmers and the salvation of the country seems to be within the Union, and at the rate of increase in membership being experienced, it would seem that it shall not be long until the day of redemption for the farmer is at hand.—O. F. Adelsbach, Kingsburg.

An Agricultural High School

We are pleased to give the following statement of an effort which we trust foreshadows many similar ones in this state. It is written by Mr. Mark R. Jacobs, principal of the Gardena High School, which is under the control of the Los Angeles School Board, and is among the first efforts of the kind in the public schools of the state.

IN REPLY to your inquiry relating to the study of agriculture in the Gardena High School, I wish to state that as yet we have done little more than to formulate in a general way the plan we propose to follow. A high school education, as a rule, points the young man to the city as the most promising place to establish his life occupation. We propose to combat this idea, or at least to educate our students in such a manner that those whose lot it is to till the soil may find their work more pleasurable through having infused into it an intellectual and esthetic element. Is it really quixotic to assert that the day is not far distant when farming shall be classed along with the professions?

During the past term our students have done a considerable amount of practical work which they entered into with zest and performed apparently with a great deal of pleasure. They drew up plans for beautifying the school grounds, laid out walks and set out trees about the school, and this week have just finished putting in a half-acre lawn in front of the school building.—Mark R. Jacobs, Gardena.

The Gardena High School at present, has about three and a half acres of land, part of which is under cultivation. During the coming year the Board of Education of the city of Los Angeles will spend twenty thousand dollars in acquiring more land and equipping laboratories. General Science, a laboratory course treating principally of the fundamentals of plant life, is being given as a ninth grade study this year for the first time. This will lead up to agricultural botany in the second year, inorganic chemistry and the chemistry of foods in the third year, and physics and farm mechanics in the fourth. With these subjects, out-of-door work will be given whenever practicable. Next year we hope to introduce carpentry, domestic science, and poultry raising in a small way. Along with these we shall offer the usual culture subjects such as English, history, mathematics, music, drawing, etc., believing that the combination of the practical along with the disciplinary and esthetic subjects will result in a course of study better suited to the needs of the high school student than is ordinarily given.

EGYPTIAN COTTON IN COACHELLA VALLEY.

Of my two small plantings of Egyptian cotton, one was five weeks late and the other eight weeks late. I take the first of March as the most suitable time to plant. It did not mature all the bolls but it made a firm growth. I have picked different stalks that produced three-fourths of a pound of seed cotton, with enough undeveloped bolls to make it a full pound. As there would be something like 3,000 plants to an acre, and giving each plant the proper distance, it can be seen that it would produce about 3,000 pounds an acre, making two 500 pound bales of lint cotton. If the crop will average even one bale an acre, we have a good paying crop; one that, moreover, requires but little water, no irrigation after the first of September, and but two to three cultivations. It is planted about the first of March. It requires about five pounds of seed an acre if planted by hand, and about 15 or 20 pounds if planted by planter. Make the rows 4½ feet apart and plant two feet apart in the rows. Irrigate before planting, but do not irrigate after planting until the plants are up, as the seed rots very easily.

Why not make the semi-arid Southwest a cotton-growing country, with a cotton factory at Los Angeles, and this valley and the Imperial and Palo Verde country to grow the cotton? We have ideal conditions to produce a staple crop.—A. W. McGill, Thermal.

Nitrate of Soda

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NITRATE AGENCIES CO.
64 Stone Street, New York
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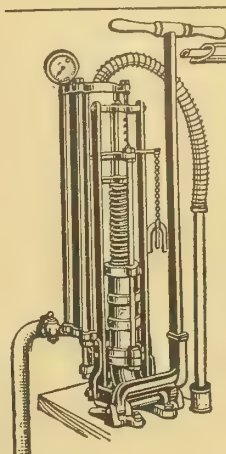
Orders for All Quantities Promptly Filled—Write for Quotations



This is the Pump

that can be operated continuously at high pressure without the muscle-racking, exhausting, "man killing" exertion required for ordinary pumps. High pressure spraying means more and better fruit—and consequently more money for the grower.

Bean Magic Spray Pumps

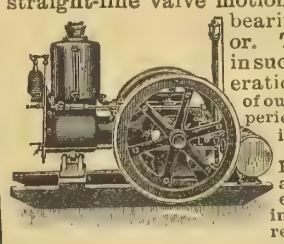
are different from other pumps. They run smoothly and easily without clogging, and one man keeps up high pressure for two lines of hose. And they **save one-third the labor.** The Bean patent spring does it. The operator does half the work at each stroke of the handle, and works against but half the pressure indicated on the gauge. A trial quickly removes all doubt.

Our illustrated catalog No. 21 describes ten sizes of handpumps, and contains much valuable spray information, and formulas. Catalog No. 18 describes Power Sprayers. Both books sent free. Write for our special offer; state number of acres and kind of fruit.

BEAN SPRAY PUMP CO.
212 West Julian Street
San Jose, Cal.

Stickney Gasoline Engines ARE THE BEST

Why? Because of the outside igniter, modern open cooling system, straight-line valve motion and ball-bearing governor. Thousands in successful operation because of our years of experience in building the best. Send for our Free Catalog and our Catechism telling fifty-seven reasons why



Stickney Engines Are the Best.
Seven sizes: 1½ to 16 H.P. Stationary and portable.

De Laval Dairy Supply Co.
SAN FRANCISCO - LOS ANGELES - PORTLAND - SEATTLE

Seed Barley 60 cts. a bu.

As per Salzer's Catalog page 129.
Largest growers of seed barley, oats, wheat, speltz, corn, potatoes grasses, clovers and farm seeds in the world. Big catalog free; or, send **10c** in stamps and receive samples of barley yielding **173** bu. per acre, Billion Dollar Grass, Oats, Speltz, etc., easily worth **$10.00** of any man's money to get a start. Or, send **14c** and we add a sample farm seed novelty never seen by you before.
THE SALZER SEED CO., LaCrosse, Wis.

Bees and Their Care

BEES AID THE GROWERS.

"GIVE THE bee a chance and it will literally break the boughs of your trees with the weight of fruit."

Frank G. Odell of Lincoln, Neb., bee-master, who gave a series of demonstrations with 50,000 bees at the National Apple Show in Spokane, in December, made the foregoing observation in the course of an interview, discussing bee-keeping, scientific agriculture and fruit growing. He said:

Expert Assistant.

"The bee is the expert assistant of the horticulturist and the farmer. So indispensable are its functions in the pollination of fruits, vegetables, cereals and grasses that its activities may be said to lie at the foundation of all successful agriculture. Nature has ordained one supreme law, that of creation, the perpetuation of the race type. This law, universal in its application and absolutely identical in its form, obtains in the plant world as in the animal world. The luscious pulp of the fruit is the envelope, the package, the strong box, devised by nature to protect the seed within from injury and render it susceptible of germination so that the type may be reproduced in all its perfection.

Aids Pollination.

"The bee, like other insects, effects incidental pollination of flowers in its search for nectar; but its great value to the fruit grower lies in this, that it goes to the flowers specifically to gather pollen, literally by the carload, in the hairy baskets on its legs, hastening from bloom to bloom, rolling and packing and literally rioting in the golden dust, pregnant with the microscopic germs of plant life, until the golden pellets are packed away in its hair baskets, to be carried to the hive for storage as an indispensable portion of the food of its young during the winter months to come.

"It requires no expert knowledge to comprehend how perfectly the bee thus performs the office of pollination. Indeed, it is nature's chief agent in this indispensable work. No seed, no fruit, is the universal law. Here is the only insect useful in all its habits, having a fixed habitation accessible to man, dependent upon the pollen of every variety of flower as an indispensable portion of the food of its young, and going to the bloom specifically to gather that pollen, thus making possible the marvelous fruit crops in Washington and the Pacific Northwest. That is why I say, give the bee a chance and it will literally break the boughs of your trees with the weight of fruit.

"Delve into the realm of applied mechanics or structural engineering and your research is incomplete until a lesson is conned from the structure of the honeycomb with its marvelous strength as compared with the fragile nature of its fabric. No more marvelous structure exists among the myriad marvelous works of nature. This waxen fabric, derived primarily from liquid honey converted into wax in that marvelous laboratory of the bee, formed by some mysterious instinct or intelligence into the very form of all others designed for economy of materials, space and extremity of strength, passes beyond the measure of human skill in its perfection.

How Wax is Made.

"Somewhere between 1744 and 1768 it was discovered that wax is produced between the plates on the lower side of the worker bee's abdomen. It was John Hunter, the celebrated anatomist, who discovered just how the bees secrete wax, and thereby settled a vexed question. He communicated his discovery in a paper read to the Royal Society of London, February 23, 1793.

"Wax is produced at the will of the bee, and when called for by the necessity of the hive. The wax-producing bees obtain a somewhat higher temperature, usually by close clustering, though they sometimes hang in slender festoons and chains.

"Wax is not chemically a fat or glyceride, and those who have called it 'the fat of bees' have grossly erred; yet it is nearly allied to the fats in atomic constitution, and the physiological conditions favoring the formation of one are curiously similar to those aiding in the production of the other. We put our poultry up to fat in confinement, with part light; to secure bodily inactivity we keep warm and feed highly. Our bees, under nature's teaching, put themselves up to yield wax under conditions so parallel that the suitability of the fattening coop is vindicated.

"Chesire in his investigations says that on the inner side of the eight plates lining the lower side of the abdomen are about 140,000 glands, from which the wax is secreted as a white liquid, which hardens on exposure to the air.

"It is evident from the best authorities that the form and method of wax secretion were known as early as 1691, and possibly at even an earlier date. The extraordinary economy of the use of wax is shown by the fact that the hive of 8 to 10 gallons capacity will yield but about two pounds of wax when melted. According to Dr. Denhoff the thickness of the sides of a cell in a new comb is only the 1-130th part of an inch. Chesire states that he found some that measured only 1-400th part of an inch.

Beats Us.

"Nothwithstanding the fragile nature of the honeycomb it is still sufficiently strong to carry the relatively immense load of sweets stored in its cells. The perfection of insect labor is shown by the fact that human ingenuity has never been able to make artificial honey-comb. The tales concerning manufactured comb honey are figments of the imagination. Consider that any machinery devised for manufacturing honeycomb would make all parts alike in similar sections. Examine carefully two or more one-pound boxes of honey at your groceries and you will note differences in the finish of cappings and building the comb fast to the wooden casing, which at once convince you of the genuineness of the article.

"Not only does the bee excel as an artisan, but also as a chemist. Its honey stomach is the most delicate chemical laboratory in the world. Here the nectar of the flowers is transformed from a highly diluted sweet, susceptible of speedy fermentation, into the most perfect food product known. This chemical change, inverting the sugar, according to the chemist's phrase, is undoubtedly accomplished in the laboratory of the bee during its short flight from the field to the hive. This chemical reaction is so delicate that no laboratory aside from that of the bee can successfully accomplish it.

Monarch of All.

"Consider the Queen bee, the sole and undisputed monarch of her empire. Endowed with powers superhuman, she governs without exercising visible authority, rules without coercion. Her subjects go about their tasks with that cheerful zeal which can only accompany toil fully recompensed, and offer to men, torn into factions of contending opinion, an ideal social state, where every member of the community is a toiler and all are prosperous, peaceful and content.

"The queen bee is sole mother of the race. 'All life from the egg,' that great biological axiom, is exemplified in the hive. The queen mother passing rapidly from comb to comb, places a single egg in each selected cell, laying the inconceivable number of 3,000 to 4,000 in 24 hours. This labor represents in a single day the expenditure of physical substance equal to two and one-half times the weight of her body. Consequently she does not even feed herself, being always accompanied by a devoted group of maids of honor, worker bees, whose office it is to bring in profusion the choicest predigested food to their ruler. Not the least of the wonderful powers of the queen is that of predetermining the sex of the offspring which shall result from eggs precisely alike under the microscope, but which, in turn, may eventuate in a worker, drone or queen, as their mother may elect."

It is well to keep an eye on robber bees, especially, when there is a let up in the flow, but the exercise of care in this respect will prevent any serious trouble.

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Write me today.
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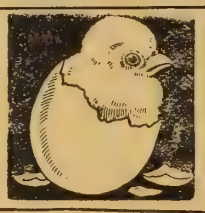
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MORE LAWS FOR BEE-KEEPERS.

The machinery has been started in California to give the apicultural industry some legislation that will set the old don't-care-a-rap fellows to thinking. The present foul-brood statute is to be amended, provided the work Mr. Ralph Benton, of the State University, has been formulating succeeds in meeting the approval of the Solons now assembled at Sacramento. Mr. Benton is aiming to place the inspection of infested apiaries more under the control of the authorities of the State University, at the same time allowing the appointment of county foul-brood inspectors to remain in the hands of the supervisors of the several counties as at present. It will be more binding on the supervisors to make appointments when petitioned to do so. The University Inspector of Foul Brood will have co-extensive authority with the county officer, and he will have power to appoint deputies to assist in the work. This will allow of scientific investigation; at present it is said some of the inspectors are ignorant of what a genuine case of foul brood is like, as is so often the case when politics has a hand in the filling of scientific positions. The amended law will weed out poor or bad inspectors.

There is one thing about the amended statute, as drafted by Mr. Benton, I do not think should be put in force for some years to come, and that is the provision making it compulsory for all queens and their attendant bees passing inspection by the foul-brood inspector; in fact, they must be accompanied with the certificate of inspection, as are consignments of trees and plants, before they can enter this state; and if not so certified they must be placed in a hive for sixty days, and be subject at the expiration of that period to final inspection by the officer. If no sign of foul brood or other disease inimical to the best interests of California beekeepers has manifested itself, then the bees and queens will be admitted.

My objection to this is that, owing to the fact that as many Eastern states have no properly constituted officer who could give a queen-breeder a clean bill of health for his bees and queens, it would be a hardship on a reputable breeder to hold his bees up on that score. Then I believe it would be an injury to a bee-keeper and the exporter as well to have bees held up at the post office or express office until some far-away inspector could be brought upon the scene to poke the poor bees in the ribs and look down their throats to see what they had for breakfast, or to find how their alimentary system was. Mr. Benton agreed with me that, while the provision would ultimately be beneficial to our bee-keepers, it was better to wait a few years until a like law was enacted in the Eastern states where bee-keepers raise queens, before this provision should be in full force and effect. So I believe he will have the proposed law so changed.

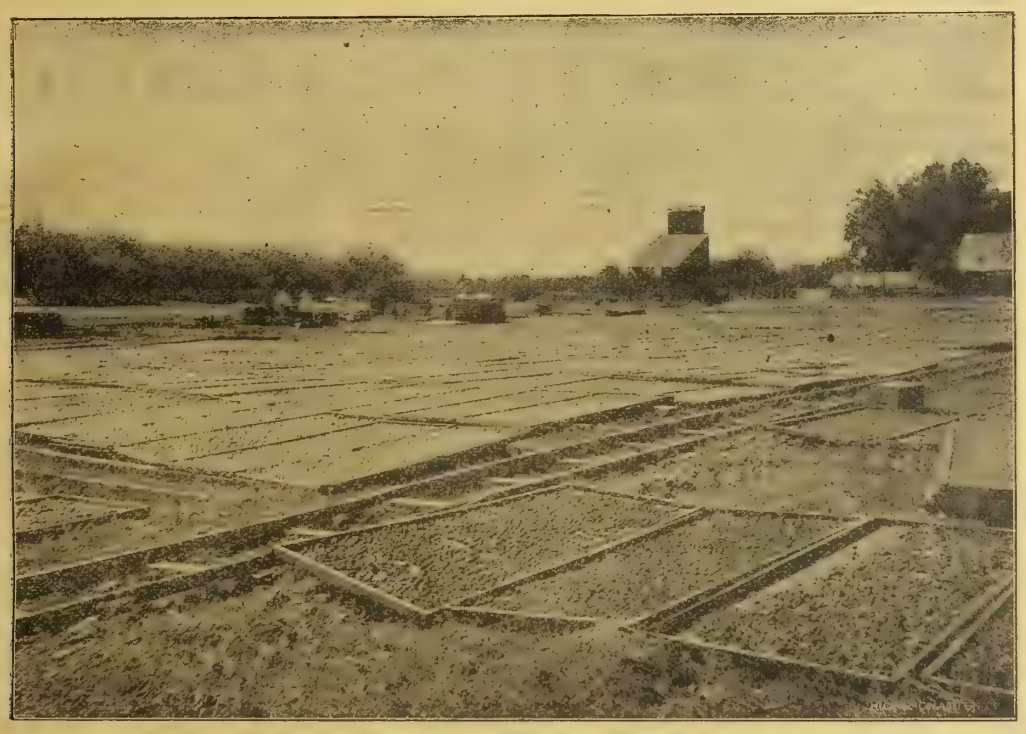
Then he makes provision for an annual meeting of foul-brood inspectors. This is good; but I am afraid the interest will die out in a few years. By making such meeting a part of the annual meeting of the State Bee-keepers' Association it will provoke more interest and be far more beneficial. In fact, I believe it will bring about a greater attendance at such meetings. The new law, if passed, will allow for the printing of the report of proceedings of inspectors' conventions —a good thing in itself, but it would also be good, and perhaps better, as I suggested at the Monterey meeting, if the State would make provision for the printing of the proceedings of the State Bee-keepers' Association. Such aid is already given the horticulturists, viticulturists, mining interests, I believe, and the horse-racing outfit —the latter a useless waste of the people's money.

In order to carry on the work to be placed in the hands of the University pathologist, an appropriation of $2,500 is asked. This sum is modest compared with some appropriations that are demanded from the public treasury; but, taken in connection with the salaries of the various county inspectors, the amount to be paid for stamping out foul brood will be considerable. Yet as the honey industry is no small one in this state, and materially adds to our prosperity, we can well afford all that it costs. There are thousands of leaks that, if stopped, would allow beneficial enactments to be made for many purposes. I mention this for the reason that I have always been opposed to piling new laws into our statutes and making needless appropriations for this, that, and the other thing, to burden a long-suffering tax-burdened people. But the bee-keepers have never asked much; they now seek an intelligent means of overcoming an evil that has long embarrassed them. The proposed law is worth trying. May it be passed; and should it prove ineffectual it can be changed.—W. A. Pryor of Oakland, in Gleanings in Bee Culture.

The editor of Gleanings adds: "As a matter of fact, we do not see how the inspector, no matter how competent he may be, can determine whether a queen with her attendants in a cage has disease germs in her alimentary canal. Nothing but dissection would show this, and this, of course, means the killing of the queen. Even if the inspector were disposed to allow the passage of such queens, the delay in the postoffice until such inspection could be made would very probably result in the death of the queens especially in the inaccessible mountain districts.

Some years ago we conducted a series of experiments, taking queens from foul-broody colonies and putting them in healthy ones. In no single instance was foul brood transmitted in that manner. We seriously question whether it is possible to carry disease through a queen, especially after she has been placed in a new environment on new food for a period of several days. Indeed, the McEvoy treatment itself, which is now recognized as a standard cure, applies no treatment to either bees or queens other than to remove them from their honey and combs and give them new food. That is precisely what the queen-breeder does when he picks up a queen and a few attendants and puts her in a mailing cage. Hence it follows that, if the queen should be taken out of a diseased colony, and sent through the mails, such queen could not carry the disease. In any event, no reputable queen-breeder would think of taking a queen from an infected colony and sending her to a customer.

We see no good reason, therefore, why queen bees and their attendants in an ordinary mailing cage should be inspected before delivery to the consignee."



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EVERY GROWER AND SHIPPER

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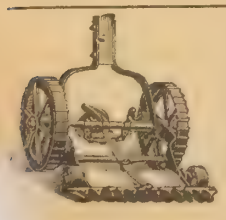

THE CLIPPER

Will cut tall grass and weeds and do all the trimming along the walks and drives. Your dealer should have them—if he has not drop us a line and we will send circulars and prices.

Clipper Lawn Mower
Dixon, Illinois.

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Olive Cuttings.

Will cuttings grow fruit true to the tree from which they are taken? How long before trees grown from such cuttings will bear? What are the most prolific bearers which at the same time yield the choicest fruit? Is the Mission a free stone? When is the proper time to gather for pickles.—M. M.

The olive tree is propagated in two ways, the nursery men using the tip cuttings of four to six inches long and rooting them on beds with bottom heat. The rancher grows them from ten to fourteen inch cuttings. They are calloused in the ground or sand then set into nursery rows and grown as fast as possible. About half will be ready for the next years transplanting. The remainder will be ready the second year to go out into the orchard. The most of a ripe Mission or any of the commonly grown varieties of olives separate from the pit when the berry is fully ripe. When the pit can be squeezed out they are "free stones." Most people prefer the ripe olive. The green is the better keeper, however. Cuttings will always come true to the parent tree.

Fox Terrier.

I have a thoroughbred fox terrier which is troubled quite badly with worms. I have tried different kinds of vermifuge, but it doesn't seem to rid her of them. I have also quit feeding her anything that is sweet. She is about a year old now.

Your paper is undoubtedly the best home, farm and orchard paper printed. —E. G. L.

Give her an enema of strong salt solution, little danger from being too strong. Use warm and with a fountain syringe all that she can possibly retain. Repeat second day and again in a week and again if you ever think it is necessary. The variety of food has little or nothing to do with it.

Contracted Hoof.

I have a colt, 9 months old, which developed a few months after its birth, what I think is contracted hoofs, on both forefeet.—J. H. I.

Your description does not make the condition very clear, but I should judge from your drawing that she walks up on the end of her toe; if so I should suspect that there is an anchylostomiasis of the lowest joint which makes a condition similar to a ringbone.

The tendon on the back of the leg may be contracted (shortened) which tips her up on the end of her toe.

You had better make a closer examination and report later, as it may have to have a surgical operation.

Oleander Scale.

The insect on the magnolia leaf received from a subscriber at Irwindale is the oleander scale, Aspidiotus hederae. Fumigation, of course, would be the most satisfactory treatment for this scale. As to the dosage which the magnolia foliage will stand, will say that I am of the opinion that there would be no danger in using even a stronger dosage than is used on the citrus trees. In case the trees are very large or if it is more convenient for the owner to spray, I would suggest spraying with 3 per cent distillate.—H. J. Quayle, Entomologist, Plant Disease Laboratory, Whittier.

Vinegar from Grape Juice.

The Cultivator recently had query as to making vinegar from bottled grape juice. The query was referred to the chemistry department of the State University which answers as follows by Hans C. Holm, assistant in zymological technology:

"In order to change grape juice into vinegar it is necessary to ferment it as completely as possible. This may be accomplished by adding strongly fermenting grape-must to the juice. When the fermentation has come to a standstill the fermented juice should be inoculated with vinegar bacteria.

"In order to prepare a starter of these bacteria proceed as follows: Take one-half pint of a good wine. Dilute it with about one-third this quantity of boiled water. Place it in a flat porcelain dish, and cover with a plate to keep out the light, in such a way as to allow free access of air. Place the dish containing the diluted wine at an even temperature of about 18 degrees, centegrade, (64 degrees Fahrenheit.

"In two to three days the surface of the liquid will be covered with a film of the vinegar bacteria and it will have a pleasant, strong smell of vinegar. Sufficient starter for the inoculation of about 200 liters (50 gallons) of wine will be obtained in this way. The starter should be added to the wine, which is placed in puncheons. The bungholes are left open, and the puncheons filled to about two-thirds of their capacity. If the wine is kept at a moderately warm and even temperature the vinegar will be ready in from two to three months. If the temperature is cold and uneven it will take longer."

Small Supply of Milk.

I have a fine milk goat fresh a month ago, that was in her third year when bred for the first time. She brought a single kid, small and feeble, which she carried 157 days—ten days longer than some of my goats. It was not till within twenty-four hours of his birth that she showed she was certainly making bag. We could not be sure of her condiiton. She has very large teats and a good type of bag, but gives only 1½ pints of milk instead of several quarts. The milk is very rich.. Can you tell me whether she has a fair chance to prove a good milker the next time she comes in? She is a large goat, but eats very little at present. Would the exhausted condition of the sire at breeding (for it was accidental, at a wrong time) be responsible in any way for the disappointing results?

Her younger sister, the fat goat about whose reduction Mrs. Sherman advised so well last fall, is now the anxious mother of a strapping pair of kids; and though she eats enormously they keep her thin.—A. R.

While I have never handled goats, I have had sows, cows and mares. Now theoretically we should breed better animals by not breeding the dams too young, yet when we do not

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Plant Germain's Oregon Evergreen Sweet Corn

Germain's Improved Chilian Watermelon

This magnificient watermelon is so popular in Southern California that it has practically excluded all other varieties. This melon is almost round in shape, dark green, modeled with darker green, rind exceedingly thin, not over a quarter of an inch in thickness but hard. A splendid shipper. Flesh deep crimson clear through, crisp and of delicious flavor.

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Big Leaf Jersey Kale

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Now is the Time

To Plant

Eucalyptus Trees

I have about 200,000 seedlings left, price $7.50 per 1000 f. o. b. Corona. Varieties, Rostrata or Red Gum, Corynocalyx or Sugar Gum, Rudis or Desert Gum, Tereticornis or Grey Gum.

Robt M. Wollitz, Corona, Cal.

Marc...

...w at 24 months, a mare at ...ld, we have the same trou-
MORE LAV...s goat shows. The milk
The mach... not come readily and the
California ...eceives a shock that it is hard
dustry s... come. The breeding too young
the ol... gives a weaker offspring and
think... it seems to be best for the dam.
ut... have known of many cases like this
W... and if it was a cow that had been
U... accidently bred I should have given
her a drench of epsom or glauber salts as soon as I found she was coming in, to help relaxation. I think she will come all right if she is helped along a little. I should give her a physic at once and follow it with feeding of moist bran and after the second day add a handful of oil cake meal twice a day to her feed until she begins to eat well. Then gradually put her off on the regular feed tioned... the rest of the goats. It may be sp...more convenient for you to buy a few pounds of one of the standard brands of stock feeds. These will answer, as the oil meal is their helpful part put up with some aromatics that the animals like to eat. I am glad to hear the other goat came out all right and I think this one will do the same.—M. E. S.

Fig Cuttings.

Is it advisable to plant fig trees (Calimyrna) grown from young trees or from nursery cuttings?—M. A., Reedley.

If one desires to secure trees as rapidly as possible, fine trees may be grown from small branches even from nursery trees. However, where one can secure sucker wood from larger trees, it is quicker to root and quicker to give a large tree. Some even use only a single bud cutting.

Galled Shoulders.

Please tell me through your paper, what I can use to prevent galling of my horse's shoulders. I have tried gall remedies, I cut holes in the pad, changed collars, even turned her out on pasture until shoulders were well, but they seem to irritate and begin bleeding the first day's work.—Subscriber, Calabasas.

The best remedy we ever saw for the tender shoulders is a perfectly fitting collar without pad. Stick to your harness maker until he gives a good collar which fits the shoulders at every point. We have used all kinds of pads, and there are some horses on which they seem to work better than the collar alone, but as a rule, the perfect fitting collar is sufficient. Then wash the shoulders with cold water immediately on finishing the work; even at noon we have found that where the shoulders are tender it is well to throw off the harness and dash cold water, thoroughly drenching and washing out all the perspiration. Wipe lightly with cloth and have shoulders dried before the collar is put on after luncheon. At night wash with salt water, or some prefer strong alum solution.

White China Geese.

Several subscribers have written asking information regarding where White China geese may be secured.

Any subscriber who keeps them or knows of their being kept in this state, will confer a favor by writing this office.

Alfalfa Seed.

How much alfalfa seed is required to plant one acre of ground on adobe soil?—J. M., Stockton.

Twenty-five pounds will give you a good stand.

Drying Figs.

What preparation is necessary for the successful drying of the common fig? I have tried several times and failed.—Subscriber, Claremont.

You do not say what the trouble is with those which you have tried. The ordinary method consists in taking them as they drop thoroughly ripe from the tree and drying on trays in the sun. Once they are dried they are taken before packing in cartons and passed through boiling solution of salt which softens and destroys any insect alive which may be infesting them. It is possible your figs may have soured on the tree before being ready for drying. Some varieties are very persistent in this fault.

Grape Fruit Stock.

I have 2000 grape fruit trees a year and a half old. Half of them were budded to Valencias last fall, and I have just cut the tops off six inches above the buds. They have started nicely. When shall I bud the other half? That is, what is the earliest time possible?—E. A. B., Anaheim.

The spring buds may be set just as soon as the sap is flowing freely enough so that the bark will slip freely. It is possible on strong growing trees, this may be done at once. This you will determine by a trial. The fact that the other trees are growing nicely and have already sent out three inches of young growth, would indicate that the soil is warming up so that budding may be done at once.

Eucalyptus in Poor Condition.

What is the matter with my scarlet Eucalyptus? Was set in park way three years ago, water stood on lawn close to it a good deal during the

Trinidad Lake Asphalt

—the time-tested weather-resister used on streets and roofs for over a quarter of a century—is the stuff that makes

Genasco Ready Roofing

Genasco is the stuff that makes your roof proof against leaks and repairs. There is no mystery about what it is made of. You know Trinidad Lake Asphalt—and you know it makes roofing that lasts.

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Transplanted in flats of 100 each. We prefer orders of 1000 rather than 10,000; outside limit 20,000. Our trees are of the highest standard in quality. Correspondence invited. Our Booklet telling when, how, and what to plant free to our patrons only. Address

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We will sell you pipe that can be used for any purpose. ***Satisfaction guaranteed*** or money returned. We handle all sizes of standard pipe and casing. Shipments made on same day as order is received. Price of pipe is low now. Write for our prices.

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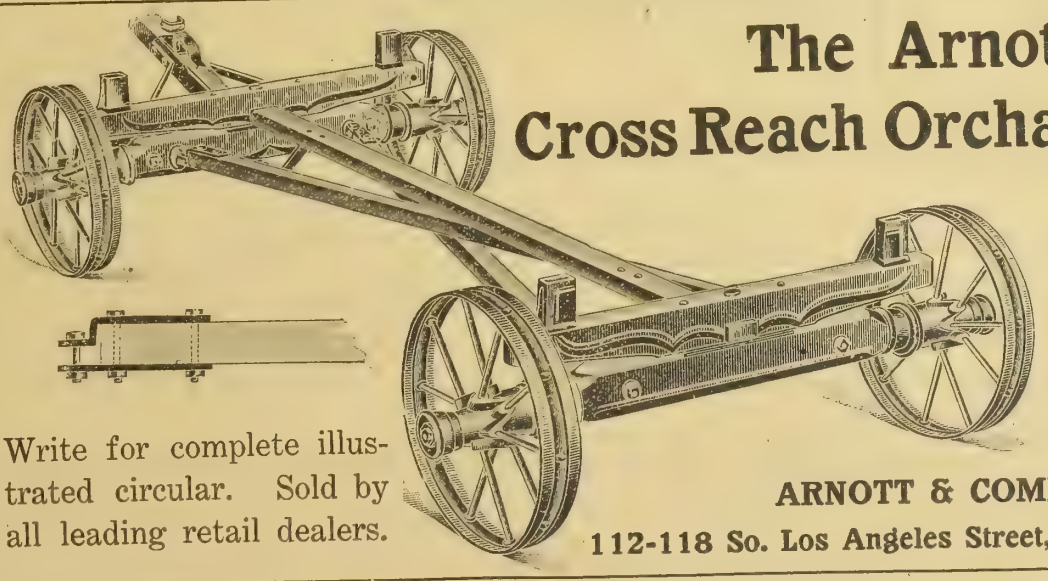

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The use which can be made of a truck of this kindwill be apparent to any practical orchardist. By means of the cross reaches the truck can be turned very shortly, and any obstruction or tree that the front wheel will clear the rear wheel will clear. Designed with a view to strength and rigidity. Low wheels with 3¼ in. cast skeins. Tires either 4 or 5 in. in width.

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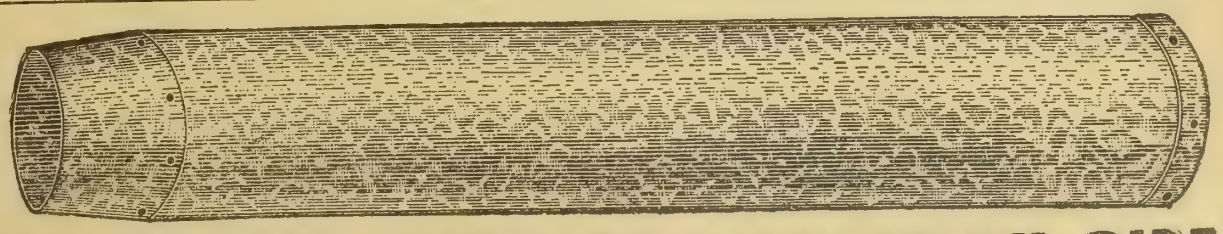

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SAVES WATER, GRADING AND TIME

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DON'T BUY GASOLINE ENGINES UNTIL YOU INVESTIGATE "THE MASTER WORKMAN," a two-cylinder gasoline, kerosene or alcohol engine, superior to any one-cylinder engine; revolutionizing power. Its weight and bulk are half that of single cylinder engines, with greater durability. Costs Less to Buy—Less to Run. Quickly, easily started. Vibration practically overcome. Cheaply mounted on any wagon. It is a combination portable, stationary or traction engine. SEND FOR CATALOGUE. **THE TEMPLE PUMP CO., Mfrs., Meagher and 15th Sts., Chicago.** THIS IS OUR FIFTY-SIXTH YEAR.

Classified Liner Columns

Rates 1½ cents per word per issue. No ad. accepted for less than 25 cents. Our classified columns are the clearing house for the readers of the Cultivator. Here you can insert an ad. for the small sum of 1½ cents per word per issue, and be sure that it will be read by thousands.

FARM LANDS FOR SALE.

L. W. JEFFERSON REALTY CO., 350 Market St., S. F., reports following sales of Alfalfa Lands, known as Hickman Land, at head of the Famous Turlock Irrigation District: W. G. McCutcheon, Coalinga, Cal., 40 acres, Julia E. Clark, of Nebraska, 45 acres. This lady and her husband only took fifteen minutes to decide after applying a ten foot auger and failing to find any hardpan. Prof. T. F. McConnell, of the University of Wyoming, agricultural department, 40 acres; Carl Pullman, of Oakland, 40 acres; Marion Gard, of San Jose, 20 acres; John Gibbs and Jas. Christie, of Knowles, Madera County, each 20 acres; Edgar R. King, Laramie, Wyo., 20 acres. The town of Hughson on the Santa Fe is to have a new depot built at once. Flack and Jacobs of Stockton, who opened up the Hughson tract of 2030 acres, sold it all inside of ten months. They have built a sixteen room hotel. The town supports a newspaper. The ladies improvement club are planting trees on all the streets. These people recognize the head of the Turlock Irrigation District as being the best place for alfalfa, oranges, lemons, and grape fruit, and the fact that the locality is free from malaria, overflow and water log, is attracting farmers, who are buying up all the good valley land under irrigation. For further information, free booklet, maps, etc., write to J. W. JEFFERSON REALTY CO., 350 Market St., San Francisco.

HALF RATES FOR MARCH—FOR only 25 cents an acre and our expenses, I will locate you on good government land, rolling, rich soil, fine pasture, about 8 miles off good railroad oil town, or on some good level land for alfalfa; plenty well water, will be under canal. $2.50 a day and our expenses, if you do not take. U. S. fee 25 cents an acre. A man or woman can take 160 to 320 acres. One man refused $1,400 net the day I located him. You may do better. **If you want this land,** bring your money and **come** to Armona, California. Write me when you are coming, Box 81, Armona, or Route 2, Hanford, Cal., JOE CLARK (farmer.)

GOVERNMENT LAND—LETTER TO inquirers—If you have $160 and want 160 acres good rich soil, fine for poultry, pasture, cows, grain and fruit, near producing oil wells, write me why you do not come to Armona via Goshen Junction, inquire at hotel for my ranch. To get place now—first come, first choice. Bargains. Under improvement plan no more cost for one year, under settlement plan you need not come back for six months, then again six months later. Plenty well water. Convenient to wood for post and fuel. JOE CLARK, Armona, Cal.

FOR SALE—ONE ACRE OR MORE
$300 TO $500 PER ACRE
One-fourth in cash, balance 1, 2 and 3 years. In the great growing Southwest. Right in line of rapid development. Water piped to each acre. Land is perfect for the production of potatoes, onions, beans, corn, alfalfa, berries and fruit. Finest place for the home. Surest advance in values. Lowest price ever placed on good land, so close to Los Angeles. Send for illustrated folder.
INGLEWOOD RANCHO
330 S. Hill St., Los Angeles, Cal.

FOR SALE—ONE ACRE OR MORE.
$300 TO $500 PER ACRE.
One-fourth cash, balance long time. In the great and growing southwest. Right in line of rapid development. Water piped to each acre. Land is perfect for the production of potatoes, onions, beans, corn, alfalfa, berries and fruit. Finest place for the home, surest advance in values. Lowest price ever placed on good land, so close to Los Angeles.
Free tickets at our office.
INGLEWOOD RANCHO.
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IMPERIAL VALLEY—BRAWLEY LOTS, Weston 10 acre oranges, melon, alfalfa tracts. I arrange daily excusions at low rates; answer your letters immediately and call when possible. Address JAMES H. SHULTS, M.D., General Sales Agt., 2100 La Salle Ave., Los Angeles, Cal.

FOR SALE—S.E. ¼ SEC. 36. 235-27 E. Near Ducor on S. P. in Tulare Co. First class orange land at $55 per acre on 6 years' time; no payments until the sixth year except 7 per cent interest annually, payable each year in advance. Will sell in 20 acre lots. J. E. FARNHAM, Hollywood, Cal.

FOR SALE—PALOMITAS VINEYARD 194 acres; 106 planted to choice Emperor, Malaga and Muscat vines, 3 to 6 years old Part or all. Half cash, balance on easy terms. MRS. M. E. SHERMAN, Fresno, Cal.

ORCHARD HOMES FOR SALE—FIVE acres and upwards; fine citrus and deciduous fruit lands on easy instalments and low interest. Write us today. WYATT & WILSON, Winters, Cal.

FARM LANDS FOR SALE.

I MAKE A SPECIALTY OF ORANGE and alfalfa ranches and exchanges. 826 Main St., Room 9, Riverside, Cal. N. R. BELL.

FOR SALE—7 ACRE CHICKEN ranch with all the stock and tools. Good location. R. DEDLOW, National City, Cal.

MACHINERY.

FOR SALE—ALL SIZES MOTORS A. C. & D. C. both new and slightly used, also electric generators. Complete pumping plants installed. BAILIE & BRANDT CO., Agents, Union Gas Engine Co., 943 N. Main, Los Angeles, Cal.

FOR SALE—RENT OR EXCHANGE, boilers and engines, gas engines, pipe and oil well casing, pumps, all sizes and makes; get our prices before you buy. A. CANNADY & CO., 691 N. Main St., Los Angeles, Cal.

FOR SALE—MEHRING MILKING MAchine with extra parts and covered pail, all in good order. WM. H. BIRD. Box 6, Compton, Cal.

FOR SALE—2 H.P. DISTILLATE ENgines never been used, a snap. MACHINERY EXCHANGE, N.W. Cor. Main & Bruno, Los Angeles, Cal.

FOR SALE—25 H.P. FAIRBANKS-Morse gasoline engine, only used a short time. 117 Bruno St., Los Angeles, Cal.

FOR SALE—10x10 BELT DRIVEN AIR compressor. Almost new at a bargain. Address P. O. Box 436, Station C, Los Angeles, Cal.

TREES.

FOR SALE—AT VERY LOW PRICES, large palms of the following varieties, Phoenix, Canariensis, Chamrops excelsis, Chamrops humilis, Cocos australis, Cocos plumosus, Seaforthia, Dracena australis, Dracena indivisa, Musa ensete, Ficus elastica, Italian Cypress, Monterey Pine, Pinus canariensis, Camphors. Must be moved at once at about cost. Satsuma and Bartlett fruit trees, also live and cork oaks, very fine and cheap. Catalogue free, mention Cultivator. H. L. BAUER & SONS, 737 S. Spring St., Los Angeles, Cal.

THE SANTIAGO FROSTLESS NURsery still has some extra fine Eureka lemon trees, choice buds, but they are going fast. There are none better. L. F. THURSTON, Proprietor. Sunset Telephone 354 Orange. Address Santa Ana, R. D. 1.

SPECIAL PRICES TO TRADE AND planters on grafted and seedling walnuts, Elberta, Muir, Lovell, Phillip Cling, Leavy Late, Lemon Cling, Satsuma plum, lemons and apples in variety. A. R. MARSHALL'S NURSERIES, Box 64, Santa Ana, Cal.

WALNUT TREES—3 YEAR OLD Seedlings from selected grafted seed of **Placentia Perfection.** Best and cheapest trees in market. G. W. SHERWOOD, Fullerton, Cal.

FOR SALE—LEADING VARIETIES PEACH and apple trees, good stock, bed-rock prices GRIDLEY COLONY NURSERY, Gridley, Cal.

GRAPE CUTTINGS.

FOR SALE—THOMPSON SEEDLESS and Zinfandel rooted grape vines—first class—$10.00 per thousand. GRIDLEY COLONY NURSERY, Gridley, Cal.

STRONG OUT DOOR GROWN ROOTED cuttings. All kinds of plants. Send for 1, 2, 3c list. GEM NURSERY, Los Gatos, Cal.

FOR SALE—CORNICHON GRAPE vines one year old, $10 per thousand, f. o. b. FRANCIS CUTTLE, Riverside, Cal.

FOR SALE—ROOTED GRAPE VINES, Concord and Agawam, 50c per dozen; $3 per 100. A. E. NELSON, El Monte, Cal.

FERTILIZERS.

NOW IS THE TIME
to fertilize for results in the coming crop.
ARMOUR'S "O.T.M.", "B.B.&P.", and "5-8-2" grow big crops and build up the soil. They have been doing it for years.
THE ARMOUR FERTILIZER WORKS, Los Angeles, Cal.

VINES WANTED.

WANTED—A FEW THOUSAND MUScat, Thompson Seedless, and Malaga well rooted vines. IMPERIAL VALLEY NURSERIES, El Centro, Cal.

ARTICHOKES.

FOR SALE—JERUSALEN ARTIchokes, the great winter hog feed. Address, FANCHER CREEK NURSERIES, Fresno, Cal.

HOGS.

REGISTERED BERKSHIRE AND POland China hogs, both sexes. C. A. STOWE, Stockton, Cal.

POULTRY

FOR SALE—WHITE WYANDOTTES, Hayes "Bred to Lay" strain. Eggs for setting, $1.50 and $2 per 15, $6 to $8 per hundred. Hens, $1.50 to $3; cocks, $3 to $5; trios, $6 to $10. Discount of 25 per cent. on hens and pullets in lots of 50 or more. Write for particulars. F. E. JUDSON, Carson Heights Ranch, San Pasqual Valley, Escondido, Cal.

BUFF ORPINGTONS—BLOOD AND breeding tells. Five years careful selection for points and laying; results, first prize pullets last year and 50 per cent. egg yield during moulting season this year. Eggs, $1.00, $1.50 and $2.00. Special prices on incubator lots. E. G. WALL, 1920 Monticello Ave., Hollywood, Cal. Phone Hollywood 1943.

HOW TO MEASURE MOISTURE IN your incubator with one thermometer, blue print with table, 50 cents. How to predict night frost with two thermometers, blue print and blank, 60 cents, both for $1.00. CAPT. C. NIELSEN, Sebastopol, Cal.

SILVER CAMPINES, GREAT LAYers, non-sitters, beautiful fowls, splendid foragers. Recently imported from Belgium. Eggs for hatching $3.50 per doz. Write for circulars. E. SMITH, 3610 East First St., Los Angeles, Cal.

LIGHT BRAHMA, FIRST PEN, FIRST Cockerel at 20th Annual L. A. County Poultry Assn. show. Cockerels from same mating $3.00, $4.00 and $5.00 each. H. J. SHOW, R. 1, Santa Barbara, Cal.

HUSKINS' WHITE WYANDOTTES won at Breeders' Show January, 1909, five regular prizes and two silver cups. Eggs from standard matings $2 per 15; $5 per 50; $8 per 100. A. W. HUSKINS, 713 Waterloo St., Los Angeles, Cal.

WHITE ROCKS—SNOW WHITE, prize winning, bred to lay. Eggs $1.50 and $2.00 per sitting. W. E. B. SMITH, 820 Elm Ave., So. Pasadena, Cal. Phone Sunset, Main 2866.

PARTRIDGE WYANDOTTES—C. Andrews, 823 W. Franklin Ave., Hollywood, Cal.—1st cock, hen, cockerel and pullet; 2 cups, Poultry Breeders' Show, 1908.

WHITE MINORCAS (EXCLUSIVELY) —large birds, prolific layers., large white eggs, Eggs for hatching at moderate prices. L. V. PETERSON, Guerneville, Cal.

HOUDAN EGGS, FINEST WINTER laying strain. Setting of 15, $2.00; 30, $3.75. Square deal assured. Order now. MRS. R. HEGI, Box 272, Dixon, Cal.

CHAS. E. SMITH—BREEDER OF Barred Rocks exclusively. Winners of the blue wherever shown. Eggs $3.00 per 15, stock for sale. GARDENA, Cal.

S. C. BROWN LEGHORN EGGS, $1.50 and $2.50 per 15; $5.00 and $7.00 per 100. Hens thirteen months old $1.50 each. MRS. C. H. VARY, Pomona, Cal.

"CLASSY" WHITE WYANDOTTES—won 3 1sts, cock, hen, pen, besides special cup for best Wyandotte in big Pomona Show. Eggs $2 per 15. P. J. CURRAN, Box 242, Pomona, Cal.

FOR SALE—MATED HOMER PIGEons, good, strong, healthy stock guaranteed. For prices and particulars address CLYDE W. ROHRER, Box 252, Reedley, Cal.

FOR SALE—BUFF ORPINGTONS Steward Strain, eggs for hatching, $2.50 and $5.00 per 13, 100 per cent. fertility guaranteed. ELIZABETH A. WARD, Carpinteria, Cal.

FOR SALE—WHITE MINORCA EGGS for hatching. Day old chicks on order. Selected prize winning stock. MRS. E. BANTA, Calistoga, Cal.

PRIZE-WINNING WHITE MINORCAS. Eggs for setting, $2 for 15, $3 for 30; $6 per hundred, f.o.b. express. C. S. LANE, Santa Barbara, Cal.

FOR SALE—BABY CHICKS, ALL VArieties, 100 lots upwards. J. STANSFIELD, 3301 East 14th St., Fruitvale, Cal.

BRED TO LAY S. C. WHITE LEGhorns, strong healthy stock. Eggs $5.00 per hundred; $1.00 per 15. D. CLAYTON, Colusa, Cal.

TWENTY-FIVE MAMMOTH BRONZE imported Gobblers for sale. Ten months old at $5.00; 18 months old at $7.00. J. R. SNEAD, Dixon, Cal.

FOR SALE—EGGS FOR HATCHING 75 cents a setting. Black Minorca only. G. W. STERLING, R. F. D. 4, Kern Station, Cal.

O. L. CRANE, BREEDER OF PIT AND Cornish Indian Games. Rural No. 3, Santa Rosa, Cal.

SINGLE COMB RHODE ISLAND REDS —eggs for hatching $2.00 per 15. F. D. CRAWFORD, South Dos Palos, Cal.

Have the Time of Your Life

with my Portable Billiard and Pool Tables. Send for Catalog and let me show you good, practical Tables at the price of toys. Used anywhere. No special room required. **C. RIDDERHOF**
Merchants Trust Bldg., Los Angeles

rains. Is it water? Would frost or light freezing injure it? Will Acacia Baileyana be injured by standing in water or in lawn that is much watered?—J. D. M., Highland Park.

You do not give any information as to the condition of the tree to show what is the trouble, but from your query we take it that water may have caused unhealthful condition. We have seen Baileyana in lawns where they were heavily watered, and did well. We are sure that no temperature in Highland Park would ever injure the Ficifolia. The damage from water is more evident where land is underlaid with hardpan so as to maintain for a long time a soggy condition of the soil. If the trees are not where the lawn has to be protected, we would advise a deep spading and turning up of the soil, to allow air to enter and create as sweet and wholesome condition as possible. A slight dressing of lime might help to correct poor soil condition.

DR. WHITTLESEY'S VETERINARY REMEDIES.

These are not ordinary mixtures but are from well tried formulas, used in an extensive practice in Southern California for nearly a quarter of a century. Dr. Whittlesey's Sulphur Arsenical Salve for deep fistulous or ordinary chronic, indolent sores such as, "Poll Evil," "Fistulas," "Quitters," "Thrush," "Scratches," "Warts," "Collar sores" or "Sit-fasts." $1.00 per package postpaid. Printed directions. Dr. Whittlesey's Antiseptic Healing Powder. Forms a coating over raw surfaces, excludes air, flies and floating germs. Makes a cheap and convenient dressing for the many sores that occur to stock on the ranch. $1 full pound can postpaid.
DR. R. T. WHITTLESEY.
Veterinary Hospital, 714 East Seventh St., Los Angeles, Cal.

BERRY PLANTS.

STRAWBERRY PLANTS—FINE ONES, strong, thrifty, restricted Kellogg method, best varieties, Marshall, Jessie, Climax, and Everbearing. $3.00 per 1,000, $12.50 per 5,000. To close the season all plants are one-half prices quoted above while they last. Address J. R. POWELL, Ripon, Cal.

STRAWBERRY PLANTS FROM ONE year old plants that have not been allowed to bear fruit. Brandywine and Sharpless. $2.50 per 1,000, 35 cents per 100. R. P. NELSON, San Jacinto, Cal.

STRAWBERRY PLANTS—FINE ONES, strong, thrifty, restricted Kellogg method, best varieties, Marshall, Jessie, Climax, and Everbearing, $3.00 per 1,000, $12.50 per 5,000. Address, J. A. POWELL, Ripon, Cal.

WANTED—LADY THOMPSON, TEXAS, and A-1 strawberry plants, also Loganberry. State number and lowest price. None but first class plants wanted. Address, G. H. HOPKINS & SON, Burbank, Cal.

FOR SALE—BERRY PLANTS; LOgans, Giant Himalaya, Mammoth and Lucretia dewberries. Would exchange for rooted Tokay. A. P. HENNING, box 225, Cottonwood, Shasta Co., Cal.

FOR SALE—LOGAN, MAMMOTH, PHEnomenal, Himalaya, Blackberry, Dewberry; strong plants, $10.00 per thousand. Strawberries, $3.00 per thousand. GRIDLEY COLONY NURSERY, Gridley, Cal.

FOR SALE—BERRY PLANTS, BLACKberry, Dewberries $10.00 per thousand, Mammoth Logan, Phenomenal $1.50 per hundred. H. O. SORKNESS, Hemet, Cal.

FOR SALE—LOGAN BERRY PLANTS well rooted and very strong plants. Write me for terms. Plants ready now. Home 'Phone 2161. Z. A. WOLLAM, Riverside, Cal.

FOR SALE—LOGAN, MAMMOTH AND Himalaya berry tips, ten dollars ($10) per thousand. F. O. B., Laton, Cal., ADELBERT COOLEY, Laton, Cal.

CLEARING UP PRICES ON ALL kinds of berry plants, pear on quince root, and nursery stock. State your wants. TRIBBLE BROS., Elk Grove.

SEED.

FOR SALE—CALIFORNIA BLACK walnut seed in sack lots. Wanted: Mayette, Franquette and Parisienne Walnut scions, also Rupestris St. George, Rip. x Cord. x Rup. 106-8, Rip. x Rup. 3306 and 3309 cuttings, grafting size. Address FANCHER CREEK NURSERIES, Fresno, Cal

FOR SALE—SEED FROM SELECTED plants, Burbank's Crimson Winter Rhubarb $1 per quarter pound package, postpaid, $3 per pound. A. E. NELSON, El Monte, Cal.

FOR SALE—ORANGE SEED SElected from choice groves, can supply any quantity at reasonable prices. K. W. LATTIN, Alhambra, Cal.

BULLS.

FOR SALE—ONE REGISTERED JERsey Bull. Dam has given 6,300 pounds of milk with this, her first calf. Price, $50.00. GEO. W. THOMAS, West Central Ave., Riverside, Cal.

Household Department

SELLING THE FARM.

Well, yes, we settled, ma and I, that
we would sell the farm;
We are getting on in years and toil
has somehow lost its charm.
So we said we thought it time to lay
some of life's burdens down,
And the married children thought we
ought to buy a home in town.

Well, a purchaser come right along,
for I'll own, I'm free to say,
That a better or a prettier place you
might search for many a day,
With its fertile fields and wooded hills
and meadows lush and green,
And buildings snug and neat and trim,
as any ever seen.

But it's strange how old familiar
things will twine around the heart,
And we never dream how close they
cling till we sense that we must
part,
And when it come to business, sir,
that's what I meant to tell,
We found a precious lot of things that
somehow wouldn't sell.

There's that willow that ma planted
some forty years ago;
It has grown into a mighty tree with
branches drooping low,
And the children played beneath its
shade when the days were long
and warm—
Now I wouldn't sell that willow tree
for the price of this old farm.

And it's curious how we grow to love
the things we plant and tend—
Every tree in that old orchard seems
just like a human friend,
And I couldn't help but meditate how
we'd miss them, ma and I,
The tree of Golden Pippins and the
hardy Northern Spy.

And then the precious memories that
cluster 'round the place—
They seem to fill these homely rooms
with beauty and with grace.
We could seem to see the children
flitting blithely here and there,
And to hear their merry voices call-
ing, calling everywhere.

Then one day I found ma sitting by
the rose bush at the door
With the wistful look upon her face
I'd never noticed there before,
And I just dropped down beside her
and she looked up at me,
And something blurred our dim old
eyes till somehow we couldn't
see.

And then we settled, then and there,
that we'd stay on this old place
Till the Lord sees fit to call us to
stand before his face,
And we're mighty glad to tell you,
sir, we have no desire to roam,
For we think we know just what it
means to sell the old farm home.

—Elizabeth Clarke Hardy.

THE OLD MAN AND THE OLD FARM.

THE OLD man's ideas of farming were peculiar, but then the Old Man was peculiar.

The old farm was his hobby; his wife said he had fallen into a rut, which he could not get out of; that as a farmer he was a dismal failure—but he labored under the delusion that he had brought the farm into a state of perfection, being utterly unconsious of the abject muddle he had made of it.

On one occasion, as he stood in his favorite attitude, his hands clasped behind his back, his tall silk hat tilted on the side of his head, gazing somewhat sadly upon the ill-devised pig pens and dilapidated barns, he said to his foreman, "When I die, I would like to take the old farm to Heaven with me;" then half to himself he added; "But I shall give it away, when I am dead."

One day when the old man was looking at the pigs the choreman told him the old sow had just added a litter of nine to the stock list; "Umph!" he exclaimed, "eleven would have been better."

Then he grew communicative, as was often his habit, when conversing with the men on the farm; "I've bred hundreds of hogs, they never brought what their food cost me, there is nothing in 'em. I've tried dairying too, there is nothing in it."

"Is that so," said the choreman. "Yes," said the old man, "the orchard is nothing but a sheer loss; I've raised hay, corn and grain, and there is nothing in it. My chickens have swallowed up tons of stuff. After the bills are paid nothing remains."

"Indeed," said the choreman, "What is there anything in, Sir?" "Nothing," replied the old man.

"Oh!" exclaimed the startled choreman, "What's a poor man to do for a living?" "Nothing!" said the old man. "I spend all my time collecting money to pay my bills."

The old man prided himself upon being quite a "chicken man," and liked to wander around among the chickens, and was very fond of using the term "thoroughbred" and bestowed the definition upon many a scrub fowl that had no possible claim to the proud distinction. If he could hitch on to the chicken man, he would tell him, "I don't want eggs when they are ten cents a dozen. I want my fowls to lay when eggs are 65 cents a dozen."

When the laying season had just begun, the old man asked, "How many eggs are you getting now?" "About seventeen dozen a day, sir," the chicken man replied. "Ah!" said the old man, "put plenty of straw in the nests, and you will get nineteen dozen a day."

Naturally as the laying season advanced the number of eggs increased, and the following week when the old man inquired again, "How many are you getting now?" the reply was, "Twenty dozen a day, sir." "Umph!" said the old man, loking extra wise, "put in more straw and you will get twenty-five dozen a day."

But the chicken man knew by the number of laying hens that the limit was reached and not a bale of straw in each particular nest could induce the busy fowls to lay one extra, much more dozens.

The Plymouth Rock yards ran down from indiscriminate breeding, and were overcrowded with culls, and ancient blear-eyed scrawny roosters; the chicken man advised the introduction of a fresh strain of well bred birds. "Go and get them," the old man said, "I have no time to go chasing round the country after roosters."

The yards were sorted over, and the old fellows that had fallen into senile decay were turned to wander at large.

When the old man went the round of the yards with all the solemnity of a fancier judging at a poultry show, his man ventured to draw his august attention to the well set up, handsome birds, the newcomers, who were strutting around, crowing lustily in their new quarters.

"You see, Sir," said the chicken man, "What finely marked, vigorous birds you now have; how they show up those outsiders."

Some of the outcast relics lingered

Coulson's
POULTRY FOODS

Special Dry Chick Food

Makes Them Grow

COULSON'S SPECIAL DRY CHICK FOOD, during the five years it has been on the market has justly earned for itself its great reputation as a life-saver for little chicks by its special adaptation to their needs.

THE UTMOST CARE is observed in the selection of each of the dozen or more articles composing this unequalled feed; tender seeds, cracked grains blown free from dust, steel-cut oats, tiny pieces of dried meat and bone, willow and pure bone charcoal, are combined with other very necessary ingredients; every article being selected with special reference to its quality, strength, and desirability for the needs of the young chick.

FOR YOU TO BUY the many different articles composing Coulson's Special Dry Chick Food is quite impracticable; you could not be certain as to their quality for one thing, and the high cost of certain of them when purchased in small lots might lead to their being left out to the detriment of the chick.

TO MAINTAIN the high reputation of COULSON'S SPECIAL DRY CHICK FOOD, nothing is left undone to make it absolutely the best feed that can be made for the little chicks.

COULSON'S SPECIAL DRY CHICK FOOD can be fed exclusively to your little chicks for the first six weeks, at a cost of about four cents (4c) each; and what is of still greater importance, it will do all that can be done in the way of feed to bring them through that critical period of their lives in full health and vigor.

TO RAISE EVERY CHICK you hatch; to have fine, large, healthy chicks; to have chicks that will stand up and crow when eight weeks old; to raise chicks that you will be proud of, FEED COULSON'S SPECIAL DRY CHICK FOOD, THE LIFE SAVER.

Write Us for Free Samples and Prices

Manufactured Only By

Coulson Poultry and Stock Food Company *Petaluma, California*

GERMAIN SEED CO., Distributing Agents, Los Angeles, Cal.

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FOUNDED IN 1857. CAPITAL FULLY PAID $1,000,000.00

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101 Montgomery St., Cor. Sutter St., San Francisco

Exclusively a Savings Bank whose policy is for ***Conservatism*** and ***Safety,*** the result of ***Fifty-One Years' Experience.***

Deposits may be made and withdrawn by mail.

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Founded June 18, 1862 Northwest Cor. California and Montgomery Sts., San Francisco

Conducts a Savings Bank Business Exclusively

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without high shelf. With high shelf, just as shown in the cut, $19.97; large oven, six cooking holes, best quality of iron. Burns coal or wood. Handsome nickle trimmings. OUR TERMS are the most liberal ever made. You can pay after you receive the range. You can take it into your own home and use it 30 days. If you don't find it exactly as represented, the biggest bargain you ever saw you won't have to keep it.

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P. F. Ross & Co.

268 Market St. San Francisco, Cal.

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The Light That Never Fails

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The only lamp on the market that is sold under an absolute guarantee.

Remember, the light from Kerosene is the light science has agreed upon as being the purest and best, because it is soft and mellow and restful to theeyes.

Here are a few of The Angle Lamp Merits:

NO UNDER SHADOW. NO SMOKE, NO ODOR, LITTLE HEAT.

GREAT ECONOMY—COST LESS TO BURN than an ordinary lamp. As easy to operate as gas or electricity, and better than either. ABSOLUTELY SAFE under all conditions. Lighted and extinguished like gas. Burned HIGH or LOW like GAS without a trace of odor. And a BRILLIANT, soft, steady, shadowless light—but this you will have to see to appreciate.

The lamp as shown in cut burns 22 hours on 3 quarts of oil.

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Established 1869 Incorporated 189

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TRADE MARK REGISTERED

We have more than 100,000 satisfied customers in more than 17,000 cities, villages and towns in the United States who have each saved from $5 to $40 by buying a Kalamazoo stove or range on

360 DAYS APPROVAL

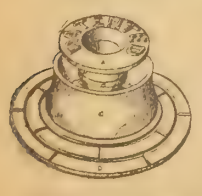
direct from our factory at actual factory prices. No stove or range has a higher reputation or gives better satisfaction. You run no risk. You save all dealers' profits. We pay the freight.

Send Postal For Catalog No. 508

and see list of towns where we have satisfied customers.

Kalamazoo Stove Company, Mfrs., Kalamazoo, Mich.

Our patent oven thermometer makes baking and roasting easy.



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WEISSBAUM PIPE WORKS

133-135-137 Eleventh Street, San Francisco

Hop prices are looking up somewhat

outside the wire enclosures, evidently dissatisfied with their freedom, hungering after the good things inside.

The old man looked at the fine new birds, then glanced dubiously at the ancient "scrubs" outside the pale; his belief in them as "thoroughbreds," must have fallen shattered to the ground, but the obstinacy of his nature made him reluctant to accept the evidence before him.

However, there were very few corners the wily old man could not wriggle out of, so turning to his man, he remarked with set visage and convincing tones, "Well, they were 'thoroughbreds' when I bought 'em."—C. H. Simson.

About the House

IF SOME day you want a dainty luncheon dish, serve bacon and eggs in a new way. Cut some slices of bread into pieces three or four inches square, then cut each piece diagonally across and toast lightly. Arrange the pieces on a platter, keeping the square form. Broil very thin slices of bacon to the curling point and place a slice on each square of bread. A poached egg with the white neatly trimmed to leave an even rim is slipped on to the toast and bacon. Have ready a hot tomato sauce, of the consistency of thick cream, and pour around the eggs. Place a little parsley or cress at each end of the platter, and serve immediately.

Crackers dried in the oven before being rolled will be much lighter for puddings and "crumbing" and better flavored too.

The troublesome paint stains on the floor may be scoured off by covering them with turpentine or benzine and after a short time rubbing them with emery paper, or a little pulverized pumice stone, applied with a damp cloth. Have no fire or light in the room while using the benzine and turpentine.

Whenever I find any new and easy way of making "left-overs" palatable, I like to pass it on. In my cupboard the other morning I found a saucer of plain boiled rice and a bowl of chipped dried beef that had been cooked in a cream sauce. I put them into a saucepan and in less than five minutes I had a hot dish for breakfast that every one approved of.

If you have some slices of cold roast beef, pork, or mutton, you can make them into a palatable hot dish by cooking the meat in a tomato sauce until the meat is hot and then carefully lay the slices of meat on a platter and pour the sauce over it; or you may lay the meat on slices of hot buttered toast before covering with the sauce.

One way to make the sauce is to take one pint of tomatoes, two teaspoons of sugar, eight peppercorns, one half teaspoon of salt and a bay leaf. Cook for twenty minutes, strain and add one cup brown stock. Brown together four tablespoons butter and four tablespoons flour—by browning you get a red sauce instead of a pink. Pour this into the hot tomato and beat until smooth.

Most people like "noodles" in soups and this recipe was given me by a cook who had a neighborhood reputation for "noodles." One egg, half an egg shell of water, flour to make stiff enough to roll. Roll very thin, fold over and over, then slice thin, shake out and drop in boiling soup or gravy. Cook ten minutes.

Sometimes "our folks" grow tired of potatoes and carrots and will have none of them, but they welcome "Potatoes Finnegan" and "Potatoes Finnegan" are just potatoes and carrots cut in dice or small cubes, seasoned with butter, pepper and salt, and then a thin white sauce poured over them. A tablespoonful of chopped parsley may be added.

If the spring winds roughen your hands, try washing them in buttermilk every night. If your finger nails are brittle and break easily, rub them with vaseline or olive oil before going to bed. You can keep the oil from the bed clothes by drawing on a pair of gloves or mittens.—Elbepe.

• • •

Hair Chain.

Will you please tell me how to make a hair chain? I mean a chain out of human hair. Will you also tell me how to fix a hair chain for a watch.—Mrs. F. E. S,, Riverdale.

I am very sorry, but I have looked very hard without being able to find directions for making a hair chain. Such chains are very pretty and I hope some of our subscribers know how to make them and will furnish the directions. I presume you would have to take the finished chain to a jeweler to be mounted with the proper clasp and attachments. At least one very beautiful one I have seen was so treated.—Elbepe.

A HAY COOKER.

A SUBSCRIBER sends in directions for making a "hay cooker." It can be easily made at home by any "handy" man or woman. It is a saver of fuel, there is no odor from the cooking, and no worry for fear things will burn. Any foods that should be cooked slowly can be cooked to perfection in the "cooker." Sometimes you may have to take the kettles out and heat the food the second time, but that is very little trouble and it is only for a few things that a second heating is necessary.

The box must be made of thick firm wood—an old trunk will do—without cracks or holes, and must have a well-fitting lid. Put three inches or more of packing material all over the bottom of the box. The packing material may be wool, cotton, crumpled bits of paper, feathers, hay or excelsior. Choose your cooking vessels with good, tight, well-fitting lids and avoid tin as it rusts quickly. Shape around each vessel some sheet asbestos, coarse straw paper, or corrugated paper, fastening it with stitches or a few rivets. Set the kettles in these coverings on the layer of packing in the bottom of the box, then stuff the packing all round them, and pack it firmly. Then make a cushion to cover all, fitted to the lid, which must fit closely. There must be at least three inches of packing between the kettles and the box—more is better—and there must be more if hay is used for the packing. Spare no pains to make the box air-tight.

Take the kettles from the cases leaving the cases in the box, put the food in the kettles and put on your cooking stove. Bring to a boil and cook for five or ten minutes, then quickly set the kettles in their cases, cover with the cushion, and fasten the lid. Food that requires one hour over the flame of a gas stove will require about three or four in the "box."

Some recipes came with the directions for making the "box."

Apple Sauce.

Make a syrup of one cup of sugar

and one cup of water. Into this slice about eight good sized cooking apples. Boil for five minutes, then put in box all night.

Corn Meal Mush.

Into five cups of boiling salted water stir slowly one and one half cups of cornmeal. Cook about five minutes and place in box overnight. A large quantity will cook better than a small amount.

Corned Beef.

Place three pounds of meat on fire, covered with cold water. Bring to the boiling point, pour off the water, cover again with cold water and add one level teaspoon of sugar. Leave it in the box all day. In the middle of the afternoon, take from the box, re-heat and replace. It will then be hot for the evening meal. If any is not eaten it may be returned to the liquor and used cold or made into hash.

Macaroni.

Cook about ten minutes on the fire and two hours in the box; then bake as usual.

Rice.

One cup rice, five cups boiling, salted water. Boil about five minutes on the fire and leave in the box six hours or over night.

Lamb Stew.

Cut in small pieces about two pounds of lean lamb, one onion and one carrot. Brown these in skillet with a little butter. Then add a pint of water, a pinch of sugar, a dash of pepper. Place in the kettle and simmer about twenty minutes. Add a level teaspoon of salt, let boil, and place in box for six hours. Take from the box, place on fire and add a cup of cooked peas if you have them, although it is very good without, and a few drops of Worcestershire sauce and thicken the gravy as desired.

Potatoes.

Potatoes cut small should be cooked for five minutes on the stove and in the box for two hours. Drain, season and mash as usual.

Spinach.

Wash thoroughly, cook on stove for five minutes, then in the box for two hours. Season as desired.

Spiced Prunes.

Make a spiced vinegar (tie the spices in a bag), sweeten to taste and pour over large prunes that have been soaked for 12 hours. Boil ten minutes and leave in the box 12 hours.

Cherry Tapioca.

Soak one half cup tapioca over night. Drain a can of cherries and add two and one half cups of the cherry juice to the tapioca. Sweeten to taste and boil for three minutes. Place in the box for two hours, then pour over the cherries. Serve cold with cream, either plain or whipped.

A BOILED DINNER.

While much depends upon the quality of the corned beef, even more depends upon its proper cooking. Most persons think that anyone can cook a New England boiled dinner, but there was never a greater mistake. Even with high-priced cuts rapid cooking will toughen or reduce it to a mass of strings. The brisket or loose flesh below the neck is in great demand for an economical family dinner. It is juicy and with the proper proportion of fat mixed with the lean.

The rump is good for slicing cold, if one does not care for any fat, says Emma Paddock Telford in the New York Evening Telegram. The plate and navel are cheap and good for corning, though rather fat. If you do not care to corn your meat at home, as most English housewives do, it is a good plan to select the cut you like and ask the butcher to corn it for you. Leave the meat in this process for two or three days, no longer.

A good pickle that you can make at home calls for three pounds rock salt, a quarter pound of brown sugar and a half ounce of saltpeter, with water enough to make six quarts. Boil and skim. Drop in a raw potato and if the brine is strong enough it will float. Make the day before using, so that it will be absolutely cold, when the meat goes in. Keep in a stone jar with cover, having a plate with stone on top of the meat to keep it under the brine.

When ready to cook wash the meat in two or three waters, scrape, put in a pot and cover with cold water. Allow 20 minutes to each pound and turn the meat two or three times while cooking.

After the meat has come to a boil and has been skimmed, push back on the fire where it will simmer. If you are going to use the meat cold let it cool in the liquor in which it has been cooked. Otherwise save the liquor and put the meat left over from dinner in the pot liquor, leaving in over night.

The vegetables that go with a boiled dinner are cabbage, beets, potatoes and if desired carrots or turnips. Each should be cooked separately, but with some of the pot liquor to season. Cabbage is often cooked with the meat, putting it in (quartered and cored) about an hour before the dinner is served. Beets in the summer take but 20 minutes or half an hour, but winter beets need as long or longer cooking than the meat. When serving, arrange the meat in the center of a large platter, then put the vegetables in groups around the meat.

WEAVING.

Spinning and weaving were among the earliest arts and were practiced by the savage tribes in a form which would seem to us in this enlightened day and age to be of the crudest kind.

The complicated weaves of today are but the development of matmaking and basketry made by the savage tribes. At this time cloth was not woven into bolts of many yards in length, but into the shape and size for the purpose for which it was designed, the design obtained from the objects by which they were surrounded. Never did they allow their decoration to interfere with its use. The skins of animals were used for clothing fastened together by the use of thorns for needles and the sinews of animals for thread.

The word textile means any kind of woven fabric made from wool, cotton, silk, flax, hemp, ramie, goat, camel's hair, and beaver, or the filaments drawn out of gold leaf or any other metal, all of which are webs formed for textiles.

Cotton is the most important of all vegetable fibers, three-fourths of which is raised in the United States.

Next in value is wool. Its great value lies in the fact that it is strong, elastic, soft, very susceptible to dye,

---

Gridley, Butte county, is promised a free rural delivery to begin April 1.

WESTERN BRANCH: Washington Shoe Mfg. Co.—Seattle.

Malthoid Roofing

Cassin & Ish, Goldfield, Nevada, U. S. A., write: "During the last great fire in Goldfield, a building covered by Malthoid was right in the heat of the fire. A wooden shed attached to it burned, but though the roofing blistered and partly melted, it did not burn. It was the very best kind of an advertisement for the material."

The Paraffine Paint Co. San Francisco California

E. G. Judah, General Representative, Security Bldg, Los Angeles

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The Model Acetylene Gas Generator

Built **especially** for generating the **best** known gas for **cooking** and **illuminating.**

Considered to be the best on the market by those who know.

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Satisfaction also guaranteed or money refunded.

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An excellent opening for good salesmen.

J. M. Gillis

Box 573, Stockton, Cal.

Pacific Seed Co.

C. Bagnall, Prop.

GROWERS AND IMPORTERS OF

Grass, Vegetable and Flower Seeds

All Kinds of Bulbs and Onion Sets

609 J St., Sacramento, Cal.

Send for Catalogue. Please mention Cultivator.

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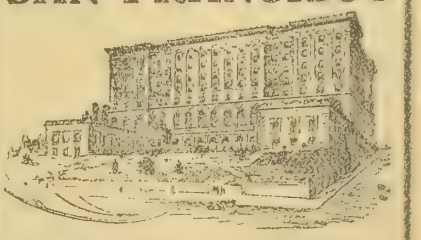

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Rates—single room and bath—$2.50, $3.00, $3.50, $4.00, $4.50, $5.00, $7.00, $10.00.

Suites—$10.00, $12.50, $15.00, $20.00 and up.

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Palace Hotel Company

BOOK ON DOG DISEASES

AND HOW TO FEED

Mailed FREE to any address by the author.

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Records and Supplies. $10.00 orders delivered at your nearest railroad station upon receipt of full retail price. Write for catalog.

Peter Bacigalupi & Sons, 941 Market St. San Francisco

San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, March 3, 1909.

Butter.

An advance of 2½ cents has been made during the week on extras and firsts. Market is firm at this writing.

Creamery ex per roll 75

Produce Exchange wholesale quotations are as follows with actual selling price to the trade 2½c advance on Extras.

Creamery ex per roll 72½
Firsts 70
Eastern Creamery Ex 70
Cooking 30
Butterine" .....16@20

Cheese.

Southern California Anchor 17
Northern fresh 17
Anchor, Young America 18
Longhorn 22
Eastern singles 17
Cheddars 17
Swiss 20
Imported Swiss 30
Daisy .....17@17½
Limburger 21
Oregon triplets 18
Twin 17

Eggs and Poultry.

Eggs have been forced down during the past week 6 and 7 cents. The start made for the new cooperative selling organization of producers is hoped to give an advantage in the future, but it will take some months to get it in working condition.

Eggs local candled 22
Eggs case count buying price 20

Dealers pay for live stock.

Hens per pound .....14@15
Young roosters per pound .....18@20
Fryers .....20@23
Broilers, per lb .....24@26
Roasters .....18@20
Old roosters 7
Turkeys .....20@23
Geese .....13@15
Ducks .....14@16
Squabs .....1.25@1.75

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs from 175 to 200 pounds 6½@6¾
Prime steers .....4¾@5
Heifers .....4@4½
Calves per pound 5
Sheep ewes per head .....3.75@4.00
Lambs per head .....3.00@3.75
Wethers .....4.50@5.00

Potatoes.

Wholesale prices are:

Sweets per ctl 1.75
New per box 2.00
Early Rose local 2.25
Early Rose northern 2.50
Burbanks local 2.25
Lompocs 2.50
Highland fancy .....2.00@2.10
Highland choice 1.70
Salinas 2.50
Idaho's .....1.75@2.00
Oregon Burbanks 2.25
Colorado's .....1.75@2.00
Sweets choice 1.00

Onions.

Wholesale quotations:

Australian Browns 2.50
Danvers 2.50
Silverskins 2.50
Oregons 3.00
Nevada's 3.00
Utah's 2.50
Garlic 12

Vegetables.

Artichokes per doz northern ..75@1.00
Asparagus per lb .....17½@20
Beets per doz 35
Bell peppers per lb .....25@30
Beans string .....15@20
Beans Limas per lb .....8@10
Brussels sprouts per lb.....10
Cabbages Red per lb 2½
Cabbage sack .....1.50@1.60
Celery per crate .....3.00@3.20
Chili per lb 20
Chili dried .....10@12
Chicory per doz 50
Cucumbers per box hot house 75@2.25
Cauliflower per crate .....2.25@3.00
Carrots per doz 35
Egg plant per lb 8
Green onions per doz bunches ..15@20
Horseradish per lb 12
Lettuce per crate .....1.00@1.25
Lettuce choice 75
Mushrooms per lb 35
Peas sugar per lb .....10@12
Parsley doz 15
Parsnips .....35@40
Rutabaga per doz 40
Rhubarb .....90@1.00
Rhubarb Northern per box 1.25
Raspberries per doz .....15@20
Summer squash per box ....1.00@1.25
Spinach per doz 20
Turnips doz bunches .....20@25
Tomatoes crate 2.25

Citrus Fruits.

Navels fy .....2.00@2.25
Navels ch .....1.25@1.50
Tangerines .....1.60@1.75
Grapefruit seedless 3.00
Grapefruit seedlings 2.25
Lemons fy .....1.50@2.00
Lemons ch .....1.00@1.50
Limes half box 2.00

Fresh Fruits.

Wholesale prices on the market are:

Baldwins 4 tier 1.35
Bellflowers .....1.15@1.25
Newton Pippins 1.25
Red Pearmains .....1.25@1.35
W W Pearmains 1.50
Spitzenberg 2.50
Grapes Red Emperors .....1.50@1.75
Guavas per lb .....6@8
Cornichons 1.25
Guavas 6
Pears box .....1.75@2.00
Persimmons per box 2.25
Pomegranates per box 1.75
Starks, Hood River .....1.75@2.00
Strawberries fy .....15@17½
Strawberries ch .....5@10

Dried Fruits.

Wholesale prices are:

Apricots .....8@10
Evap. apples fy per lb .....7½@8
Figs loose white 5
Figs blk 5
Peaches in boxes 7½
Peaches sacks 7
Pears 9
Plums pitted .....8@9
Nectarines .....7½@9
Prunes 30's to 40's boxed 8
Prunes 40's to 50's.....7½
Prunes 50's to 60's.....7

Beans Dried.

Wholesale prices are:

Limas per ctl 4.50
Pink No. 1 .....3.25
Lady Washington 5.00
Small white 5.50
Black eyes .....3.75@4.00
Garvanzas 4.00
Lentils California 7.00
Bayou 3.50

Nuts.

Almonds IXL per lb .....14@15
Ne Plus Uutra 14
Pecans polished .....16@17
Peanuts Virginia .....6½@7
Peanuts California .....5½@6
Walnuts No 1 .....11@12
Chestnuts .....8@8½

Honey.

Wholesale quotations:

Extracted water white 8
Extracted Light Amber .....6½@7
Comb W W 16
Comb white 15
Beeswax 30

Hay.

Prices paid to producers f. o. b. Los Angeles are as follows: .....

Barley No 1 .....21.00@23.00
Barley No 2 .....18.00@20.00
Alfalfa northern per ton ..14.00@15.00
Alfalfa local .....15.00@18.00
Tame Oat No 1 .....22.00@24.00
Wheat No 1 .....18.00@21.00
Wheat No 2 .....18.00@20.00

Grains.

Wholesale selling price f. o. b., Los Angeles.

Wheat new per ctl 2.00
Kaffir corn 1.80
Corn Eastern sacked 1.75
White oats 1.90
Seed Rye 1.80

Feed Stuff.

Wholesale selling price f. o. b., Los Angeles:

Cracked corn 1.80
Shorts 1.80
Bran 1.65
Oil cake meal 2.50
Feed meal 1.85
Rolled barley 1.55

EUCALYPTUS TREES.

The great interest which has been manifested in eucalyptus planting this season has exhausted many stocks and inquiry is made as to the supply meeting all demands. The Morris & Snow Seed Co., of 425 South Main St., Los Angeles, finding its stock getting low recently made a purchase of the Eucalyptus Land & Timber Co., of Inglewood, of over two million trees. But out of that immense number only about 400,000 trees remain.

In these 400,000 tree are Rostrata, Robusta, Tereticornis, sugar gum and Resinifera. The Rostrata is the largest number of all the immense stock.

The wise planter will get busy before the trees in hand are all exhausted.

The Southern Pacific Railway Company is installing 6,000 feet of 6-inch Machine Banded Redwood Pipe with cast iron collars, pipe manufactured by the National Wood Pipe Company, Los Angeles, California. The Wood Pipe is being laid in a salt marshy ground. Water will be piped from the Hope Ranch to the station yards.

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

San Francisco Markets

SAN FRANCISCO, March 2, 1909.

Butter.

A decline of one cent is noted in the butter market. Fresh stocks are steady with storage showing little interest.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras per lb 35
California firsts 34
California seconds 30½
Ladles extra 23½
Storage Cal ex 32½
Eastern extras 31½

Cheese.

California flats fy 14½
Firsts 14
Cal Young American fy 16
Firsts 15
Seconds 11½
Young American Oregon fy 16½
Eastern N. Y. Cheddars fy 17½
Oregon flat fy 14½

Eggs and Poultry.

California Fresh Ranch, extras have advanced one cent during the week and now stand at 22½.

Official quotations of the S. F. Wholesale Dairy & Produce Ex. are:

Fresh ranch extras 22½
Eggs first per doz 22
Eggs second 21
Eggs thirds 20½
Pullets selected 19

Hens per doz .....5.00@6.50
Hens extra .....7.00@9.00
Young roosters .....7.00@7.50
Old roosters .....4.00@5.00
Fryers per doz .....6.50@7.50
Broilers per doz .....5.50@6.50
Geese per pair .....2.00@2.50
Goslings per pair .....1.75@2.00
Ducks young .....5.00@9.00
Live Turkeys .....17@19
Dressed Turkeys .....18@22
Pigeons young .....2.00@2.50

Live Stock.

San Francisco prices gross weight:

Steers No 1 .....5¼@5½
Do second quality .....4¾@5
No 1 cow and heifers .....4@4½
Second quality 3½
Hogs 100 to 130 .....6¼
Hogs 130 to 250 .....6½
Rough heavy .....4½@5
Calves per lb .....4@5
Lambs spring 6½
Wethers No 1 .....5¾@6
Ewes No 1 .....5¼@5½

Potatoes.

Wholesale market quotations:

River white fy sacks .....1.25@1.50
Early Rose .....1.85@2.00
Salinas Burbanks .....1.65@1.90
Sweets per crate .....1.50@1.75
Lompoc Burbanks .....1.85@2.00
Early Rose seed .....1.25@1.30
Oregons .....1.60@1.75

Vegetables.

Wholesale quotations:

Asparagus per lb .....9@15
Bell peppers per lb 25
Brussels sprouts per lb .....3@5
Celery per ½ crate .....1.00@1.50
Cucumbers per doz .....75@1.00
Chili peppers per lb .....15@25
Egg plant per lb .....25@30
Green peas per lb .....10@12
Mushrooms per lb .....12½@25
Marrowfat squash per ton 20.00@22.50
Squash cream per box .....50@65
Onions green per box .....50@85
Okra per box .....1.25@1.50
Rhubarb per lb for bay .....6@8
Rhubarb, Southern per box ..1.00@1.25
Tomatoes box Mexicans .....1.35@2.00
String beans .....10@12½
Wax Beans .....10@12½
Garlic new .....8@10

Onions.

Onions, Oregons .....1.75@2.00

Citrus Fruits.

Navels fy .....1.50@2.50
Tangerines per crate .....75@1.50
Mandarins .....75@1.00
Grapefruit seedless .....2.50@3.50
Grapefruit seedlings .....75@1.25
Lemons ch 1.25
Lemons fy .....2.50@3.00
Limes .....6.50@7.00

Fresh Fruits.

Bellflowers .....75@1.00
Bellflowers No 2 .....50@75
Spitzenberg .....1.25@2.00
Newton Pippins .....1.25@1.40
Ben Davis .....1.25@1.50
Winter Nellis .....1.25@1.50
Other Kinds .....50@1.00

Dried Fruits.

Prunes 4-size basis .....2½@3
Santa Clara .....3¼@3¾
½c premium for larger sizes
Apricots per lb; Choice 8½; fancy 7@10.
Peaches—Choice .....4; fancy.....6½
Apples evap .....6@7
Pears .....4@8
Figs .....2½@4
Nectarines .....5@6
Pitted Plums .....7@8

RAISINS—1908 crop, f. o. b.: Clusters and Layers, 20-lb bxs—Imperial Clusters, 6-crown, $2; Dehesa Clusters, 5-crown, $1.75; Fancy Clusters, 4-crown, $1.40; London Layers, 3-crown, $1.15; do, 2-crown, $1.05. Seeded, 25-lb bxs—Fancy bulk per lb, 5¼c; Choice bulk, 5c. Loose Muscatels, 50-lb bxs—Standard, 4-crown, 4c; do, 3-crown, 3¾c; do, 2-crown, 2¾c; Seedless, 3½c. Seedless Sultanas—Unbleached, 4¼c. Thompson Seedless—Unbleached, 4¾c. Dried Grapes, 2½c.

Nuts.

Walnuts S S No 1 .....8@12½
Walnuts No 2 6
No 1 Standard 8½
No 2 Standard .....4½@5
Almonds Nonp 11½
Almonds IXL .....10½@11
Ne Plus Ultra 9½
Drakes .....8½@9
Chestnuts .....9½@14
Peanuts Cal .....5½@6

Beans Dried.

Limas .....3.65@3.80
Pink .....2.45@2.65
Small white .....5.00@5.25
Large white .....3.80@4.15
Black eyes .....2.80@3.00
Red Kidneys .....3.50@3.60
Garvanzas .....3.00@4.00
Bayo .....3.25@3.30
Horse beans 2.00

Hops.

Hops 1908 crop .....6@10

Honey.

White comb .....12@14
Light Amber .....8@11
Exracted W W .....7@8
Extracted light amber .....5½@6
Beeswax No 1 per lb .....28@30
Beeswax No 2 per lb .....23@25

Hay.

Hay is higher, and we might say materially higher too, for dealers and all interested seem to have come to the realization of the fact that the available supply might not be enough to take care of the demands which are bound to be made on us. Receipts for the past week have amounted to 2300 tons, being practically the same as the amount received the week previous. Business is good and the demand both in San Francisco and the country is very heavy. Consumers as well as dealers seem to appreciate the gravity of the present situation and many are making efforts to contract for their supply of hay for the remainder of the season, thereby protecting themselves against higher prices which in our opinion are bound to come. Many think that we will have a hay famine but this connot be, for feed must be obtained for all stock even if we have to draw from outside States which at present can only be done at prices higher than are now ruling locally.

The most peculiar feature at present is the small range of prices, the medium and poorer grades of hay being very hard to find and as a result we hear the expression "hay is hay" irrespective of quality. The only kind of hay which is at all reasonable is stock hay which cannot be used for work horses or dairy cows; even this grade has advanced in sympathy with the general market.

Choice wheat hay .....23.00@24.50
Good wheat hay .....21.00@22.00
Wheat and oat .....21.00@23.00
Tame oat .....20.50@23.00
Wild oat .....20.00@22.00
Stock hay .....13.00@16.00
Alfalfa .....17.00@19.00
Straw per bale .....50@85

Grains.

Wheat No 1 .....1.85@1.90
Barley .....1.40@1.42½
Corn large yellow .....1.60@1.62½
Oats white .....1.87½@1.95
Oats gray 1.87½
Rye new crop .....1.80@1.85
Corn Egyptain .....1.60@1.65
Alfalfa seed, Cal .....17@18
Alfalfa seed, Utah .....18@19

Feed Stuff.

Bran per ton .....28.50@30.00
Feed cornmeal per ton ..37.50@38.50
Cracked corn per ton .....38.00@39.00
Rolled barley per ton ....28.50@30.00
Oil cake meal per ton .....38.50@40.00
Cocoanut cake per ton .....25.00@26.00
Middlings .....32.00@35.00
Shorts .....32.50@33.50

Citrus Market

LOS ANGELES, March 3, 1909.

The shipments during the past few days have been exceptionally heavy. The shortage which occured in the Eastern market during the recent storms was so great that shippers seemed to feel that great quantities of citrus fruit would be absorbed, in fact, such has been the case, and the situation has been helped by the shortage of bananas and some other tropical fruits. However, the citrus shipments have been so exceptionally heavy, exceeding

Cream Separators, all sizes, all prices. O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

200 cars per day on many days, that the market has been to a certain extent, unsettled. There is as yet no slump in prices, although some shippers have been a little finicky and agreed to shade general quotations 10 to 15 cents. The larger shippers, especially the Exchange, have taken hold of the situation, however, and shipments are being slowed up so that it is thought the conditions will be corrected within a very few days.

This is the harvest time of the entire year and the best prices should prevail, especially after fruit has been carried over the months of January and February, with fair returns being secured.

Lemons are going forward fairly rapid now and are commanding good prices; foreigns are coming in in about the same quantity as formerly but the warm weather which has prevailed in some sections has aided in the disposal of stocks on hand.

Shipments.

Shipments of oranges to date, since November 1, 1908, aggregate 8,332; lemons 1,515, or a total for this season of 9,847 of citrus fruits. This date last season, the shipments were 8,505, of oranges, 1,467 lemons, or a total of 9,972 cars.

NEW YORK, March 1.—Forty-five cars navels, one car navelencias and five cars lemons sold. There is a good demand, but prices are lower on navels. The market is steady on strictly fancy lemons, but weak and lower on ordinary stock. Weather clear and favorable.

NAVELS—	Average.
Euclid Euclid Ft Co	2.45
Rialto Girl Growers' Ft Co	2.60
Champion A C Denman	2.40
Lion Head I L Lyon	2.60
Tiger Head do	2.40
King Midas F B Devine	2.40
Producers' Red O P Co	2.45
Rialto Girl Growers' Ft Co	2.55
Orchard, National O. Co	3.20
Standard do	2.70
Standard do	2.15
Rose Red O G Assn	2.60
Clover do	2.40
Elephant O G Cash Assn	3.20
Blue Banner Sutherland	2.90
Native Sutherland Ft Co	2.55
Highland	2.15
Cactus High F G A	2.25
Giant Palm J D Carpenter	2.15
Redlands Best Mutual O Co	2.45
Trail ST Ft Ex	2.30
Canon do	2.20
Majestic, C S Spencer	2.50
Dos Palmos San Marino G P A	2.50
Blue Mountain	2.25
Gold Buckle, RH Ft Ex	2.90
Lochinvar do	2.60
Blue Globe Riverside Ft Ex	2.50
Red Globe do	2.45
Cal Orange do	2.35
Jameson, QC Ft Ex	2.50
Just Rite do	2.50
Ostrich, SB Ft Ex	2.50
Winner do	2.35
Quail OK Ft Ex	2.35
Royal Knight RH Ft Ex	2.55
Iris DM Ft Ex	2.65
La Mesa Riverside Ft Ex	2.75
Golden Rule do	2.60
Golden Orange AH Ft Ex	2.55
Gold Buckle RH Ft Ex	2.60
Lochinvar do	2.55
Pine Cone SB Ft Ex	2.75
Arrowhead do	2.60
Uncle Sam Riverside Ft Ex	2.60
Pond Lily do	2.40
Signal Stewart Ft. Co	2.60
Titus Ranch San Marino G P A	2.45
Ruby Cal Citrus Union	2.45
Anemone do	2.45
Monogram Red seconds Cal C U	2.35
Mocker Spence Ft Co	2.30
Camellia Red M O Co	2.50
Blossom do	2.30
Queen Bee QC Ft Co	2.40
Royal do	2.35
LEMONS—	
Pet SA Ft Ex	2.25
Arab do	2.20
Greyhound do	1.70
Transcontinental SS Ft Co	1.65
El Modena do	1.40
Circus Spar Ft Co	1.95
Senorita B and SR Ft Co	1.70
Independent Growers' Ft Co	2.65

PITTSBURG, March 1.—The market is steady on navels and lemons. Eleven carloads sold, eight on track. Two carloads Florida oranges sold, average $2.75. Market unchanged on Floridas. Weather favorable.

NAVELS—	Average.
Orchard National O Co	3.00
Standard do	2.55
Del Oro Sparr Ft Co	2.25
Black Beauty E H Verrill	2.30
A One E Peycke Co	2.40
Violet D-M Ft Ex Monrovia	2.20
Jasmine do	2.30
Orchard Run SA Ft Ex Pomona	2.25
Castle Riv Ft Ex Riverside	2.15
Golden do	2.15
Mt Baldy do	2.30
Violet D-M Ft Ex Monrovia	2.40
Jasmine do	2.30
Castle Riv Ft Ex Riverside	2.10
Mt Baldy do	2.35
LEMONS—	
Whittier ST Ft Ex Whittier	2.05
Pico do	2.10

BOSTON, March 1.—Twenty-six carloads sold, sixteen on track. The weather is favorable; market is very strong.

NAVELS—	Average.
Orchard National O Co	3.05
Standard do	2.60
Rose Redlands OG Assn	2.85
Lion Head I L Lyon Sons	2.75
Producers Redlands OP Co	2.70
Preferred Stock A Break	2.70
Stearns Highland C C Union	2.70
Bronco W American Ft Co	2.70
Topaz Cal Cit Union	2.65
Preferred Stock A Break	2.65
Clover Redlands OG Assn	2.60
Flamingo, Cal Cit Union	2.60
Trail ST Ft Ex	2.55
Canon do	2.55
Golden Pheasant Independent F Co	2.55
Stearns Highland C C Union	2.45
Sapphire do	2.40
Monogram Redlands C C Union	2.25
Lochinvar RH Ft Ex Highland	3.85
Royal Knight RH Ft Ex Red	2.75
Laurel QC Ft Ex Corona	2.80
Gold Buckle RH Ft Ex Highland	3.05
Lochinvar do	2.80
Pomona SA Ft Ex Pomona	2.55
Golden Orange AH Ft Ex Prenda	2.85
George Washington Riv Ft Ex Riv	3.60
Blue Cross Riv Ft Ex Riverside	1.80
BLOODS, HALVES—	
Laurel QC Ft Ex Corona	1.50
Golden Orange AH Ft Ex Prenda	1.50
TANGERINES, HALVES—	
Golden Orange AH Ft Ex Prenda	1.90
LEMONS—	
Homer QC Ft Ex Corona	2.80
Cycle VC Ft Ex Fillmore	2.20
Harbor Charles Moknike	1.85
Excelsior Cal it Union	1.80
Ramona Charles Mohnike	1.65
El Toro Cal Cit Union	1.60

ST. LOUIS, March 1.—Weather cloudy. Market is weak on navels and lemons. Eight cars sold, eleven navels and two cars lemons on track.

NAVELS—	—Average.
Volunteer, SA Ft Ex N Pomona	2.55
Grayhound do	2.25
Pointer ACG Ex Lateen Spur	2.25
Lochinvar RH Ft Ex E. Highlands	2.70
Belt do	3.45
Highgrove Riv Ft Ex Highgrove	2.30
Fruita do	2.40
Conqueror Independent Ft Co	2.20
LEMONS—	
Red Mountain	2.20
Del Oro Sparr Ft Co	2.25

CLEVELAND, March 1.—Snowing. Market is strong on navels, firm on good stock lemons. Eight cars sold, eleven on track.

NAVELS—	Average.
Ben Hur RH FtF FEx Redlands	2.40
Newsboy do	2.15
Blue Globe Riv Ft Ex Riv	2.40
Red Globe do	2.45
Cal Orange do	2.20
Golden Or AH Ft Ex Arlington	2.70
Troubador do	2.30
Royal Knight RH Ft Ex Redlands	2.70
Mt. Baldy Riv Ft Ex Riv	2.55
Crocus SB Ft Ex Yerkes Spur	2.75
Canna do	3.60
TANGERINE, HALVES—	
Squirrel AH Ft Ex Arlington	1.40
Palm Tree do	1.25
GRAPEFRUIT—	
Palm Tree AH Ft Ex Arlington	2.00
LEMONS—	
Arab SA Ft Ex San Dimas	2.80
Duck do	2.40
Big R SB Ft Ex Rialto	2.40
Yacht do	2.45

PHILADELPHIA, March 1.—Thirteen cars navels, three cars lemons and two mixed cars sold. The market is lower on navels and lemons. Weather clear, cool. Seventeen cars on track. Thirty cars Florida oranges sold. The market is unchanged on good stock.

NAVELS—	Average
Independent Cleghorn Bros	2.61
Native Son King F Co	2.54
Rialto Girl Growers' Ft Co	2.38
Black Beauty E H Verrill	2.36
Butterfly Covina Ft Ex	2.24
Sardony Cal Cit Union	2.22
Butterfly Covina Ft Ev Covina	2.06
Pointer ACG Ft Ex Glendora	2.47
Hunter do	2.17
Planet SS Ft Ex Orange	1.96
Goddess SA Ft Ex Pomona	2.25
Carlo do	2.08
Cluster do	2.04
Pointer ACG Ex Lateen Spur	2.16
Hunter do	2.32
Pointer do	2.45
Truth Riv Ft Ex Riv	2.28
Valley TCC Ft Ex Porterville	1.91
Full Value do	1.75
BLOODS, HALVES—	
Rialto Girl Growers' Ft Co	1.38
Native Son King Ft Co	1.37
LEMONS—	
Topaz Cal Cit Union	1.88
Princess QC Ex Corona	2.36
Lily do	2.00
Oakleaf TCC Ft Ex Porterville	2.14
Blue Jay do	1.82

CINCINNATI, March 1.—Weather cool, raining. Market is steady. Three cars navels, two cars lemons and five cars Florida oranges sold. There are five cars on track. Florida Brights sold from $2.30 to $2.65. Russets, $1.90 to $2.70.

NAVELS—	Average.
Grayhound SA Ft Ex N Pomona	2.35
Morning Glory do	2.15
Stock Label ST Ft Ex Rossmoyne	2.40
Naralimo Harper Ft Co	2.25
LEMONS—	
Del Oro Sparr Ft Co	2.00
Extra Choice ST Ft Ex Tropica	2.15
Standard do	1.95

For Mehring Foot-Power Milking Machines see O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles, Cal.

MEALY BUG.

(Continued from Page 245.)

ty well over them. At the present time there is very ittle mealy bug to be seen, and the general condition of the orchards in that respects is indefinitely better than it was last spring and summer.

Besides the Cryptolaemus, last summer George Compere brought to us from Japan three different species of parasites which feed upon the mealy bugs there. Two of these resemble very much the Scutellista, and the other is a yellow lace-winged fly. All three are very small and difficult to detect in the open. I feel very sure that I have seen the yellow fly and the larger black flies, and therefore hope, and really feel some confidence, that they are domesticated with us.

I feel that the only hope of keeping the mealy bug in control is by parasites, precisely as with the cottony cushion scale. It is idle to think of eradicating them by fumigation or sprays, after they are once well established in an orchard, though it is possible that, if taken in the very first instance, this might be done. This last fall we tried putting 16 ounces of cyanide over a moderate sized lemon tree and leaving on the tent all night. Though a good many bugs were killed, we had no trouble in finding plenty of live ones the next morning. I have found them in masses three or four inches below the surface of the ground wherever there are cracks between clods. Therefore it seems clear to me, as I said before, that our only real hope is the parasites, for these will follow the mealy bugs wherever they go.

You ask about the Bonnie Brae ranch. I have received and packed all the fruit grown on this ranch throughout the past year. When it was in its worst condition, a great deal of the fruit had to be thrown away. That which we received was washed by putting kerosene in the tank of our lemon washer, and in this way we cleaned it up satisfactorily, and it seemed to keep fully as well, if not better, when the kerosene was used. The mealy bugs multiplied upon this orchard so that at one time the trees were literally white with them, and there would have been no difficulty in filling a five-gallon coal oil can from a single tree. I hope that these parasites are now so fully established that they will hold the mealy bug in subjection, just as the Vedalia does the cottony cushion scale. It will take at least one year to demonstrate this, but it certainly looks much more hopeful now than it did a year ago.—R. C. Allen, Bonita.

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Meets with pronounced success. The demand for copies of this work is increasing. Orders are coming from all parts of the country. It is a very exhaustive publication. Describes fully 2,000 different varieties of trees and plants. Is superbly illustrated and contains much valuable information to planters. Copies may be had by sending 25 cents in stamps to George C. Roeding, Fresno, California.

WHITE WYANDOTTES.

A very neat folder of eight pages is issued by the Mission View Poultry Ranch, of which Mrs. C. D. Hubbard is the owner. Every page is decorated with photographs of the magnificent stock which Mrs. Hubbard is noted for breeding. She probably has the longest string of winnings of any Wyandotte breeder in the country. She not only has prize winners but also birds which prove their worth at the nest. Mrs. Hubbard goes to the limit in her guarantee of her eggs as she states in this circular, "all clear eggs replaced if returned within nine days, express prepaid." All of Mrs. Hubbard's breeders are trap nested.

FINE TURKEYS.

Mrs. M. E. Sherman of Fresno, writes the Cultivator that she has just received some Turkeys from the J. R. Snead Ranch at Dixon, which she secured through an ad in The Cultivator. Regarding them, she says, "They are very fine birds, and we are pleased with them. Only nine months old and taller than others I have seen three years old. Of course, they are not larger, but taller. When they fill out, they will weigh 40 pounds. I bought Bronze Turkeys for many years, but these are the finest I have ever gotten for my money."

IF THESE PEOPLE CAN USE THE ELIXIR WITH "ENTIRE SATISFACTION," YOU CAN.

Tuttles Elixir Co., Gentlemen:—We have used your vertinary remedies for the past season with entire satisfaction. Through the Mud Fever contagion of last spring, Tuttles Elixir did splendid work for our horses. They worked in the worst part of the city, but with good care and a liberal use of Tuttle's Elixir they came through in good shape.—P. L. Bonebrake, Yardmaster, Cudahy Packing Co.

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A deposit of gypsum estimated to contain over one million tons of a high grade gypsum and gypsite has been discovered in the Temescal mountains and is being developed by Bollinger & Crane of Riverside. The gypsite is a disintegrated gypsum, showing a high analysis in sulphate of lime, and is a very valuable form of lime for agricultural purposes.

The Morse Institute of Telegraphy now advertising in the Cultivator reports a large demand for competent operators and are soliciting students. Applicants will be furnished full particulars in regard to entering the school, cost, etc., by addressing Morse Institute of Telegraphy, corner Market and Jones street, San Francisco, Cal.

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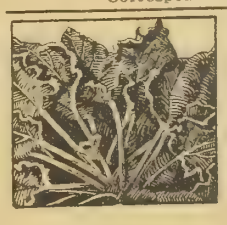

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THE

Latest Deep Well Turbine Pump

Guaranteed to deliver from 100 gallons per minute upwards, depending on the diameter and capacity of well, from a depth of 50 to 300 feet below the surface. Can be either belt driven or direct connected to electric motor as occasion requires.

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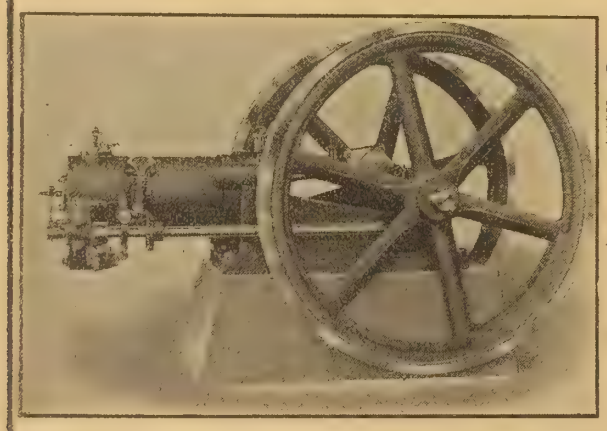

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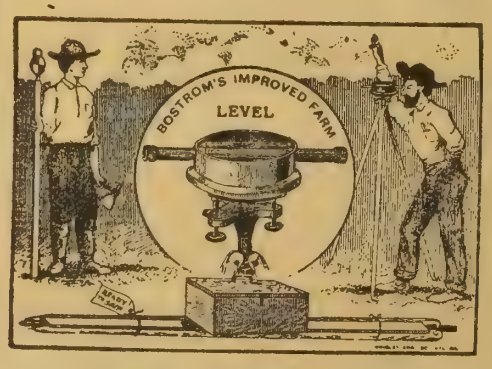

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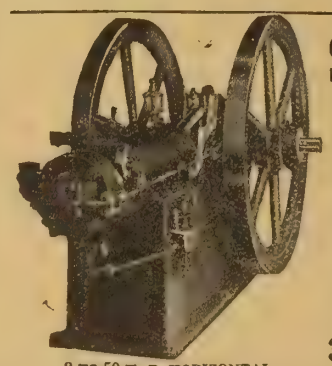

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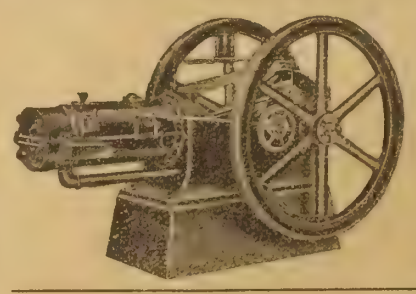

a given height with one gallon of No. 2 distillate than our competitors. Send for Bulletin No. 12 and see how we do it.

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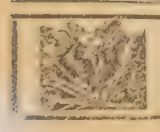

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$1.50 Per Dozen. $6.00 Per Hundred. $40.00 Per Thousand.
Superlative and other berry plants. Pedigreed stock only.
J. B. WAGNER - The Rhubarb and Berry Specialist
Pasadena, California

California Cultivator

Published Weekly — One Dollar a Year

Los Angeles — March 11, 909 — San Francisco

Water in the San Joaquin Valley

Head of the Irrigation System, Sanger, California. A Perpetual Water Right Which is Appurtenant to Rich Valley Land

See That Can? It Never Moves!

Other separator manufacturers have been trying to imitate it for five years. That shows their high opinion of a low, steady supply can which need not be moved in order to take the bowl out of the machine.

1909 TUBULAR "A"

Exclusive Tubular advantages are surprisingly numerous. Observe the low supply can, so easy to fill, not necessary to move to take out bowl. The solid, one piece frame. The suspended bowl and bottom feed, Enclosed, self-oiling gears. The plumb bob, at back of machine, for quick, easy leveling. The crank set just right for easy turning.

OUR machines are the **only** cream separators that have such a supply can. Other manufacturers have **not been able to imitate it.** That is because all common "disc" or "bucket bowl" separators have bowls fed through the top—such bowls **must** have the supply can set directly over them. Consequently, the supply cans are always the highest part of all common "disc" or "bucket bowl" machines and must always be lifted off before the covers or bowl can be removed.

LOW supply cans, which need not be moved, are **only possible** in cream separators having a **suspended bowl fed through the bottom.** Our machines are the **only** cream separators having such bowls, and our patents prevent any other manufacturer from making them.

SUPPOSE you had the supply can, on any separator, full of milk and found it necessary to remove the bowl? It would be mighty inconvenient to lift the supply can off, wouldn't it? No need to with the Tubular.

PUBLIC appreciation of Tubulars has made the Tubular cream separator works the biggest and finest in the world. We have additional factories in Canada and Germany. 1908 sales were way ahead of 1907--far ahead of any competitor, if not all competitors combined. The additional good features in our 1909 Tubular "A" have already made the Tubular even more popular than before. Write for catalog No. 260.

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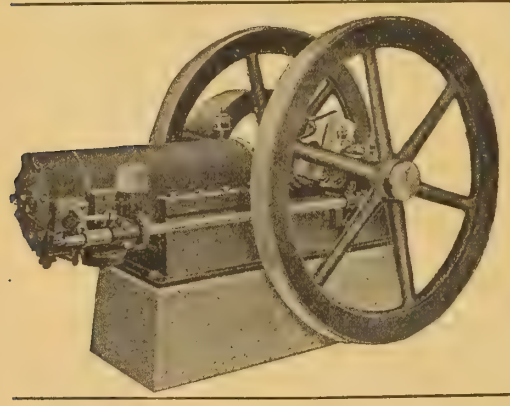

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Distillate Engine

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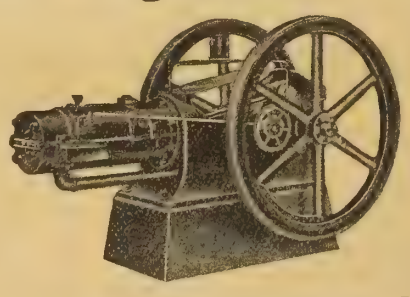
Commercial Gas Engines

are Better Engines than you have been using.

See One Buy One

So will your neighbors. Send for Bulletin No. 12



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Irrigating Hose, all sizes. Prices and samples quoted upon application. Write your wants. Wagon Covers, Hay Covers, and Canvas Covers of every description.

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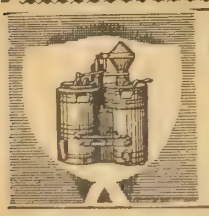

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The Best on Earth

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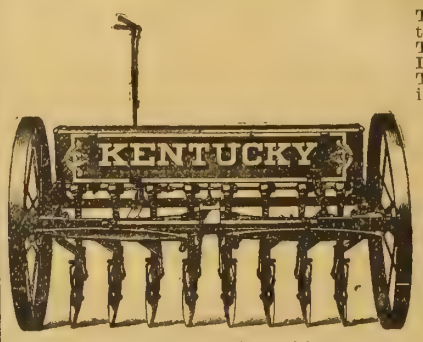
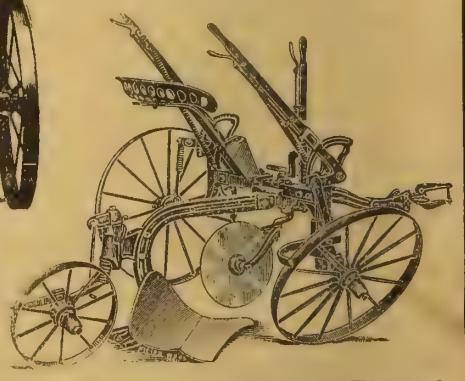
Kentucky Disc Drill Syracuse Sulky Plow

The axle of the Syracuse Sulky Plow is made of two steel bars placed parallel; is above the beam. This is a decided advance in plow constrnction. Is a modern plow for modern farming. WRITE TODAY for illustrated circular. Sold by leading dealers or direct by us.





The record of this Disc Drill on this coast has been phenomenal. Its extreme simplicity, strength and general appearance has made it sell. The Kentucky Disc Drill now contains many improvements over its predecessors and many advantages not possessed by any other Disc Drill. Write for illustrated folder. It may mean much to you.

ARNOTT & CO., **112-18 So. Los Angeles Street Los Angeles, California**

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who have used our goods once, will always come to us for their fertilizers. We are making a special study of plant life and are therefore in a position to manufacture fertilizers that exactly meet the requirements of each plant. Let us know what you intend to plant, and we will name your special compositions. Write for our new booklet "The Farmers Friend," for 1909.

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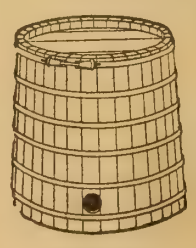

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WINDELER'S PLANING MILL AND COOPERAGE

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Geo. Windeler
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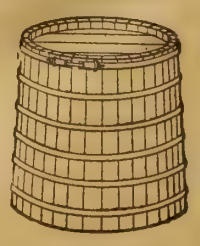

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When writing advertisers, mention Cultivator.

California Cultivator

Vol. XXXII—No. 10 Los Angeles, California, Thursday, March 11, 1909 Subscription $1 a Year

The Minus Quantity in California Soils

An Address by Prof. G. W. Shaw of the Cereal Investigations of the State University at the Last State Fruit Growers Convention

UNDER the above title the writer proposes to set forth what he believes to be the most vital question confronting the farming and horticultural interests of California today. I may perhaps be pardoned for saying that this impression has not been formed hastily, but is the crystallization of a somewhat careful study during the past seven years both in the field and laboratory of the soil conditions as they obtain if not in all, still in most parts of the state.

While these investigations have had mainly to do with the underlying causes for the low average production per acre of field crops, particularly grain, yet in the prosecution of this special work I have become impressed with the unmistakable fact that many fruit and vine growers in Northern California are facing much the same problem.

In the case of the general farmer the gradually reduced wheat yield per acre leading to a change from wheat growing to barley growing, and the subsequent gradually diminished yield of this crop has forced him to ask the very pertinent and fundamental question, "Why are soils which in our fathers' hands were so productive now giving so meager returns?" This is still more evident in the case of the fruit grower by his blind rush to the commercial fertilizer market for some sort of a cure-all to remedy a condition that he sees is already upon him or one which he wishes to avoid.

The Popular Explanation.

The general supposition, though erroneous, is that plant food content if not absolutely gone is reduced to a minimum—that the soil is exhausted. Both the supposition and the usual conception of the meaning of the term fertility are incorrect.

The chemical phase of the subject is over-emphasized. The terms plant food and fertility are not synonymous. The latter refers only to the ability of the soil to produce crops, and the plant food of a soil is only one of the attributes, and often not the main one in crop production. Moisture, warmth, and aeration; soil texture, soil fitness; its tillage, drainage, and irrigation, are all quite as important factors in the productiveness of fertility of a soil as are fertilizers. The crop producing power of a soil constitutes its fertility and not simply the three or four forms of plant food present, and the maintenance of fertility involves such an all-around handling as will conduce to maximum effectiveness. Both science and the better practice is laying more and more stress today upon the direction of natural forces, the same that built the soil in its pristine vigor of years ago, on the conservation of the inherent richness of the soil, and on the acquirement of plant food supplies from the air and the subsoil, but the popular mind is still fixed on the idea that a fertilizer is a panacea for all soil ailments. The purchase of plant food when needed is an important matter and should not be neglected, but no fertilizer can act as a substitute for proper soil management.

There are, of course, soils and soils, some which from the outset are relatively unproductive unless assisted; others which are at first fertile but which become rapidly depleted; and still others which maintain high productiveness for many, many years. But the best of them show wear if improperly managed; yet even though they may have been grossly abused most of them may be renovated.

Neither the cereal nor the horticultural soils of California are exhausted or worn out—many are depleted, but there is an immense amount of inherent richness in most soils, even in the poorest. In a certain table which is supposed to show 15 representative samples of so-called "worn out soils," the nitrogen content in but one sinks below 1,100 pounds in the top eight inches, and but twice below 1,500 lbs.; the phosphoric acid content but once falls below 1,000 pounds, and but three times below 1,500 pounds; while the two lowest potash contents are 1,000 and 1,200 pounds and the next lowest is 4,000 pounds. The average nitrogen content of these soils is above 3,000 pounds, 5,000 pounds phosphoric acid, and 17,000 pounds potash in the top eight inches, and these figures may be ordinarily doubled for the next eight inches will usually show as much as the top, and is available for most crops. If we compare these figures with those indicating the draughts made by most crops the supply of plant food would not be exhausted in 500 years.

The figures express for the most part latent rather than potential plant food and are merely given to enforce the thought that soils are seldom if ever denuded of their plant food entirely. The causes of lessened crop production lie partly in a shortage of soluble plant food, for only a small amount of the total plant food is potential at any one time, but is more often the result of a wretchedly bad soil management on the part of the grower himself. We have not given the ounce of prevention and consequently we must pay for the pound of cure. Nature made the soils of our valley friable and absorptive, but we have sacrificed this condition for the immediate dollar, and now we must pay double the price to restore it. Nature will restore the condition but she is unrelentingly slow.

This minus quantity of our soils lies not so much on the chemical side of the soil as upon the wretchedly poor physical condition induced through the lack of any attempt to return to the soil that vital attribute which makes for productiveness, humus, which together with rational tillage and the use of manures constitutes the best key for the unlocking of the latent plant food mentioned previously.

Failure to realize the importance of this most vital question,—the restoration of humus,—has led to lessening the retentiveness of our soils for moisture, especially in the upper layers, a very serious matter in our climate of fickle rainfall; a lessening of available plant food; the making of the soil colder, and the increasing of the cementing action in the case of heavy soils and increasing the tendency of light soils to drift.

The maintenance of fertility or productiveness of soils is very largely a matter of the up-keep of its humus content. The "first aid to the injured soil" abused and depleted, should invariably be to supply it with a good quality of humus. We shall not attempt at this time to go into a scientific discussion of what humus is, but shall pause only long enough to say in this connection that humus is a variable, indefinite sort of matter, difficult to classify chemically, complex, sometimes highly nitrogenous and sometimes nearly nitrogen-free, composed of mixed animal and vegetable matter—mostly the latter—in its intermediate forms of decomposition, far along in decomposition, but not complete. It is the result of the partial decomposition of the organic matter of soil, leaves, sticks, straw, stubble, roots, sod, green crops turned under, and the like.

Both Chemical and Physical.

During its process toward final destruction, and while being made into mold, this material is useful to the soil. It was that which gave the lightness and tilth to it in the earlier days through its accumulation for countless years, and which when many began to cultivate the soil was rapidly destroyed. During its formation it acts both in a chemical and physical capacity, which may be summarized as follows:

It benefits the soil chemically:

1. By supplying nitrogen directly;
2. By supplying phosphoric acid, potash, and lime indirectly.

It benefits the soil physically:

3. By augmenting its water-holding capacity;
4. By increasing its warmth;
5. By bettering its texture.

It benefits the soil biologically:

6. By affording food materials for micro-organic growth.

Humus as a Supply of Nitrogen.

The nitrogen of the soil other than that captured from the air by means of leguminous plants is of humus origin. This is a raw material from which nitrates are formed. Humus obtained from different sources carries different percentages of nitrogen, that obtained from stable manure and from leguminous crops being of the most value. It is generally stated that the humus content of the soil extends only to a depth of eighteen inches to two feet, but extensive experiments recently conducted in California on soils which have been cultivated to grain for many years show that the humus content extends very much deeper than this, even to the extent of six or eight feet, but the important fact is also developed that in this soil which has been cultivated for so many years the top foot carries only about one half as much humus as does the second foot, and is in much poorer tilth than the second foot. This means that from a chemical standpoint so far as nitrogen is concerned, in the case of deep-rooted plants, if we take pains to maintain the humus already there found and restore the content of the top foot, we shall continue to have soils which are well supplied with nitrogen. The top foot of this soil, however, is in extremely bad condition, which becomes evident from its great tendency to dry out rapidly and to become very cloddy and heavy.

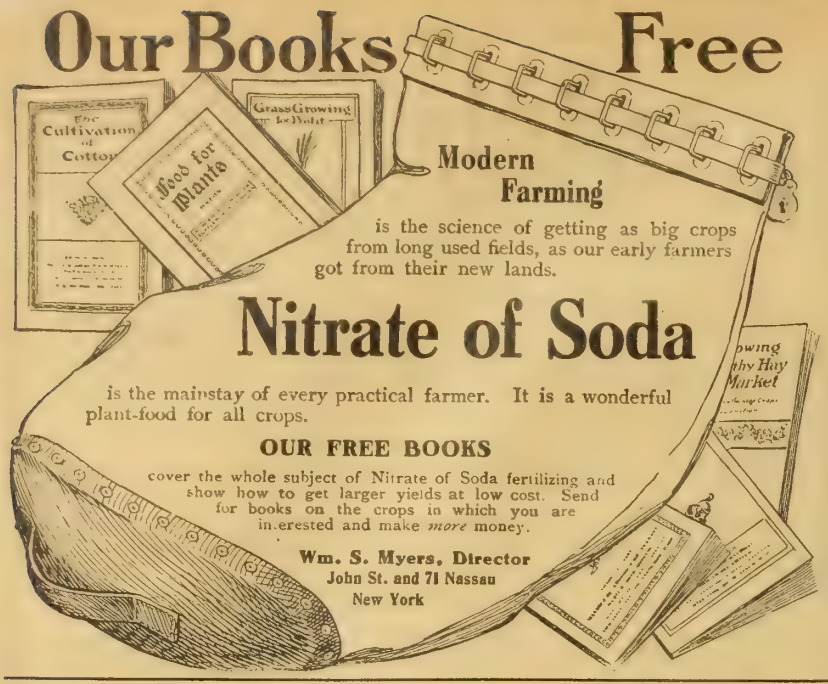
Humus as a Supply of Mineral Plant Food.

During the processes of humification acids are formed capable of dissolving more or less mineral matter. The weight of evidence seems to show that potash, lime and other mineral forms of plant food are combined with the humus and in

(Continued on Page 294.

Next Week's Leader Will Be "Orchard Plowing," by Many Excellent Contributors

Our Books Free



is the science of getting as big crops from long used fields, as our early farmers got from their new lands.

Nitrate of Soda

is the mainstay of every practical farmer. It is a wonderful plant-food for all crops.

OUR FREE BOOKS

cover the whole subject of Nitrate of Soda fertilizing and show how to get larger yields at low cost. Send for books on the crops in which you are interested and make *more* money.

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WILLIAMS' GOOSE-NECK CULTIVATOR

Patent applied for
ARNOTT & CO., General Distributers,
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Especially adapted for citrus orchards. Sizes 7 to 14 ft. Lightest draft. Write today

WILLIAMS & SON, Mfrs., Orange, California

The Roessler & Hasslacher Chemical Co.

100 William Street, New York
Works: Perth Amboy, N. J.

THE ROESSLER & HASSLACHER CHEMICAL COMPANY NEW YORK CHEMISTS TRADE MARK

CYANIDE guaranteed 98-99% for generating HYDROCYANIC ACID GAS

The only positive eradicator of the SAN JOSE SCALE, RED and BLACK SCALE and other insect pests

FOR SALE BY

F. W. BRAUN - Los Angeles and San Francisco
HAAS BARUCH & CO., " "

Gypsum
(Sulphate of Lime)
For Liming Your Soils

It corrects alkaline conditions. It breaks up the plough sole.
It disintegrates hardpan. It flocculates clayey soils.
It increases soil fertility. It increases yield of alfalfa 25%.

Prices on ton and car lots on application. Purity and prompt delivery guaranteed.

BOLLINGER & CRANE, Riverside, Cal.

George B. Warner's
Orange County Nurseries

Established 1889

Grower and Dealer in Citrus and Deciduous Trees of all Standard Varieties

Soft Shell Walnut Trees, 1, 2, and 3 years old. Grafted Placentia on Native Black Walnut Root and Soft Shell Root. Street and Ornamental Trees, Palms, Dracænas, Blue, Red and Sugar Gums (large stock.) Write for prices.

Sales Yard—Corner Sixth and Main
Residence—Tenth and Bush Sts
Santa Ana, California
Phone—S. S. Red 92

With the Citrus Growers

VALUE OF ORGANIZATION.

Already Porto Rico fruit growers are feeling the need of organization to secure proper returns to the producers. A recent issue of the Porto Rico News touches upon the requirements of that island and in support of its position for the growers standing together, quotes regarding the California Fruit Growers Exchange from the Washington Herald, which is good reading even for Californians who have pride in the fact that one of their great institutions is worthy to be used as a model for the world. The News says:

"Reference has been frequently made to the similarity of the present situation of fruit growing in Porto Rico with that of the early days of California and Florida. If the road lies clear before us why waste time in attempting short cuts only to be turned back by obstacles to the road we should have been following all the time. United effort is absolutely necessary for the prosperous future of the fruit growing industry of Porto Rico and upon each of us it devolves to delegate a small share of his independence of thought and action for the good of the whole."

The News then quotes from the Herald:

"But an orange grown is of very little account unless it can be sold at a profit. When Southern California first began to produce citrus fruit in considerable quantity it was found that it was so far away from the populous centers of the east, where it must find consumers, that the profits were often wiped out by freights and commissions. Men worked long years and planned skilfully, only to have the return from their fruit shipments "come back in red"—the fatal red ink of the account ledger.

"So it came about that economic science was applied to the packing, shipping and marketing of the fruit, completing the circle of scientific progress which wraps the oranges from the blossom to the breakfast table. The growers in each community formed local packing organizations, they in turn formed district organizations, and the district bodies formed a central concern, which is now known as the California Fruit Growers Exchange. This scheme of organization was worked out slowly and gradually, a step at a time.

"The first movement toward intelligent co-operation was the result of the disastrous years of 1892-93. That year not only many growers had to furnish their entire crop for nothing, but to pay the packing and fruit charges besides, as the gross sales of the fruit in the east would not cover the expenses. Then a convention met, its declared purpose being to 'provide for the marketing of all the citrus fruit at the lowest possible cost under the uniform methods, and in a manner to secure to each grower a certain marketing of his fruit, and the full average price to be obtained in the market for the entire season. This purpose has been accomplished.

"In the old days the growers were all in cut-throat competition with each other. There was no such thing as uniform grading and packing. The packing cost the small grower much more in proportion than it did the larger grower, the oranges were sold through speculative commission merchants, and all hope of profit was buried under the mountain of packing oranges, freights and commissions.

"Now the central exchange buys material for packing in immense quantities for distribution among the co-operating packing houses. Nails are bought by the trainload, "shooks" for the boxes on enormous contracts. There is a uniform system of packing and branding which not only rewards the grower of the best fruit for his skill, but which assures the consumer of a high and uniform quality. The exchange maintains offices in all the principal cities of the country, and in the European capitals, through which the product is distributed.

"This co-operative system enables the growers to market their product with all the advantages of modern methods of business which are usually accredited only to "trusts." The exchange is not a trust, however, in that it does not fix prices and that its work is done without contemplation of a profit for the central organization. The packing, handling, and distribution of the fruit is done at cost.

"The annual business of the exchange has grown so that its net profits are now more than $12,000,000 annually. Of course, this exchange does not handle all of the output of the citrus region. Ten years ago its shipments were 25 per cent of the total. This year they will be more than 60 per cent. The larger private growers handle their own fruit and there are other co-operative associations which take care of the output from many small growers. Including these, about 80 per cent of the total crop is marketed on the co-operative or direct basis and only 20 per cent is handled by commission merchants.

"Progress is never content and never stops. The California Fruit Growers Exchange, now that it has a profitable entrance to the markets of the country, is engaged in efforts to improve the market by increasing the demand for its product. The first attempt ever made by a systematic advertising campaign to increase the consumption of a natural product of the soils is to be credited to this organization.

"The experiment was tried three months ago. Iowa was selected as the state for the trial, on account of the fact that the office of the exchange in Des Moines covers the entire state and does not lap over into any other state.

"A special train loaded with oranges from the 4,000 co-operative orange groves of Southern California was despatched from Los Angeles to Des Moines. Daily newspapers in every Iowa city heralded the coming of the "Iowa Orange Special" in half-page advertisements paid for by the Exchange. This was supplemented by advertisements of the local fruit dealers announcing a special Orange Week. Oranges were extolled as: 'Just the spring tonic needed for yourself and children. Nothing in the way of fruit has so much tonic value as orange juice. An orange with every meal means increased appetite, bet-

ter digestion, a clearer brain, and a better constitution in every way. Oranges are prescribed by physicians for their medicinal properties and for their food value to nerve and brain. All during the warm, enervating spring and summer weather, orange juice is most cooling and refreshing.'

"The best skill of the ad writer was employed, dates of the orange week were emphasized, and the demand was made that the consumer see that the name of the California Fruit Growers Exchange was on the box. The result was a wonderful stimulation of the habit of orange eating in Iowa. The advertising will be kept up in a smaller way for a while. If the orange consumption in Iowa is permanently increased, as the heads of the exchange believe it will be, then this advertising campaign will be extended to other parts of the country and will be continued indefinitely. The theory is that people would eat more oranges and other fruit if their attention were called to it by the same methods which have so greatly increased the consumption of the cereal breakfast foods.

"Truly, progressive science has done wonders for the citrus fruit section of California. The beautiful orange groves, with their trim trees of dark green, embellished with golden globes, tell a story of conquest of the arid desert, of the conquest of pest and disease, of the triumph of the horticulturist in improving nature's own product, of the annihilation of distance which intervenes between the grower and the eater."

THE ORANGE IN FLORIDA.

The orange is the leading tree fruit of Florida and up to the year 1894 it might be said to be the only one in which an interest was taken by resident and non-resident owners. But the lesson of the 1894-5 freeze was taken well to heart by those who were permanent residents. Gradually, diversification of crops, especially along vegetable lines, introduced an element from which an annual income was derived while waiting for the orange trees to be rehabilitated and become once more a source of profit.

But the great orange groves belonging to non-resident owners fared worse. So many were abandoned that it seemed as if Central Florida was given up as an orange growing section and this important industry turned over to the lower counties of the peninsula. Though it was not the first time that Florida orange growing had received a serious setback, one had but to recall seasons of drought, of early and late frosts, of destructive insect pests against which the Northern horticulturists have to contend, to realize that nowhere is there perfect freedom from failure, and that Nature, though often dealing blows, endeavors as soon as possible to make up for them.

The five million box mark reached in the season preceding that freeze has not yet been restored, but the number of non-bearing trees reported in 1905 leads to the belief that, in two or three more years, it will be. One and three-quarter million of such trees were added in that year to the one and a half million in bearing. Two years have elapsed since then, and it is safe to assume that there are close upon five million bearing and non-bearing orange trees in the groves of Florida today—these, in about one-half the counties in the state of which the seven principal ones are Brevard, DeSoto, Hillsboro, Orange, Polk, Putnam and Volusia.

About three million boxes was the record for 1905. Owing to the unusual drought that prevailed in 1906 and also in the early part of 1907, this record has not been maintained, though the increase in bearing trees has kept the yield in the neighborhood of two and a half million, with fairly good prices, the valuation being figured at $3,356,609, or about $1.12 per box. At one dollar per box as an average price there is good money in growing oranges in Florida despite the competition from home states and the West India islands, and even Mexico, which is coming into importance as an orange growing country.—Florida Fruit and Produce News.

The Y. M. C. A. of Riverside is giving a practical course of lectures on agricultural subjects. Lemon pruning was the subject of a recent meeting.

DEAD CITRUS WOOD

Is more or less prevalent in every orange and lemon grove, i. e., trees that are unprofitable. How many such have you in your orchard? Would it not pay you to put paying trees in their stead?

Your Home Grounds

Should contain at least a few trees of the better varieties of oranges and lemons. For this purpose we have some exceptionally fine trees to offer, being grown as specimens. Possibly you would like to plant a few citrus trees about your home this season. If so, will you do us the favor to correspond with us about it?

Citrus Fruits

Historically, Horticulturally, Commercially.

Our new booklet gives more valuable information about varieties, methods of planting, cultivating, pruning, picking, packing and shipping than anything of its kind ever issued. Sent anywhere for the small sum of 25 cents. Correspondence a pleasure.

The San Dimas Citrus Nurseries

R. M. Teague, Proprietor
San Dimas, California

Orange Trees For Sale

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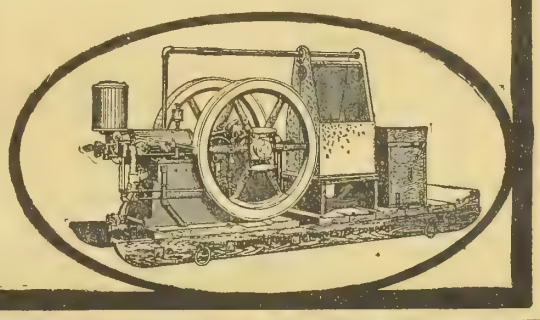

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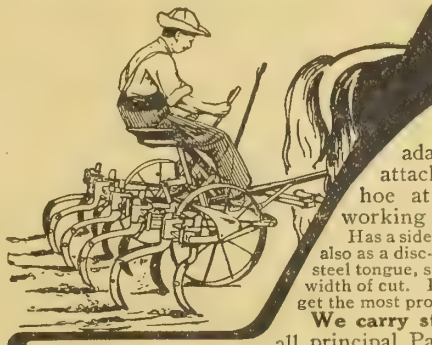

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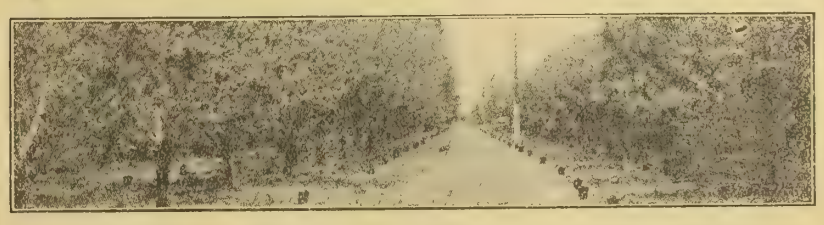

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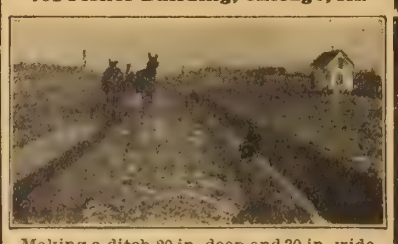

Making a ditch 20 in. deep and 30 in. wide

Deciduous Fruit Culture

By J. W. Mills

ALMOND CULTURE.

Almond culture is one branch of fruit growing in California that has never been overdone. The question is often asked us, "is almond growing profitable?" No doubt it is in some localities. There are few localities however where they can be safely grown. After blooming time they will not stand any frost whatever. We have seen almonds killed when nearly full grown, the trees in full leaf and apparently past all danger from frost. The trees were beginning to sag under the weight of the fruit and a full crop seemed assured. Young oranges the size of peas in adjoining rows were uninjured and even the tender succulent growth on the ends of the almond and orange trees showed not the least sign of frost injury. The almond nuts did not show any injury for several days, when they commenced to drop, and investigation showed a slight discoloration of the jelly-like substance that develops into the fruit. There were about thirty trees representing seventeen varieties, with nuts in various stages of development, from the size of a pea to nearly grown almonds. There promised to be a record crop of nuts, but less than a peck stayed on the trees. Within two weeks they were all on the ground.

There may be localities where late frosts never occur and other conditions are favorable to the growth and maturity of the almond, but we have never located them with assurance that they will hold the record for several succeeding years. There is a district in the west end of Antelope Valley which I investigated one time, and while the finished product was unexcelled, the result for that season showed an average of three-fourths of a pound of nuts per tree. The trees were twelve to fifteen years old, but a dry season and frost cut down the product. March 2nd showed that one-third of the bloom was out. On March 19th the thermometer got down to 28 degrees; April 3rd to 13th it occasionally struck 30 degrees and 32 degrees. On March 10th the trees were in full bloom. These conditions were not usual, but they do occur, showing that the most favored spots are occasionally out of the race.

There is a small almond orchard adjoining the government date garden at Indio, which is now in bearing. This is its third bearing season, and being of the Jordan variety should be a good test as it is an early blooming variety.

A locality in which frosts occur but once in four or five years after the middle of February, should be well adapted to growing almonds. This applies to sections outside of the desert. There is no possible way to ascertain where such places exist except by actual experimentation. It is a fact that one particular place will be visited sometimes by frost, while one near by will suffer severely at another time.

For this reason almond growing is an uncertain venture. Statistics show that there is considerably less acreage devoted to almond growing in California than there was a number of years ago. This is due to the uncertainty of getting a crop.

There are many fruit crops that give each year an income that can be relied upon, which is more satisfactory to most people, even though they do not average up with almonds.

There were in Sutter county many years ago, two old almond orchards on adjoining ranches; one was on an elevation which answered all the requirements of an ideal situation. The trees were carefully cultivated and given all the care necessary to make them thrifty and appear well.

The other orchard was on lower ground used as a pasture for many years, while the first named orchard was being cultivated. The almond orchard used as a pasture was sown to alfalfa, which resulted in a poor stand, and the trees being more or less injured by stock, while young, made a poor stand of both trees and alfalfa. The result was that when the trees became old, they had plenty of room and grew large and bore well. This orchard produced on an average $100 per acre in nuts, while the other orchard paid much less.

The lesson we drew from this was, that too many of our almond orchards are planted too close, and while the orchard we have in mind was handicapped by neglect, the ample room given the trees more than made up for this.

The great majority of almond groves which have reached the age of twelve to twenty years, have their branches either shooting up into the sky or interlocked with adjoining trees. This fault may have as much to do with lowering the returns from almond culture as occasional late frosts in favorable localities.

It is now a settled fact that better results are obtained when two or more varieties are planted in close proximity. Ne Plus Ultra, I X L, and Golden State are three of the best commercial varieties. Hard-shells also pay well even though the price is but half.

Two rows of each variety planted alternately in an orchard will insure all the benefit obtainable from cross pollination. The trees should be planted not less than 30 feet apart each way. When they are fifteen or twenty years old they will nearly meet at 35 feet. It may be practical to grow peaches in the center of the squares when planting 30 to 35 feet apart and at the end of eight or ten years they should be removed; during this period the peaches will produce several good crops. Berries or alfalfa would perhaps be better, but irrigation would have to be practiced in that case. Any rich sandy loam is suitable for almond growing.

Almond trees come into bearing at three to four years, but profitable crops cannot be expected under five or six years. Paper shells produce six to twenty pounds per tree at this age, while hard shells produce two or three times that amount.—J. W. Mills.

The unversed cannot tell much about the speed of birds or insects. The cormorant seems to fly slowly, yet it travels about a mile a minute, while the bee, which appears to be going like a bullet, only goes a mile in two minutes. Many sportsmen think a quail flies faster than a duck, but it does not.

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PRUNING THE APPLE TREE.

THE apple is the most cosmopolitan of orchard fruits and the one about which there seems to be more varied opinions in regard to the pruning of it. Every apple grower is confronted every winter with the question of how best to prune his trees. While pruning is a natural process it should be avoided as much as possible as the tree gets older. The heaviest pruning, in proportion to the amount of tree top, is done during the first two or three years of the tree's growth. During this time the apple tree should be properly started and should be well pruned so that when it comes into bearing it will not be necessary to prune it severely.

Two forms are generally considered in the starting of the young apple tree in the orchard, the low and high headed tree. The choice of either one of these forms depends, to great extent, on the cultural methods to be followed by the orchardist, and upon the climatic conditions. The high headed tree is perhaps better suited for northern and eastern conditions while the low headed tree is better adapted to our section of the country.

The first pruning of the young apple tree, after it has been transplanted to the apple orchard, should be carefully done as at this time we determine the height of the trunk. The top should be cut back to about twenty-four inches from the ground. The following spring a number of limbs will develop from the trunk. Three to five limbs only should be allowed to form the scaffold. At the next pruning, the following spring, these scaffold limbs are again cut back somewhat and any interfering limbs are also removed. At the third and even the fourth pruning the limbs should be cut back and the tree rounded generally. By this method of pruning the tree is shaped up and it may be properly started.

While there are some fruit growers who claim that the bearing apple tree should be cut back every year the nature of the growth at that time in this climate does not warrant such practice and on the whole the results are not so satisfactory. The bearing tree should be pruned as lightly as possible. It does not produce the same rank growth that the young tree does during the first few years. A great deal of the vitality of the bearing tree is used up in the production of the fruit, and in fruit spores for the following crop. While the tree does not require severe pruning it should be pruned a little every year. All the dead and broken limbs should be removed as well as those which interfere. Avoid the cutting of large branches.

The limbs should be cut as near the trunk as possible so the wound may heal over quickly. Never cut limbs so as to leave a stump one or more inches in length. Such stumps if left never heal over. The healing of the wound depends on the activity of the cambium layer. This layer is most active in the spring after the tree starts to growing. The longer the wound remains exposed the more it will dry and crack. Wounds which are made in the fall or mid-winter necessarily remain longer before the cambium layer begins to grow over them than those made in the spring just before the tree starts to growing. While trees can and may be pruned any time during their dormant period—that is during the fall, winter, and spring—the preferable time is in the spring, shortly before growth begins. —Fabian Garcia of New Mexico Ex. Sta.

BUDDING GRAPE VINES.

IT is quite often desirable to work over the tops of vines without cutting off the well formed crown. In 1888 budding in one-year-old canes was successfully done, one grower stating that he had practiced the method a number of times, and seldom, if ever lost a bud. He saved the canes of the variety desired at pruning time and when the sap was flowing freely in the spring, he budded just as he would peach, plum or any other nursery stock.

Herbaceous budding is another method of changing the variety of grapes without sacrificing the top. The vines are pruned in the usual way and at a certain stage of growth of the young shoots, buds are inserted and tied in just as in ordinary budding. There is a certain stage of growth when the new shoots can be slightly bent without snapping in two. An incision is made lengthwise in the cane, about an inch and a half long and by bending that part of the cane inward, the bark separates and bulges outward. A bud, cut in the usual way, is inserted while the cane is so bent as to cause the bark to bulge. When the bud is inserted and the branch released, the bark will resume its former position, excepting that it is now pressing down on the bud and holding it firmly in place. Wrapping with waxed cloth, or twine, will serve to seal up the incision so as to exclude the air. Unwaxed twine or cloth will serve the purpose, but its use requires more time. Vines budded in this way will, if carefully done, be quickly and satisfactorily converted into any variety desired.

There is a certain method of making the bud that must be observed. It should be taken from growth of about the same maturity as the stock into which it is inserted. The stem of the leaf at the bud, together with part of the leaf about the size of a nickle or a twenty-five cent piece, should be left on the end of bud. The bud, with this leaf stalk with its leaf trimmed to the size described, is inserted as told above. In a few days the leaf stalk will indicate by its color and texture whether it will grow or fail. If it makes a union and grows, the leaf stalk will proceed to ripen and soon drop out in a clean cut manner. If no union takes place, the leaf stalk of the inserted bud will shrivel, turn dark and stick to the bud.

About two weeks after the budding is done the wrapping should be cut on the side opposite the buds. As soon as the union is well grown over, cut the canes off about two buds beyond the inserted one. As soon as that makes a good start the canes may be trimmed up to them or they may be left till next prunning time.

NUT GRAPE JELLY.

Dissolve one-half package of gelatin in cup of water, pour same into one pint of boiling grape juice sweetened to taste. When half congealed stir in 5 cents' worth of shelled walnuts, then pour in mold and set in cold place till fully congealed. Serve with whipped cream.

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Get your trees in the ground as soon as possible.

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and the rapidly decreasing stocks make it advisable for you to place your order at once.

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We have the largest and finest stock on the coast. Our trees are all true to name, strong and thrifty, and are properly prepared for shipping so they reach their destination in perfect condition.

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Special prices on our Royal and Blenheim Apricots and Myrobolan root and on the following varieties of peaches: Elberta, Lovell, McDevitt, Cling, Muir, Phillips, Runyons Orange and Sellers Orange Clings, Susquehanna, Tuscan Cling and Wheatland.

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Send us your orders and let us make a selection of roses for you. We will fill your orders with first class plants, our selection, for $1.80 per dozen.

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Small Fruits and Vegetables

THE RUNNING OUT OF SPUDS.

FEW PLANTS under cultivation are more susceptible to variation than the potato. The more a plant varies the greater is the chance for improvement with proper methods of selection and also a corresponding tendency to deteriorate when poor methods are practiced. We are all interested in the improvement of our potatoes. This has been brought about from the fact that we frequently get a variety that gives good satisfaction for a few years and then the yield decreases and the tubers lose their uniform appearance. Almost as many theories are advanced for this running out and remedies given as there are growers. A few of the remedies given are: Plant when the moon is right, always plant large tubers, never plant seed ends, always leave one or two eyes to a piece as the case may be, exchange seed, etc.

None of these remedies will prevent varieties from running out. The changing of seed may be beneficial, provided the person from whom the seed is gotten practices good methods of selection. The benefit derived is not from the mere fact that the seed is changed from one farm to another. Varieties run out when the seed is not properly selected from year to year. The place to select seed is in the field. If the variety is a good one any farmer with the proper knowledge can maintain its productiveness and quality with comparatively little time and expense and a careful farmer can increase its productiveness and improve its quality. As we dig potatoes or look at them in the bin we must note the remarkable lack of similarity or the tendency to vary that is exhibited.

It is a noticeable fact that some hills will have a large number of tubers, uniform in size and shape while other hills grown under the same conditions will have a few ill-shaped tubers or one large tuber and a few small ones. A tuber from vigorous productive plants although it may be the only small one in the hill, because it started late and did not have time to develop full size, will possess and transmit the characteristics of its worthy parent. So also the only large tuber from the poor hill in which it alone attained marketable size will transmit the tendencies of the hill. We see then that inspection of the individual tubers alone will not enable us to judge whether they are desirable for seed or not, but the whole hill must be examined.

The unit for selection is the plant and therefore the place to select potatoes for seed is in the field, where the whole plant can be examined. In 1907 we planted two patches each of twelve varieties of potatoes. One of each variety was planted with the large and small seed selected from the best hills. The other was planted with seed selected from medium to poor hills. As near as it was possible the two patches of each variety had the same kind of soil and treatment. The results were interesting. The average yield of the field planted with tubers from medium to poor hills was 6,100 pounds. The average yield of that planted with tubers from the good hills was 8100 pounds or a gain of twenty sacks to the acre. The crop from the good hills was not only larger but the tubers were more uniform in size and appearance than those from the medium to poor hills. —Denver Field and Farm.

RAISING CUCUMBERS FOR PROFIT

The earlier cucumbers can be marketed the greater the profit to the grower, says an Eastern writer. In fact there is seldom any profit in late ones. To get them early the plants must be started in hot houses or hot beds. Nearly all growers use hot beds heated by fire. They are usually five feet nine inches wide, and they can be made any length up to 200 feet. But a bed seventy-five or eighty feet long will prove more satisfactory than one of greater length, because it can be heated more uniformly and with less fuel.

It is important to have the hot bed on a sheltered spot with a sunny exposure, and there should be slope enough to insure a good draught in the flues. The furnace, or fire box, must be at the lower end, and outside of the bed. Two flues are necessary to heat the bed. They should be five inches from the sides, and extend from the furnace to the upper end of the bed where they terminate in chimneys six or eight feet high. The flues are simply trenches with sloping sides ten or twelve inches deep, and covered with flat stones. The dirt over the flues should be thirty-six inches deep at the furnace, and taper down to about eight inches at the upper end, in a bed eighty feet long. Some time before the bed is to be used it should be covered with two or three inches of well-rotted manure and this should be worked in, and the surface thoroughly fined just before the seeds are planted.

The seeds are planted in dirt bands. These dirt bands are bottomless boxes made of thin strips of veneering four inches square and three inches deep. They are placed snugly in the bed without tacking and filled with good loamy soil from the woods. The soil in the boxes is firmed down before the seeds are put in. If the seeds are good, three in a box are plenty. The soil should be screened for covering the seed, and care should be taken not to cover them too deep. It is important to have the bed well warmed up before the planting is done. If conditions are favorable the plants will be up in three or four days.

Success in growing cucumbers depends much upon the selection of the soil. They must have a loose, loamy soil with an abundance of humus in it. It is useless to plant them on a compact clay soil. The ideal cucumber land is a sheltered valley protected from the northwest winds, and having a southeast exposure. From such land heavily manured and properly prepared and cultivated a prodigious yield of early cucumbers can be obtained.

The land should be plowed in the fall and a heavy coat of manure worked in with a disk. Thirty tons to the acre are about right. Plow the land again in the spring as soon as the ground is dry enough, and harrow thoroughly. Mark off the rows four feet apart each way, and put a forkful of well-rotted manure in each hill, and cover it with two furrows with a one-horse turning plow. The hills are then opened up, the manure well mixed with the soil, and the plants put in. If the plants are properly wetted down in the bed, and carefully handled and properly set out, they will hardly stop growing.

Start the cultivator as soon as the plants are all in the field, and keep it going till the vines interfere. Cultivate deep and close to the plants until they start to run. After that keep away and run the cultivator shallow so as not to mutilate the roots.

The Ornamental Garden

COMMERCIAL BULB GROWING.

THE following paper was read at the Pacific Coast Nurserymen's Association meeting recently by A. Lingham, a nurseryman at Puyallup, Wash.:

It is usual for a man while carrying on his regular business to seek some relaxations from the daily routine. He becomes interested in some scientific problem or branch of work entirely outside his own profession, in which he finds rest and recreation. So he leaves the main track for a run over the branch line, landing among his favorite haunts cultivating a hobby.

A nurseryman seldom has much idle time on his hands; but we often find him raising fancy chickens, conducting a dairy farm, or cultivating some special crop, not listed in his catalogue, just to keep him busy.

My little hobby has been growing bulbs, and they have had a special interest for me, ever since I went rambling over the foothills and valleys in search of the wild ones.

The alluvial soil of our valleys and river bottoms, having natural drainage and plenty of available moisture, furnishes the ideal conditions for growing bulbs and the crop is as certain as producing ordinary vegetables. Hyacinths and tulips are grown equal to the best imported bulbs.

The large bulb farms in Holland contain as high as forty acres, and within the next ten or twenty years we ought to have a few of this size in operation along this coast; in fact, as recently published in the Horticulturist, a company is already organized in Whatcom county, Washington, to start a forty-acre bulb farm, and we trust that Mr. George Gibbs and his partner will meet with every success in their new venture.

This coming industry has long passed its experimental stage, and the high-grade bulbs producing their fancy flower spikes form the best argument in its behalf.

Hyacinths and tulips we plant in October for best results, and the crop is ready for harvest the following June. Crocus are planted fully a month earlier as these naturally blossome and mature quite early. Tulips increase three to one on an average. There is the No. 1 large flowering bulb, the No. 2 size for planting out again, and the No. 3 or small bulb, which requires two years' growth to form the large fancy bulb. Our experience with hyacinth bulbs is that they grow larger and more solid each year where conditions are favorable, The large bulbs we use for propagating and cut them to make them multiply. We planted some young bulbels one-fourth inch in diameter last fall; in digging them this summer they measured one to one and a half inches in diameter, smooth, round bulbs.

In Holland I believe the bulbs are planted in uniform beds of four feet wide, with the rows six and eight inches apart, and walks eighteen inches between beds. This system requires cultivating by hand entirely, or some method of mulching to keep down the weeds. Women and children are largely employed on the bulb farms, and work for small wages. Ten rows of crocus bulbs are planted in a four-foot bed, which is not leaving much room for cultivation.

We plant hyacinths and tulips in rows eighteen inches apart and the crocus one foot between rows, using wheel hoes and cultivators to give clean cultivation through the growing season.

For commercial planting it might be more profitable to keep the rows about two and a half feet apart or wide enough to admit of cultivating by horse, and materially lessen the expense of so much hand labor.

When storing bulbs away we first remove the stems and old loose skins, then place in flats or shallow boxes about three inches deep, piling them crosswise in a cool ventilated shed or store room. This preserves the rich chestnut brown color on the tulips and keeps hyacinths and other bulbs plump and sound till fall planting time.

Millions of bulbs are imported each year with the demand steadily increasing, and varieties that have been cultivated for over three hundred years are still as good today.

When we consider the natural adaptability of our soil and climatic conditions to their culture, we have every reason to look on this as one of our important industries, and when we have furnished the supply for the United States we might grow some for export instead of importing our supply from Europe as in the past.

OVER POTTING OF PLANTS.

Many persons make the mistake of setting small house plants in pots that are too large for them. These large pots require more window space than would be needed for smaller ones, and with some kinds of plants it tends to lessen the amount of bloom. There appears to be a sort of instinct in many plants that prompts them to put forth their best efforts to reproduce themselves when their environment does not seem conducive to their own long life. And as nature's way for most plants to reproduce themselves is by seed, and seed is produced only in the flower, a show of bloom is made by the plants when the roots are somewhat crowded and the supply of soil not too great. Most experienced florists claim that the best method is that of repotting plants into larger pots only as they actually need the increased space. The right time to move a plant from a small to a larger pot is shown by the roots beginning to mat around the outside of the ball of earth next to the edge of the pot. The ball of earth may easily be removed from a pot by turning the pot upside down and tapping it slightly on the edge of a table. Be sure and provide for good drainage in the new pot by putting a few pieces of broken porous crockery (small pieces of broken flower pot answer admirably) in the bottom.

The Japanese morning glory is quite a gorgeous plant, its vines attaining a height of thirty to forty feet in a short while and making a dense, luxuriant screen of foliage that is variously mottled. A chief attraction about this plant is the size and coloring of the flowers. They grow four to five inches across and include all colors and combinations from deep velvety purple to the daintiest blue, from snow-white to soft rose, through all the shades of crimson and red to rich garnet. Some of the blossoms are rich deep shades and others are of the most delicate tints. There are also solid velvety colors, while others are mottled and spotted. Blooms are furnished in profusion and the plant is quite desirable for porch planting.

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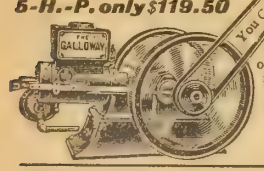

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Irrigation and Forestry

ABOUT IRRIGATION.

THE ownership of water for irrigation is as important to the farmer as the ownership of the land. In arid countries the water is often the most valuable of the two elements, land that is practically without value being made valuable by the application of water. It frequently happens where the water supply is limited that lands for which water is available has a high value while adjoining lands of exactly similar character are practically worthless. This being true, it is readily apparent that the ownership of water is at least equally important with ownership of land, and that the ideal condition, from the standpoint of the farmer, is the ownership by himself of both.

In the broad sense the community at large has an interest in both the land and the water that is superior to that of the individual owner, whoever he may be, but the present civilization regards private ownership of the agricultural lands by men who live upon and till them as the best method of conserving the public interest and promoting the public welfare. Land laws of the United States have been from the beginning designed to place the lands in the hands of men who would use them. This purpose has not always been achieved. There have been bad laws as well as good; but it will probably be conceded that the American people as a whole have desired the enactment of laws that would facilitate the acquisition of the farming lands by practical farmers. This is the correct attitude. It is eminently right and proper that the man who tills and lives upon the soil should have his tenure assured.

Our attitude toward water necessary to irrigation and used for irrigation should be the same, but unfortunately it has not been the same. Early settlement in this country was in those sections where rainfall is abundant; when the march of civilization reached the arid lands the conditions encountered were new. A people to whom the ownership of land had been all important very naturally continued to so consider it, with the result that all too little thought was given to the ownership of water. The diversion or distribution of flowing water in considerable quantities calls for large investment, in labor and machinery, in dams, dikes, and canals, and water laws were so framed as to encourage the investment of capital in irrigation systems as a distinct enterprise. To a very large extent it is still so regarded; but there is a growing appreciation of the fact that the ownership of water is not less important to the farmer than the ownership of land, and a strong tendency to develop irrigation systems under conditions that provide for and insure their ownership in common.

The ideal system of water ownership is that which makes the water forever appurtenant to the land. The ideal water development is that in which the costs are borne by the land. The best attribute of farm life in America is the independence of the farmer. In the humid states ownership of the land he farms is sufficient to this end. In the arid states the ownership of both the land and the water is essential to real independence. Ownership of the water supply in an arid country is more important than ownership of the land because without the water the land has little or no value. Every evil that attaches to a system of landlordism and tenantry may attach to divided ownership of lands and of water used for their irrigation. Every advantage which the farmer obtains is from ownership of the water with which he irrigates.

This is a matter of vast importance to the people of the United States, for it bears directly upon the most important problem of our national life—that of maintaining upon the soil a prosperous, independent, home-owning population. Millions of acres in the West must come under irrigation, and it is of national important that these lands be developed under conditions assuring the greatest freedom and highest standard of citizenship. The water must be appurtenant to the land.—The Great West.

WATER CODE DEMANDED.

The State Grange of Oregon adopted the following:

That it is the duty of the State of Oregon, at the earliest possible time, to codify and enact a complete, concise and definite water law, leaving to the courts only the mere interpretation of this law on such occasion as it might be brought into dispute;

That such water law should be based upon the best experience of other states and countries, such as Wyoming, Idaho and Canada, and should include the following fundamental principles:

1. That no water right should become vested except by direct grant from the state.

2. To provide a system whereby the priority and limitations of every existing right to the use of water can eventually be ascertained.

3. To provide a reliable record in some central office of all water rights as determined, and of new rights as initiated.

4. That actual measurements of ditches and streams be made as a basis for the adjudication of existing rights and the initiation of new rights to the surplus water, if any.

5. To provide a definite procedure whereby rights to such surplus water may be acquired.

6. That beneficial use should be the basis of all rights to the use of water, and that water for irrigation purposes should be made appurtenant to the land irrigated.

7. All rights to the use of water for power development should be limited to a period of 25 years, subject to renewal under certain restrictions.

8. To provide an efficient administrative system, with proper officers, for the distribution of the water supply among those entitled to its use.

Forest Supervisor C. H. Shinn has issued a schedule for prices and time for pasturage of cattle on the National forests for next season. Prices for cattle will be 30 cents, horses 40, and they will be pastured from June 1st to October 31st, or a year-long fee may be paid of 50 cents per head on cattle and 70 cents per head on horses.

Sonoma Pomona Grange held its last regular meeting at Petaluma.

Live Stock and Dairy

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By Mrs. Minna E. Sherman

SWINE.

THE use of improved varieties of hogs for the increased weight on the same amount of food at the same age makes it pay well. This weight is gained almost from the start so that the six months old pigs are larger, being both thicker, taller and longer than the pigs from the common sows down in the pens today. There are some sows in the pens that are two and three generations from the common stock and in even their pigs the difference shows up strong. It is not necessary to examine the ear markings to tell the well bred ones, as they have come through this wet winter in fatter condition than the others. A trio of pure bred pigs may be purchased at reasonable prices and should be used as the basis of the business. I have often sold the boar at two years of age for the price paid for a trio at a couple of months old. There are many people who will not use full blooded sows as they claim they do not produce as large litters as the common sows. This is, no doubt, a fault that must be eliminated by selection of the best producers among the well bred sows as among the common ones. It has to be watched for in all classes of stock as well as in pigs.

Care.

The sows that dropped litters of pigs last fall should be separated from them and put by themselves. The youngsters can rustle for themselves on the grass, and the sows should have a little better feeding; some alfalfa hay with a little meal to add flesh to them, before they drop their spring pigs, will not be amiss. Every sow that is any good will nurse herself thin and if she starts in to suckle a new litter of pigs while in poor flesh the pigs will not thrive well. A check in growth in a pig's life is fatal to profits. A stunted colt will make a saddle pony, while a stunted cow will still give some milk; yet a stunted pig is a clear loss in pounds of pork. If we only desired to make the sows fat, corn alone would be good feed, but we desire bone and muscle in the coming pigs and therefore the protein of alfalfa hay or green alfalfa is most profitable feed for this purpose.

Selection.

After the sow has raised her pigs, the best of the young sows should be selected to make up the young breeding string, a few new ones being added of each fall's litter to keep up the breeding pens. On the ranch we use the pigs to eat while they are small, at about forty pounds weight. This is a cheaper source of meat supply than to feed them longer into large hogs.

A few, usually about twenty, are selected to be held for pork and hams. This lot are put into a separate place and receive growing rations all summer, until the grapes come, and then are finished off on grapes, pumpkins and corn. In California the extent of the farming blinds the eyes to the little things, yet every dollar we can keep at home saves the spending of money and makes it profitable in the end. When we learn on the ranches to count the savings possible to make, we can decrease our bills at the stores 50 per cent and yet be more healthily fed. The meat supply of the ranch can come largely from it by having a few common cows and vealing their offspring for meat. A few sheep can also be purchased and used to eat. The farmer on a large place who does not supply his table largely with home grown meats and vegetables makes a mistake.

Feeding the Sows.

After the sow farrows, give her plenty of fresh water, but no food for the first day. Then begin to feed her on bran slop made with skim milk if there is milk; if there is no milk, then use water. After a few days give her alfalfa hay or green cut alfalfa and a mixture of oil cake meal and bran in skim milk. Let her have an outside run if the days are sunny, for there is nothing like sunshine for babies of every sort. The sow that brings large litters of strong pigs should be kept and the young sows from her big litters should be ear marked; and from them, at six months old, the best should be saved for the next lot of sows. This is breeding away from sterility. Never keep, for a brood sow, a young sow from a litter that was small or weak, without you desire to run the pigs out of existence. Where there are registered pigs, I always ask how many pigs were in the litter the boar comes from; if the seller cannot tell by his books, I go elsewhere to purchase. That is as important a fact to know as it is to know that the animal is pure breed.

Pigs.

As soon as the pigs will eat, fix up a little trough in a small pen with a door too small to allow the sow to go in at. Have the trough broad, not V shaped, and keep it filled with dry bran and oil meal for the little ones to eat at, when they fancy they would like a nip. The size of the litter may be reduced rapidly by cultivating a market for suckling pigs. These sell readily at $1.50 each, dressed, to the hotels in the towns. They usually weigh from eight to twelve pounds and can be taken into town on Saturday evening. The ranch boys welcome the chance to get off early for this job on the delivery wagon.

The sow whose litters have proven small or weak is taken from the bunch and put with the fattening hogs. She will not make particularly good hams, but she will make lard and a great quantity of it. This pays well, for if one has more lard than they can use, the town people will pay a cent more a pound for fresh ranch lard in neat ten pound pails with the ranch name on it, than for the ordinary packers' lard. The hotels, too, take it in the large fifty pound cans, sending their own cans, and paying for the lard put into them. This is the best way to clean up the unprofitable sows as well as a small portion of the hogs fattened for pork. However, this is done only when the home supply has first been looked after. The success in farming is in selling well the surplus, not the things that can be used as well at home. Whenever we begin

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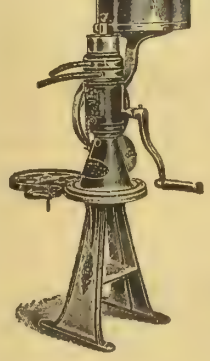

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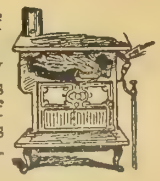

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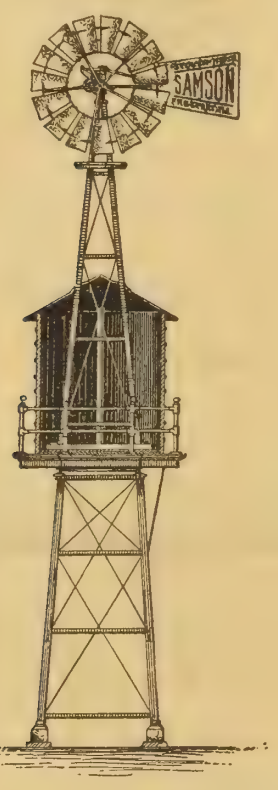

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SOME GOOD HORSE REMEDIES.

At the present high price of horses it pays to take the best care of them. Veterinary surgeons are to be commended in most towns, even if quite small, nowadays and as a general rule it pays whenever a horse is taken sick to invoke their professional aid. At the same time there are occasions when it is not possible to secure the assistance of the practitioner just at the moment it is wanted and therefore it pays to keep on the shelf in the stable a small line of standard remedies which may be administered easily and without danger or injury. Sedulous care should, however, always be exercised to keep such remedies from the reach of prying children. Harmless though veterinary remedies may be in their proper connection, they make poor playthings for the little ones.

More deaths among horses are caused by maladies of which colic is seemingly the outward appearance than by any other disease to which the horse is heir. In cases of true colic remedies are both simple and easily given, but the trouble is that what seems to be only a plain belly-ache may be due to some much more serious malady. Impaction of the bowels, inflammation and other affections may have to be dealt with and when a horse gets down and shows that he has severe pain the best thing to do is to send for the veterinarian at once. A safe remedy which may be kept on the shelf and administered in all cases of colic is as follows: Turpentine one ounce; cannabis indica one-half ounce; alcohol four ounces; and water one pint. Give as one dose pending the veterinarian's arrival. Another colic medicine which may be kept on hand is thus put up; Laudanum, one ounce; spirits nitre, one ounce; ether, one ounce; whisky, four ounces; and raw linseed oil, eight ounces. A practitioner once told us that he had most excellent success with this remedy. Another with which we have obtained successful recoveries in cases of spasmodic colic, consists of raw linseed oil, one and one-half pints; sulphuric ether, two ounces; laudanum, one ounce—to be given as one dose and repeated in two hours if necessary. It should never be forgotten that colic is superintended by indigestion and that some treatment that will remove the cause is necessary as well as that which will stop the pain and struggling.

Perhaps the next commonest ailments that fall to be dealt with continually on the farm are wounds of various sorts. When they are deeply punctured as when caused by snags, for instance, they should be probed and cared for by the veterinarian. When jagged it never pays to sew them up because the ragged places will slough anyway. In simple wounds where the cut is clean the severity of the injury will decide, of course, whether sutures (stitches) are necessary. In just plain ordinary slight wounds the best dressing is composed of a teaspoonful of pure carbolic acid to a quart of water—to be applied as a dressing. Do not wash the wound continually with soap and water. This is a very simple and cheap remedy which is available at all times. In cases where sores have festered and need cleaning out the best thing to use is peroxide of hydrogen diluted with an equal volume of plain water. This being injected into a sore secreting pus will cause the wound to foam and the injection should be continued until the foaming ceases. An excellent healing ointment is composed of oxide of zinc, one ounce; glycerine, two ounces, mixed.—Farmers, Tribune.

SORGHUM FOR SILAGE.

Sorghum has not generally been considered as satisfactory as corn for silage. Professor Plumb, of Ohio State University, states that "sorghum is not so nutritious as Indian corn. The stalks are more dense and the silage is not relished quite as well by cattle as that from corn."

In experiments at the Tennessee Station, however, A. M. Soule found that "as fine a quality of silage can be made from sorghum as from any other crop and there seems to be little choice between the feeding values of sorghum and corn silage for beef production." He states that "farmers who experience difficulty in making good silage either cut the crop too green or else have improperly constructed silos."

In the Tennessee experiments the cost of growing an acre of sorghum silage was 19.48, of corn $14.92, corn and sorghum $19.14, soy beans $19.86, but the average cost of a ton of silage from sorghum was $1.41, from corn $2, from corn and sorghum $1.86, and

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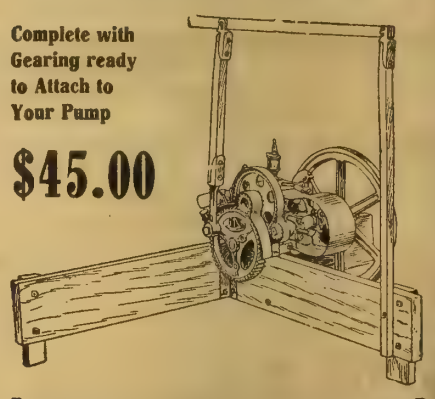

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from soy beans $2.83, the higher yield per acre of the sorghum accounting for the lower cost per ton.

Sorghum planted as a "second crop" will not yield more than 8 to 9 tons per acre, whereas if planted as a first crop it will yield from 12 to 20 tons per acre. The lowest cost per ton from a first crop was $1.15 and the highest $1.78; from a second crop the cost was about $2.80.

In the Tennessee experiments Red Head was found to be one of the best varieties for silage purposes. Grown with Virginia ensilage corn a very satisfactory combination for silage was obtained. "Combining these crops makes a better quality of silage, increases the yield, and reduces the cost per ton as compared with corn alone. * * * Corn and sorghum can be combined so that the resulting silage will consist of about equal percentages of each crop."

Sorghum, like corn, contains an excess of carbohydrates and is somewhat deficient in protein. It was found at the Tennessee Station that this could be corrected in a very satisfactory way, and a better balanced silage obtained by growing cowpears and other leguminous crops with the sorghum and ensiling the two together.

In experiments at the Illinois Station it was found that while "in Illinois corn seems to be the best single crop for the silo * * * under average conditions a larger tonnage of feed can usually be obtained per acre by combining corn, sorghum, and cowpeas or soy beans, but even with this combination the greater part of the crop should be corn."

In comparative tests of different crops for silage at the Kansas Station "cane and Kaffir corn gave the largest yields and lowest cost per ton of any of the annual crops, while corn ranked second, and cowpeas third."

The need for forage crops which will give large yields of good forage is becoming more pressing in the South as the raising of live stock increases. J. M. Scott, of the Florida Station, says that the value of sorghum for this purpose has not yet been fully realized. He finds that sorghum may be grown in all parts of Florida when cultivated and fertilized in practically the same way as corn. It seems to be the best and most productive silage crop that can be grown in Florida. Yields as high as 19 tons per acre were obtained. In the Florida experiments sorghum produced silage richer in total digestible nutrients and gave a larger yield of green forage per acre than corn, thus making it "not only the best crop for the silo, but also the cheapest."

It seems comparatively simple to secure a good milk supply, but experience shows that is not the case. It is a very complicated question and requires care and thought by all engaged in its handling. Cows should be provided with clean, comfortable stables and treated with kindness, and the yards should be clean and well drained.

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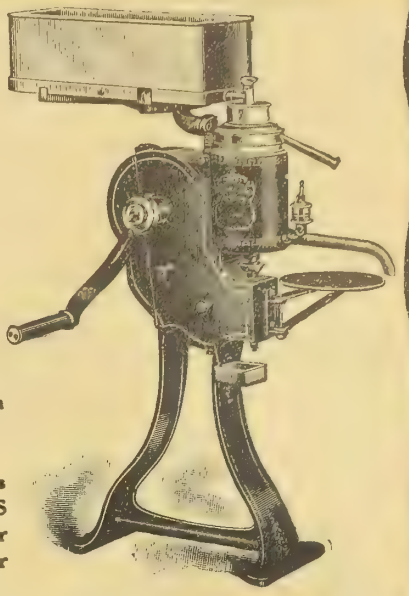

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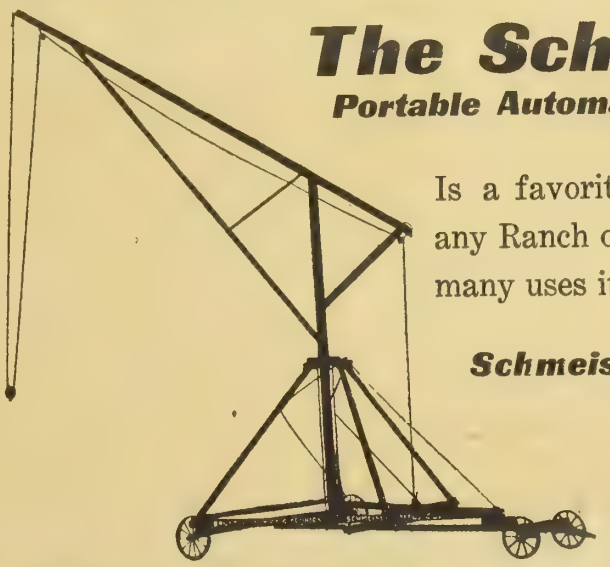

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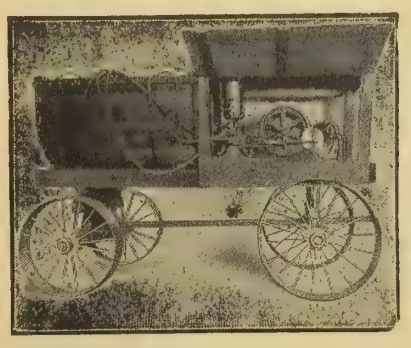

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Contents

WATER IN THE SAN JOAQUIN VALLEY, Cover.

MINUS QUANTITY IN SOILS, 275.

CITRUS.—Value of Organization; The Orange in Florida, 276, 277.

DECIDUOUS.—Almond Culture; Pruning the Apple Tree; Budding Grape Vines, 278, 279.

SMALL FRUITS AND VEGETABLES.—Running Out of Spuds; Raising Cucumbers for profit, 280.

ORNAMENTAL GARDEN.—Commercial Bulb Growing; Over Potting of Plants, 281.

IRRIGATION AND FORESTRY.—About Irrigation; Water Code Demanded, 282.

LIVE STOCK AND DAIRY.—Swine; Good Horse Remedies; Sorghum for Silage, 283, 284, 285.

EDITORIAL.—President Taft; One Commissioner; Postal Progres; James Wilson; Jastro for President; Humus; Demonstration Train; Laguna Dam, 286.

AGRICULTURAL NOTES OF THE PACIFIC COAST.—Northern, Central, Southern, The Coast, 287.

POULTRY.—Method in Poultry Raising; Yellow Legs; How to Set Hens; Marketing Eggs; Brooders and Chicks; Incubator Hints, 288, 289, 290, 291.

GENERAL AGRICULTURE.—Plant Breeding; Mortar, 292, 293.

BEES AND THEIR CARE.—Humanizing Influence of Bee Keeping, 294.

QUERIES AND REPLIES.—Catalpas from Seed; Fodder; Green Forage; Weedy Ditches; Bitter Cows' Milk; Canaries Eating Eggs; Flathead Borers; Hollow Tail; Fillarie for Green Manure; Identification of Vine; Poisoned Wheat; Tuberculosis, 296, 297.

HOUSEHOLD.—Two Schools; The First Quarrel; About the House, 299, 300, 301.

PRODUCE MARKETS.—Los Angeles Market; San Francisco Market; Citrus Markets, 301, 302.

PRESIDENT TAFT.

We are just a little bit disappointed in President Taft's inaugural address in this one point, that he dismisses agriculture with a very few words. To be sure, those words are of the right tone and we presume mean far more as to his attitude toward agriculture than more words would from many others. Furthermore, he has shown his appreciation of the importance of agriculture to the country by the reappointment of James Wilson as Secretary of Agriculture. Therefore, all told, we believe that the producers of the nation may rest perfectly secure as to the attitude which our president will observe during his administration. The few words which he does devote to agriculture are as follows:

"In the department of agriculture, the use of scientific experiments on a large scale, and the spread of information derived from them for the improvement of general agriculture, must go on."

On the whole it may be said that the inaugural address was most acceptable to the people of the United States as an indication of the attitude of the present administration.

ONE COMMISSIONER.

Gov. Gillette signed the bill providing that there shall be but one horticultural commissioner in each county, last Friday. The bill is to take effect immediately and changes in the commissions will be made in the counties as soon as proper provision can be made for the examination as to qualifications of the new commissioner. Each applicant who seeks the position must pass a civil service examination before a board of experts appointed by the governor. The pay will be $6 per day. Inspectors in the various districts of the county must also pass examinations and their pay will be $3.50 per day.

The passage of this bill is generally approved by fruit growers of the state. It must be admitted, however, that in some counties where the former law worked to the entire satisfaction of the horticultural interest there was some opposition to it. But in other counties where the old commission was made a mere political plum it is believed the present law will prove infinitely better.

JAMES WILSON.

The appointment of James Wilson as Secretary of Agriculture, while anticipated, has given great satisfaction and assurance to the growers of the country. Mr. Wilson has served for twelve years and has given the longest service as cabinet officer ever given by one man. He was first appointed at the beginning of the McKinley administration, and if he serves through the present Taft administration will have served sixteen years.

He was born in Ayrshire, Scotland, in 1835, and at the age of 17 was brought to this country by his parents. He was educated in the public schools of Iowa and at Iowa college. He engaged in farming, and, entering state politics, was a member of the twelfth, thirteenth and fourteenth assemblies of Iowa, being elected speaker of the assembly in his last term. He served three terms in congress.

In the forty-eighth congress his seat was contested, and the opponents of General Grant, who was then nearing his end at Mount McGregor, used the seating contest for a filibuster to defeat the Grant retirement bill. Mr. Wilson saved the measure by resigning, on the stipulation that the Grant bill should be immediately passed.

POSTAL PROGRESS.

California is entertaining this week Mr. Frederick Converse Beach, editor of the Scientific American and President of the American Postal Progress League. It is hoped by the friends of the parcels post that the visit of Mr. Beach will aid in creating a new interest on this coast for this needed reform in our postal service. The endorsement by President Roosevelt in his special message to Congress of the parcels post was so emphatic that it has given a position and an impetus to this movement which will give it greater advancement than it has had heretofore.

Arrangements have been made for a meeting to be held in the Chamber of Commerce rooms, Los Angeles, next Monday afternoon at 2:30 to discuss parcels post and its relation to the interests of our country. Mr. Edward Berwick, President of the State league will preside and addresses will be made by Mr. Beach and by President Booth of the Los Angeles Chamber of Commerce.

JASTRO FOR PRESIDENT.

The directors of the State Agricultural Society which recently met in Sacramento, elected one of the strong men of the state to act as president of the association for the coming year. He is Mr. H. A. Jastro of Bakersfield. Mr. Jastro has also recently been re-elected to act as president for the second year of The American National Live Stock Association, in which Association, he has not only served faithfully, but most effectively. The former president was Mr. B. F. Rush who has served for the past six years. Other officers of the association are: Frank J. Burke, of San Jose, vice-president; J. A. Filcher, secretary; L. R. Miller, assistant secretary; California National Bank, treasurer. C. W. Payne will be superintendent of Race Track and Live Stock departments while Fred R. Martin will be in charge of the officers and exhibits.

It is reported that the new pavillion will be completed in time for this year's fair, which will be held August 28 to September 4. The fair has been working toward a more representative institution of our state than it was some years ago, but there are other opportunities for material advancement. We trust the management will this year eliminate some of the objectionable features which prevailed last year. We think that efforts towards freak events like weddings in lions' dens, locomotive collisions and such sensational features do not add dignity to a State Agricultural Meeting. We are told that such things are necessary in order to draw the crowd and make the fair self-supporting. If such be the case, it is time the farmers of the state realized it and permitted the association to die. We cannot believe such is the case.

True there can be no objection to more or less fun making at such events as it is to a certain extent, a time of relaxation for many who go there, but to prostitute one of the most sacred rites which has ever been instituted by the human race, and make an exhibit of it before a gaping crowd of merrymakers, adds, as we have remarked, little dignity to such an event.

This state is worthy of a good agricultural fair in which live stock and farm products are brought to the front and made an educational factor for the farmer. The pool seller was driven away a few years ago. It ceased to be the state gambling event of the year. Let the upward tendency be encouraged and we may yet have an agricultural fair worthy the state.

HUMUS.

In the article on first page of this week's Cultivator, written by Prof. Shaw of the State University, is the statement that "Plant food and fertility are not synonymous." A soil may contain a vast amount of plant food and still be a barren desert. In other words, it is not fertile. The elements which go to make up the requirements for plant growth are all there but locked up and beyond the reach of the rootlets. The key for unlocking this fertility which will fit practically every soil is shown by the exhaustive article of Prof. Shaw to be humus. The Cultivator has spoken of this often but is glad to be again able to give another excellent article on this subject. We trust that every farmer and fruit grower will read Prof. Shaw's article closely.

DEMONSTRATION TRAIN.

The Southern Pacific Railway Company is surely doing a service for the agricultural and horticultural interests of California in conducting the special agricultural and horticultural demonstration train. President Benjamin Ide Wheeler and Professor E. J. Wickson of the State University head a large delegation of talented speakers from the staff of the Agricultural College. The initial Southern California meeting was held in Pasadena yesterday morning, the remainder of the day and today will be spent in the San Gabriel Valley. Pomona and thence on east to Riverside will be touched the remainder of the week. Monday there will be meetings at Bloomington, Colton, High Grove and Riverside; Tuesday, San Bernardino, Redlands, Crafton, Beaumont; Wednesday, Banning, Indio, Coachella; Thursday, Calexico, Heber, El Centro; Friday, Imperial, Brawley, Rockwood, Holtville; Saturday, Mecca and Thermal.

LAGUNA DAM.

We note in the news items that Laguna dam is practically completed and that the people at Yuma are prepared to commemorate the event on March 30th and 31st by a great celebration.

This work which has been taken up by the Reclamation Bureau of the United States Department of Agriculture has been under way for several years and makes possible its claim, the irrigation of 2,000,000 acres of land in Arizona and California. This dam is not built for storage but merely for the purpose of diverting the water from the river channels to the lands.

The wealth which this work will bring to a section of the country which has heretofore been an almost absolute desert is impossible to estimate.

Agricultural Notes of the Pacific Coast

Northern California

Vacaville reports promise of immense setting of practically all fruit crops.

Italians at Sunset, Sutter county, are planting heavily of garden truck this spring.

Sutter county will plant more fruit and nut trees this season than for many years.

The rainfall at Ukiah to date is 49.36 inches, more than twice as much as last year.

Davis fruit growers are appealing for a cannery to handle surplus fruit of that section.

Some peach orchards in Sutter county will be taken out to make room for alfalfa fields.

Rural delivery has been suspended in Suisun valley, Solano county, because of extremely bad roads.

One rancher at Colusa will plow up about 100 acres of hops this spring and plant the ground to sugar beets.

The fruit inspector of the orchards about Davis reports plenty of holdover blight in many of the orchards this season.

A Santa Rosa farmer is experimenting with a promising fibre plant called "Phonnium lanez," which makes a high grade twine.

Much wheat and barley in the overflowed lands along the rivers were covered so long with water as to be completely drowned out.

The long wet weather deferred the winter spraying so that every spray pump in the orchards has been kept busy since the settled weather came.

Notwithstanding early reports that the Yuba cannery would not operate during the coming season it is now definitely annouced it will be in the field for its usual amount of fruit.

Sutter and Yuba Wool-Growers Associations take exception to some of the provisions which are included in the bill now before the State Legislature regulating the sheep industry.

The more settled weather which has been given to the farmers of the Sacramento valley has put the ground in good condition so that every plow and horse in the valley is now busy.

The Assembly has passed a bill to submit to the people a constitutional amendment giving the people the right to fish along the banks of all streams, regardless of the ownership of the abutting property.

The creameries near Ferndale, Humboldt county, on their last pay day paid as follows from the different creameries for butter fat: Capital, 40; Central, 40; Cream City, 40; Eel River, 40; Ferndale, 40; Grizzly Bluff, 40; Riverside, 40; Pioneer, 38½.

The recent Congress allotted to the Chico Plant Introduction Gardens $21,380.00 for expense items the coming years, also a special appropriation of $400 to investigate the relation of wild geese to the grain crop of California.

The assemblyman from Yolo county has just introduced a bill calling for the formation of a drainage district to include Yolo, Solano, Sacramento, and Sutter counties. The idea will be to carry the water away through a large canal more than six miles long. It will cost about $150,000.

Central California

Madera is one of the newest in the Farmers Union line.

Hanford is to have an alfalfa meal factory in the near future.

Plowing has been begun in the orange groves at Tulare county.

For the first time in years, wheat is selling at $2.00 per hundred in San Joaquin Valley.

A dried fruit concern at Fresno has let a contract for a $15,000 addition to the packing house.

Orchard planting at Turlock has exhausted the stocks in most of the nurseries of that section.

It is predicted that the asparagus pack of this state will be much larger this year than heretofore.

Kerman will engage quite extensively in cantaloupe culture this year. One planter there will cultivate about 20 acres.

The Leedham Bulb Company of Santa Cruz recently shipped 24,000 daffodils to Los Angeles and San Francisco.

This year's rainfall at Watsonville has not been exceeded, since records have been kept there, but once in the past 30 years.

Exeter has been shipping many hogs to market recently, being driven in from the pasture on "mast" in fine condition.

One of the principal roadways at West Willows, Santa Clara county, has been beautified by trees furnished by Mr. H. G. Keesling.

The Mesa citrus belt country near Bakersfield will have a new subdivision of land which will be planted to oranges this season.

The increased Eastern demand for dried fruits has given a stimulus to the market and much fruit is now moving out of the producers' hands.

Many blooming almonds have been damaged by blustering rain storms which passed over the northern end of the San Joaquin Valley the last of February.

The Turlock fruit juice factory had such a successful season that an extensive addition is being made and better appliances added for handling next year's output.

Steps have been taken in the Lind say, Tulare county, section for the formation of a protective district to care for the large amount of storm water which injures much orchard property.

Ten miles of new irrigation ditches have been constructed by the Fresno Irrigation Farms Company on the lands at Kerman, and much new acreage of almonds and other crops will be planted this year.

Both the sugar factories at Visalia and Corcoran will operate this season on more than 8,000 acres of beets already planted. It is reported that the Visalia factory will run three months and the one at Corcoran two months.

A large stock farm in western Fresno county is preparing to shear sheep this year with a new power operated shearing plant, and 17 machines will be operated by one engine, and about 50,000 sheep will be shorn. The plant will handle about 150 sheep a day.

Southern California

Saticoy is shipping walnuts and oranges.

Navel oranges of Tustin will all be shipped by March 15th.

Coachella Valley asparagus sold in Chicago at $1.25 per pound.

The Mound Farmers Club held its regular meeting last Tuesday.

Cantaloupes are practically all planted in the Coachella Valley section.

Highland district shipped during the month of February 376 cars of oranges.

Large acreage will be planted to asparagus on the peat lands near Huntington Beach.

One cantaloupe grower at El Centro, Imperial Valley, has 20 acres of cants, each hill of which is covered with glass.

Richland Walnut Growers' Association recently adopted by-laws, and will be in working trim for next season's shipments.

Southern California has made the heaviest shipments of oranges during the last two weeks of any period during the past year.

Imperial recently had a slight touch of frost but said it was not sufficient to injure the young cantaloupes which are now growing nicely.

The onion pack of the Coachella Valley aggregated about 250,000 crates, and is said to be one of the best packs on the Eastern market.

The celery crop of the past year is practically all shipped. The season has been very successful, and a most excellent product has been sent to market.

Redlands and Highland are joining in a fine roadway connecting the two communities, which will be ornamented with a double row of trees the entire distance.

The president of the Orange County Celery Association says that indications are that the county will have about the same acreage of celery as last year, which was about 3000 acres.

The rangers in charge of the Forest Reserve above Pasadena have been busy for the past few weeks planting over 15,000 pine trees. They have been largely along the banks of the Arroyo Seco.

A company of Los Angeles capitalists has been organized under the title of the "Chuckawalla Land & Water Company," and it will bring water from the Colorado River to the lands of the Palo Verde Valley in Imperial county.

Walnut growers of the various associations of Southern California held a conference in Los Angeles last Thursday, to discuss plans of getting into better working condition than the walnut men have ever succeeded in securing.

Fruit growers along the banks of Santiago creek have petitioned the supervisors of Orange county to prevent the dumping of cull oranges from the packing houses into the bed of the creek, as they are washed down the stream and are liable to endanger the spread of scale to other orchards below.

The Coast

Sales of wheat have been made at Tacoma at $1.16.

Hop buyers at Portland are now offering 10½ cents.

There are about 11,000 acres of rice in the Hawaiian Islands.

About 100 acres of cantaloupes will be planted near Yuma this season.

Spokane, Washington, is now selling Malaga grapes shipped in from California points.

The sugar industry of the Hawaiian Islands is practically all in the hands of 49 different corporations.

Gov. Edwin W. Norris of Montana was chosen as president of the Trans-Missouri Dry Farming Congress.

State Fair Association of Oregon has received an appropriation of $25,000 for improving its fair grounds.

It is estimated that the wool growers of Arizona will receive half a million dollars from this year's wool clip.

The state of Washington has 166 granges with a membership of 8727. There are in the state ten Pomona granges.

About 213,000 acres of land in the Hawaiian Islands is devoted to the cultivation of sugar. Of this, 135,000 acres is under irrigation.

Seven co-operative creamery and cheese factory associations in Tillamook county, Oregon, received 14,326,111 pounds of milk during the past twelve months.

The Nevada State Legislature has passed an anti-alien bill which provides that aliens and foreigners shall be excluded from federal and state grazing lands.

The Horticultural Union, a co-operative union of fruit growers of North Yakima, Washington, has received orders for apples to be shipped to Ghent, Belgium.

Farmers near Yuma, Arizona, are planting extensively of potatoes this season. In the past that section has not raised sufficient to supply the city of Yuma alone.

The Hawaiian Islands have given much attention to storage of storm waters. The largest storage reservoir constructed to the present contains 2,500,000,000 gallons.

Ira P. Whitney, Sec. Washington State Dairy Association and Professor in the State College, is to forsake his present work and take charge of a large dairy farm in Montana.

The Antero and Lost Park Reservoir Company near Denver, Colorado, has recently established a new high line ditch which will cover a large section of new land with water.

The recent Oregon State Legislature passed an enactment which will bring into being a better system of dairying throughout the state. Three additional inspectors will be appointed to see that the provisions of the law are enforced.

The State Legislature of Oregon has been considering a bill, one of the features of which was the appointment of additional inspectors and very stringent provisions for better dairy products. This was strongly opposed by the State Dairy Association because of some unfortunate features and it has finally been defeated.

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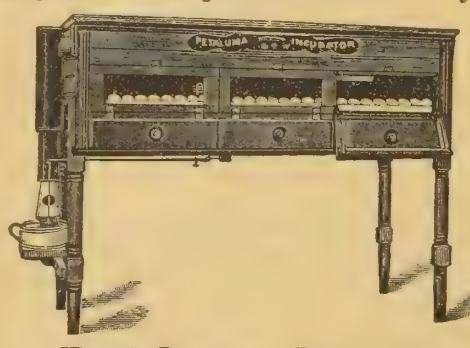

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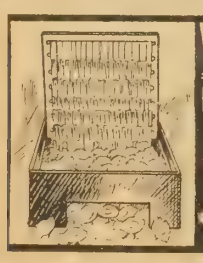

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Profit in the Poultry Yard

By Mrs. Frank Metcalf

We solicit short articles of a practical nature from the fancier and utility breeder, giving their experience with poultry. All inquiries pertaining to feed, management, disease and its prevention will be answered through these columns.

METHOD IN POULTRY RAISING.

The following is from an address made by Mrs. Metcalf before the Farmers' Institutes held last fall.

NO person who thinks of selfish ease can ever be trusted with the care of chickens, big or little. Their wants must not only be attended to properly, but the work must be done on time. A queer old farmer I used to know contended that farmers' boys should spend a year or two in a military school. He used to drawl, "I don't know as it would teach them to feed hogs any better, but I do know they would learn to feed them on time." And maybe a military training would be a good thing for some of us farmers' wives, in that respect and teach us to feed our chickens with more regularity, but it is scarcely feasible.

So many think the "hen business" is a trifling thing, unworthy their best endeavor. Of course they figure that they must have a few around, but look upon them as a sort of necessary nuisance, until one is set before them nicely cooked, when they wax loud in the praises thereof, and testify their appreciation by their hearty appetite, for the proof of the pudding is the eating. And did you ever see a group of farmers at the store looking sort of bored and with little to say until someone said "chicken?" What an awakening comes to that group, and how the grocer edges around that way as tale after tale of extraordinary hens crops out. The cackle and crow of the barnyard is silence compared to their gossip on this exciting subject. And why shouldn't they be animated, I'd like to know? Perhaps there are some here who think the hen is not "such a much" after all, but just listen to these few statistics and see how great she really is.

Big Business.

The annual value of market eggs and poultry in the United States is from 290 to 300 millions of dollars, actual sales, besides the great amount consumed at home and not counting the immense sums which change hands through the fancy side of the business.

Gold only brings about $90,000,000; silver $35,000,000; coal, some $200,000,000; hay $390,000,000; corn averages about $600,000,000; wheat $300,000,000 to $500,000,000; barley $30,000,000; oats $200,000,000; potatoes, $80,000,000; tobacco less than $50,000,000; so the old hen stands pretty high in the world's economy; only three products of our great country exceeding hers, namely, wheat, hay and corn. And when we consider that the greater part of this wealth is added to our coffers by the labor of farmers' wives, in addition to all our multiplicity of other cares, we feel that we are persons of importance, and we are not going to take a back seat for anyone.

Brings Independence.

The well cared for hen makes the farmer's wife independent, for she and her products bring ready money every day in the year. Sheep and cattle bring large sums at certain times, as do horses, hogs, hay and grain, but the little every-day wants count up wonderfully, and I count mine in so many chickens or so many dozens of eggs, instead of so many dollars.

On the farm I always tried to keep close account of all grain fed, and charge it to the fowls at market prices, and all and above what the grain amounted to I considered my own to spend as I saw fit.

I suppose you have all read of the Kansas hen, but I must quote a verse or two in point. It is a new version of Maud Muller and says, in part:

"When Maud is wanting a new spring gown, she doesn't hustle her hay to town; but fills her basket with fresh hen fruit, then goes to town and buys her suit. And when Maud's beau makes a Sunday call, she doesn't feed him on hay at all, but whisks up eggs in a custard pie and fills him full of a chicken fry. O, corn may be king, but it's plainly seen, that the Kansas hen is the Kansas queen."

And Maud wouldn't need a very large basket at the way eggs sell about Christmas time, either. Now, having proved how very profitable the common barnyard fowls are, let us consider the best way to care for them, in order to get the most we can out of them. In the first place, what we want is a type of fowl suited to your needs. If you are raising market poultry, you will want a heavy, meaty sort of chicken; one which will dress out a plump carcass at any age. There are many breeds which answer these requirements, and among them you may make a selection which suits your purpose. It doesn't make any difference what the color of its feathers is, or what style of comb it has, so that it makes the sort of carcass your market demands. Some markets require a fowl that will dress from three to five pounds, and others call for larger birds. Some consumers figure that there are just so many pieces to a chicken anyway and the small birds go just as far as the large ones, and so they do if one's appetite is delicate or one is bashful about asking for a second piece.

Some prefer yellow legged fowls, while some declare in favor of white skinned fowls, and other epicures want none but black legged ones. Whatever your nearest market prefers will pay you best to produce. Having selected your breed, if you cannot at once buy the sort of birds you want, either buy eggs for hatching from those who have them for sale, or else procure males to cross upon whatever hens you happen to have, and breed up by getting fresh males every year. It won't pay a farmer to inbreed. Always change your males every year. Only fanciers can take time to toe-mark and pedigree their chicks, and breed in line.

If you cannot find males unrelated to your own flocks of the same variety, do not hesitate to cross with males of some other breed having the same general characteristics as your own. If yellow legged and yel-

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low skinned varieties are called for you have many breeds to choose from —Rocks, Reds, Wyandottes, Cochins, Games and Brahmas.

Of white skinned breeds, there are Langshans, Orpingtons, Houdans, Crevecoeurs, Dorkings and Minorcas. The type of the meat breeds and the type of the laying breeds differ greatly and different hens of the same breed show as much difference in shape as do Jersey cows, and should be selected with equally as great care for the purpose wanted.

Selection.

We wouldn't breed from a beef animal if milk and butter were wanted, and neither should we be careless in selecting the layers from a flock, and I am not divulging any secrets if I tell you how to select the laying type of chicken.

The shape tells the story. The lazy layer is round in all her curves, short in back and keel bone, and narrow between her thighs. She is usually fat enough to kill at any age, and takes life easy, as a rule. She sits on the roost a good bit of the time, dreaming, not doing. We get so mad we throw things at her once in a while, just to waken her up, and she rewards us with a surprised and haughty look, then tries to eat our missile.

The layer, on the other hand, is built along different lines. She looks at you out of both eyes, a point some farmers are very particular about. She is wide between the thighs, and has a longer body, both back and keel bone being lengthened, making her oblong in shape. I once described this hen as "flat ironed shape," and the big guns laughed at me, but I had in mind the toy flat irons of my childhood, which represented a hen sitting, and that shape is the correct one for a good layer. Males should be selected with the same care as the hen is, and one can bring about such a change for the better by breeding to this type exclusively that they will be surprised.

In the Inglewood Poultry colony a pen was selected by Hogan system, which is about the same thing as the Potter system, and ten egg type hens were put in one pen and ten meat type hens in the other. The egg type hens laid 152 eggs during October, while the meat type hens laid just eleven on the same feed, which shows how one can pick out the present layers by system, anyway.

House and Location.

So much for selection; now about housing. A roomy comfortable shelter must be provided for the hens, free from filth and dampness, and large enough to shelter them all day when stormy, and warm but not tight. The open-front house is best for this country, but the three sides closed must be wind and water proof, and the roof never leaky.

We don't need expensive houses for chickens, and often some old shed already on the place can be utilized to good advantage.

If the house you have needs fixing and money is scarce, don't despair, but cast about and see if there is not some material at hand of which you can make use. Those of you who have read Mrs. Wiggs remember how the immortal Billy mended the roof with old tin tomato cans, straightened out, and we might borrow his idea and use the big distillate cans which can almost be had for the asking in many places and it wouldn't take very many

BUY CHICKS NOW! DON'T WAIT!

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MRS. A. BASLEY, the celebrated poultry authority, says. "I want some more of your West Coast Chick Feed, for it is excellent. It is purer, cleaner and appears better balanced than other feed I had been using, and to tell the truth, I have been experimenting, feeding both together, and they always eat yours in preference."

Ask your neighbors, for there is more of "West Coast" sold in Southern California than all other kinds put together. If not sold by your dealer send us $3.50 and we will send a 100 lb. sack, freight prepaid within 300 miles.

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Brown and White Leghorn Hens at $8.00 and $9.00 per dozen.

Setting Eggs from Barred Rocks, Brown and White Leghorns and Bronze Turkeys at $1.00, $1.25 and $2.00.

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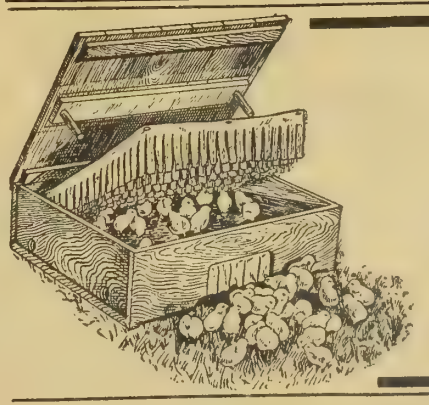
Are now equipped with a moisture guage that will accurately register the moisture; relieves the operator of all guess work and assures better hatches than ever.

Henry Albers Co., 534 So. Main Street Los Angeles



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Petaluma Incubator and Brooders, fireless brooders, Midland poultry food, Steinmesch chick feed, Swift's beef scraps. Send for our large illustrated catalogue of poultry supplies and seeds, it is free.

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Fireless Brooders

Now ready, 150 chicks size "Success" Fireless Brooder delivered anywhere for $5. Send today for descriptive circular showing this new brooder and all about it. I will send you this brooder for $5 and pay the freight; if you don't find it the best fireless brooder sold today at any price, you can return it and I will refund you every cent. Is that fair? I am making this offer simply to introduce this big bargain.

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E. E. McCLANAHAN 112 East Eighth Los Angeles

The Only Original Dry Chick Feed for Baby Chicks

Mamma And The Babies
All Raised on
CHAMBERLAIN'S PERFECT CHICK FEED

Write for Prices, Booklet, or name of nearest Agent.
W. F. CHAMBERLAIN FEED CO.
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1st Prize Pullet Dec., '07
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White Wyandotte
Winners of the Blue and Gold
Mrs. C. D. Hubbard
San Fernando, Cal.

Rhode Island Reds

From Winners at Madison Square Gardens. The Greatest Utility fowl in the world. These birds won 1st prize at Oaklands Great Show and are unquestionably the finest blooded stock in Cal. Eggs—1st pen $5.00 per 15—2nd pen $3 per 15. Day old chicks 20c each. A few hens and cockerels for sale. Address
W. E. GIBSON, R. D. 13, Niles, Cal.

WHITE LEGHORNS OF QUALITY
Bred from best American and Imported stock—for beauty and great egg production. Won more ribbons at Oakland's great show than any four competitors.
Stock, Eggs and ***Baby Chicks*** for sale. Also eggs and chicks from ***High Class Buff Orpingtons***, (Cook strain.)
Write for descriptive circular.
The Model Poultry Farm
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Largest Hatches of Strongest Chicks
You need the World's Best Hatcher. You also need to be sure you get a machine that Bear the Insurance Label, or you will be liable to loss by fire.
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Must bear the Insurance Label. They have been Inspected and Passed by the Fire Underwriters. Refuse every machine without the label. Our 212-Page Catalogue Illustrates America's Biggest Poultry Farms and explains the new insurance rules. It is *Free*. Address Nearest Branch.
CYPHERS INCUBATOR COMPANY, Oakland, Cal.
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of these to cover quite a coop, and if painted and well lapped at the joints would last for years. If your coops have knot holes and cracks in the sides, your birds will have colds and roup, so guard against drafts as you would against contagion. Stop every crack and cranny on the three closed sides and have the open side open so as to escape prevailing winds; mine face east as we have little east wind in Inglewood.

A house 10x12 will shelter 50 chickens nicely. In building a new house, soak every board with distillate, and little trouble will be had with mites, as it penetrates the wood, and an occasional dose on robsts and nest boxes makes my crops so unhealthy for these vermin that they stay out. It must not come in contact with the nesting material, or the eggs will taste of it and not hatch. Fresh eucalyptus leaves are also said to be good to keep lice out of the nests.

Early Beginning.

They say the way to reform a man is to begin 200 years before he was born. So as we have begun with the breeding stock, we can now pass on to the chicks, which should be healthy and easily raised, if the parent stock has been well cared for. The food a parent gets has much to do with the vitality of the chick and hatchability of the egg, and while saving eggs for hatching, it is well to withhold stimulating mashes.

Stimulants.

It is a nice question whether it ever pays to feed stimulating mashes to breeders, and I have not answered it fully to my own satisfaction. I simply don't use them. A neighbor of ours used to run a milk route very successfully, and his method was to keep his cows so fat that the day they fell off to the unprofitable point of milk production, he could turn them over to the butcher, and replace them with fresh cows at the same price. Perhaps we should do the same with hens we force for heavy egg production. Stuff and stimulate them to the limit for a few short months, and have growing up a fresh lot to take their places. I believe some egg ranches do this.—Mrs. Frank Metcalf.

POULTRY QUERRIES.

Yellow Legs.

Will you please tell me if pure bred Leghorns necessarily have yellow legs? We have a flock of fine looking hens—splendid layers—from trap-nest stock, but some of them have white legs. I contend that they are pure bred even if their markings are not up to the standard from a poultry show point of view.—A Truth-seeker.

According to standard requirements Leghorns should have yellow legs, but as you say, even though their legs are white, it does not indicate that they are not standard bred or high standard stock. Many of the birds of all breeds in this climate after they are a year old and even before that, lose the color of their legs, even though they are rich in color when young. We think the dry climate together with the hot sun has something to do with this, so we would not feel alarmed because some of the legs showed white. We know that they will get lighter each year, as they grow older.—F. H. T.

Porterville is already marketing new potatoes.

HOW TO SET HENS.

This seems to be a simple question, but we venture to say that one-half of the failures in hatching and raising chickens with hens is due to the fact that we did not know how.

In the first place, one cannot set hens in the hen house where other hens have access to the nest. If we do, those that want to lay will crowd into the nest and either break the eggs or keep the other hen from returning until the eggs have been chilled. A separate room for setting hens must be provided. A place where they may quietly sit and not be disturbed by others. Any outhouse room in the barn or lot will serve the purpose. The writer has often had as many as twenty hens setting at one time in a single loft room of the barn, and not a single one ever failed to hatch a fair per cent of the eggs.

An ordinary soap box makes a good nest for a setting hen. All you need to do is to cut out a small opening in the side so the hen can step into the nest without breaking the eggs. It will also be necessary to provide a temporary top and front, so that when the hen is first taken to the nest she may be kept there for at least one day. These boxes may be arranged around the wall and the food and water can be placed in the center of the room. Arrange a few nests in advance, and after the hen has begun to set remove her after dark to the room. Carry her gently with head tucked under your arm, set your lantern in front of the nest and let her slip gently on the nest eggs which have already been placed there. Cover the top and front of box and do not disturb the hen for one day. Place a pan of water, box of grit and some corn in front of the nest, and on the second day remove the front and give the hen a chance to come out and eat and drink. If after an hour or two she does not come out lift her off the nest and set her down by the food, with head toward the nest. After she has eaten and drunk she will, if she really wants to set, return to the nest. If she refuses to return, there is no use wasting time with her. After she has settled on the nest, remove the nest eggs and place the other eggs under her. She will come off each day and get her food and dust herself and in no way disturb the other hens in the room. After the second day dust her with insect powder and repeat again on the fifteenth day.

The same covering for top and bottom may be used for other boxes as other hens are set. In this way almost any number of hens may be set in the same room and they will give but little trouble.—Pacific Homestead.

MARKETING EGGS.

The Poultry Breeders of Southern California met in Assembly Hall, Chamber of Commerce, Los Angeles, on Thursday evening, February 25th, for the purpose of organizing an association separate and distinct from the Breeders' Association, for the marketing of their products, especially eggs.

The commission men and hotels are not giving the Southern California local producers the support of their trade, but seem to prefer the cold storage and Eastern eggs to the detriment of the business here. The as-

sociation will embrace all the territory surrounding Los Angeles and hope to control the output of their egg farm in Southern California. Fullerton, Santa Ana, Burbank, Inglewood, Gardena, Pasadena, Monrovia, Anaheim, Glendale, Tropico and other towns were represented and committees appointed to draft by-laws. Another committee was appointed to get a site for a jobbing house here in Los Angeles and these committees will report their progress on March 11th, at which time decisive steps will be taken towards the transaction of business.

It is reported that the city of Los Angeles pays about a million dollars each year for California eggs and about the same for Kansas or Middle West eggs. The dealers have used the storage eggs to hammer down prices on locals, and the producers have stood the treatment as long as they propose to. Juggling with the market has been indulged in until storage have been sold at a higher price than the locals.

Chas. H. Kline of Burbank, is made chairman of the new organization committee and the committee will report at a meeting to be held at Chamber of Commerce hall on Thursday evening, March 11.

BROODERS AND CHICKS.

While a greater number of chicks can be handled to advantage in brooders with less trouble than when mothered by hens, still in some ways more care and attention are necessary.

In the first place, the brooder being inanimate, the chicks have to learn to take refuge in it when the weather grows cold suddenly or a storm occurs, and therefore the attendant has to see that the chicks reach the protection of the hover, for a time at least, and until they learn the way and are able to go to it themselves. Even when such is the case, if a heavy storm comes up suddenly sometimes the chicks become confused and do not enter the brooder, but huddle together, and unless rescued many are either drowned or die from the after effects of exposure.

The brooder also can give no warning when danger threatens, and so the chicks become too fearless for their own good, and unless guarded, will readily fall victims to their natural enemies. For this reason all runs connected with outdoor brooders should be roofed with fine mesh wire and care exercised when the chicks are allowed at times outside these runs.

In the rapid changes of temperature in spring the outdoor brooder has to be watched closely to see that these changes do not affect the temperature of the hover. More harm is undoubtedly done to young chicks from the variation of the temperature inside the brooder than from any other cause.

On the other hand, there is no danger of a hen stepping on her chicks, no danger of a hen killing other chicks of a different brood, if they should come within reach and no danger of hens fighting until one or the other drops exhausted, as many will do with broods of chicks if they get such an opportunity. There is also little trouble from lice, and last but not least, a greater number of chicks can be cared for at one time without that special attention necessary when the chicks are divided into broods with hens.

From the above facts it can be seen that the use of brooders or hens in the raising of chicks each has its advantages and disadvantages, and so the poultry keeper in making a choice should take into account which would in his case answer the best. As, for instance, if he is going to raise large numbers of chicks brooders would probably be the best. If, however, he is raising valuable and fancy stock in a small way, hens will accomplish this to more advantage than brooders.

Outside of this purpose the poultry keeper who does the best work with either brooders or hens should choose the method with which he has had the most success.—American Poultry Advocate.

INCUBATOR HINTS.

Avoid drafts.

Cool the eggs daily.

Don't use poor kerosene.

Keep your hands clean when handling the eggs. It means good hatches.

Keep water on top of the front if possible.

Make a hole in the screw cork of the font.

This lets off the accumulation of gas in the body of the lamp and prevents firing.

Never turn the lamp full height when first lit; the flame "creeps" and grows after lighting.

When there is a big percentage of infertiles the hatch from the balance of the eggs is usually poor.

The time to remedy the trouble is immediately infertiles are discovered. Look to the breeders.

One of the best ways to turn eggs is to remove one row and slightly tilt the tray, letting the other roll gently over. Then replace the removed eggs in the spare space.—The Australian "Hen."

BE CAREFUL, NOT CARELESS.

We can easily lose an entire year's work in the poultry yard by being careless a single day. This may seem strange, but literally it is true—a single neglect, but little in fact, may upset the work we have planned on the past year.

We frequently allow the droppings to remain on the boards for two or three days, or we fail to keep the drinking fountains clean. Often the slightest neglect will cause disorders which upset a whole year's work.

We do not need to pet the fowls, but we do need to make them our friends and prove to them by our acts that we mean what we say. That we mean to give them good food, clean water, grit, and a good clean house to roost in. When we have done this, our full duty has been fulfilled, and if our fowls are good the results will be satisfactory.

2000 LAYING HENS
East San Gabriel Egg Ranch
S. C. White Leghorns and Barred Plymouth Rocks
Eggs for hatching. We fill orders promptly from our selected matings of great egg-producing birds, at $5 per 100, $45 per 1000. At both Los Angeles Shows, 1909, our Leghorns won on firsts, silver cup and special prizes, and more ribbons than all competitors combined. Eggs from prize winning pens $2 per 13.
San Gabriel car to Masonic Home; two blocks south to ranch.
Swanson & Johnson *San Gabriel, Cal.*

SULLIVANS' "Commonwealth Strain" **Buff Orpingtons**
We win more prizes on Pacific Coast at leading shows than ALL COMPETITORS COMBINED. This season; 40 regular prize ribbons, 15 SPECIAL ribbons, and 9 SILVER CUPS. Free Catalogue, stock and eggs for sale. Eggs $2.00 and up. Stock, $2.50 and up.
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BUFF and WHITE WYANDOTTES BREEDER OF Six Varieties of BANTAMS
Write for circular. Ranch, Clarence Ave. and San Gabriel Blvd., one mile north of end of San Gabriel car line. **San Gabriel, Cal.**

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306-Egg Size $25

"SUCCESS" Incubator now ready for shipment. The greatest bargain ever offered. THINK of IT, a $40 Incubator for $25, we pay the RR. Freight. Send today for free book and full particulars, poultry lectures, etc.

I can sell you Incubators for less than some companies can make them for. I own my own factory, pay no rents, employ no useless office help, pay cash for all material, and am satisfied with a small profit. Write to me today and INVESTIGATE; that's all I ask. My Incubators are hot water system, automatic regulators, ventilation and moisture under control at all times.

Just write me today.

E. E. McClanahan 112 E. Eighth Los Angeles

Incubators

A good chance to get a small machine at a big bargain price. We are overstocked with the small size Improved Pacific, 62 egg capacity. Regular price $10.50, now $7.00 till stock is reduced. Not old, second hand machines, but brand new and first-class in every respect. No better made. Hot water heating; best Sheer Regulators; everything the best. Catalogue free.

West Coast Seed Co.
115 W. 7th Street, Los Angeles
All the best POULTRY SUPPLIES.

Baldwin's White Leghorns

Have Won Again in the Hottest Competition at the Leading Shows on This Coast

San Jose, Nov., '08, we won ***three 1sts, best display, best pair*** and ***6 other*** prizes.
Petaluma, Dec., '08, ***three 1sts., best collection,*** $50.00 Challenge Cup for best ***Cock, Cockerel, Hen*** and ***Pullet,*** with ***5 other*** prizes.

Heaviest ***layers***
Greatest ***payers***
Any can boast.

The ***prize takers***
And ***coin makers***
Of this coast.

Our Specialty, Heavy Laying, Standard Bred White Leghorns. We hatch more (from Sept. to May), cull closer, and have more high-grade birds left than any other breeder. 3000 birds now. Stock, any size, for sale. Eggs $1.50, $3 and $5 per setting. $6 and $10 per 100, $55 per 1000. Send for price list and ***free booklet.***

1st Prize Hen San Jose and Petaluma, 08. **Frank E. Baldwin** The White Leghorn Specialist ***46 Washington Avenue, San Jose, Cal.***

February 6, 1909.

Dear Sirs:—
I have used your Poultry Tonic for a long time and think there is none so good. But you have one remedy, POLLY OIL, I do not feel you know its worth. I had one little sample bottle given me a few weeks ago. I used it on two cases of swell head and it stopped the swelling right away. I had one pullet on which the lump had stayed for over two months, her bill having grown crooked, but as she was a pet I could not have her killed, but could not drive the lump away until I got the sample of Polly Oil. It then commenced to go away, and in a few days is was nearly gone, I have cured every one since that showed any signs of such trouble. I have used all I have and do not want to be without it.
Very respectfully,
FANNIE L. E. WEBBER, Pasadena, Cal.

If not sold by your dealer send the price, 50 cents, and we will send you a bottle, prepaid. WEST COAST MILL, Los Angeles, Cal.

Single Comb White Leghorns
The first essential to success in the poultry business is that the foundation stock or eggs be purchased from a reliable breeder, one who has made a success of the poultry business from the fact that his stock has proven to be the Business Hen. Such stock or eggs we now offer you and stand back of our sales. Prices for stock on application. Correspondence solicited.
Eggs—$1.50 per 15, $7.00 per 100 and $60.00 per 1000.
STUHR-WILLIAMSON POULTRY CO.
378 Bandini Ave. Home Phone 1490 **RIVERSIDE, CAL.**

Starbuck & Son's Heavy Laying Barred Plymouth Rocks
We now unhesitatingly make the proud boast of the best laying strain on the coast, if not in the world. We will publish prices later.
Do you want to hear about our beautiful prize-winning Buff Orpingtons and Silver Wyandottes. We have something to crow about.
Wm. Starbuck & Son, Fullerton, Cal.

When writing advertisers, mention Cultivator.

General Agriculture

PLANT BREEDING ON THE FARM.

Much greater and more rapid progress in the improvement of farm crops would be possible if in general more careful attention were given on the farm to the methods of seed selection and plant breeding. If, for instance, as much time, thought, and effort were devoted to the matter of crop improvement as are given to the bettering of cultural methods and practices the general results would soon force themselves into prominence and a much greater benefit from the work and discoveries of our specialists and scientists would be realized.

Certain lines of wheat improvement, particularly those to increase the yield and to better adapt the crop to local conditions, are considered simple enough for any intelligent grower, but methods of seed improvement are seldom found in use. About the only method ordinarily employed is the separation of the plump and heavy seed from the poor and light seed by means of screens and air blasts. Some systematic method of breeding simple enough to be satisfactory for general use should be generally adopted.

Unlike the corn plant, wheat is normally self-fertilized, almost no crossing occurring naturally, and for this reason the individuals or plants grown need not be isolated as in corn breeding. Doctor Webber of Cornell considers it possible that without resorting to the generally complex methods of hybridization and selection practical farmers may produce valuable varieties and also improve the yield of their own crop. The methods by which this may be accomplished are: (1) The selection of chance variations or sports and the propagation from them of improved varieties; (2) the systematic selection of the best-yielding plants from a well-known race to secure better-yielding strains; and (3) the selection of large heads for seed.

While sports or mutations of wheat plants are very rare, the farmers watching for such superior plants and testing them are even less numerous, and therefore most of these valuable hints of nature are lost. Every farmer should study different varieties of individual plants until he can recognize exceptional plants as to size of head, yield, quality and size of grain, number of stools, strength of straw, and other desirable qualities. The search for promising plants should be begun as soon as the crop shows mature size of heads, and when such plants are located they should be marked so that the seed may be secured when ripe. This work need not be limited to the selection of actual sports or mutations, but should include generally superior plants, and by selecting as many of these as circumstances will permit the probability of securing an individual of exceptional value is greatly increased. The seed from each selected plant should be kept separate and weighed, if the facilities are at hand, in order that comparisons may be made later on. Each one of these plants, which are the first generation selections, should be given a number and briefly described.

It is recommended that the seed of each plant be planted separately in a short row on a clean and well-tilled piece of ground. These rows may be placed one foot apart and about every twentieth row should be planted with some standard variety for comparison. At the beginning of the ripening period the season of maturing of the different rows must be observed to determine their relative earliness or lateness, and when fully ripe the rows should be compared with each other and with the rows of standard varieties. Only those rows apparently ranking high in yield, free from or least affected by disease, such as rust or smut, showing no tendency to lodging or shattering, and those indicating the greatest hardiness should be selected for further propagation. After the superior rows have been chosen each row must be examined for uniformity of type, and all plants not conforming to the general type pulled out and discarded. The grain or seed of each row is harvested and kept separately and given the number of the individual plant first selected. The record of yield, earliness, hardiness, etc., of each number must be carefully preserved.

The seed secured from these first generation selections is used for the propagation of the second generation according to the following plan:

Plant a drill row 17 feet long, using a definite rate of seeding; one-half ounce of seed per row would be at the rate of about 1½ bushels of seed per acre and should be thick enough. These 17-foot rows should be planted 1 foot apart, so that one row represents one-sixteenth of a square rod, or one two-thousand-five-hundred-and-sixtieth of an acre. Plant as many 17-foot rows from each kind as the amount of seed obtained will plant, but if more than one row is planted place them in different parts of the field, in order to obtain a better judgment of the variation due to soil. In planting the 17-foot rows at least every twentieth row should again be planted with a standard variety for comparison.

When the grain is ripe all inferior rows are again discarded, the best rows harvested separately, the grain from each row weighed for comparison with other rows as well as with the standard varieties, and the results recorded.

The third generation is grown in 17-foot rows from the seed of all of

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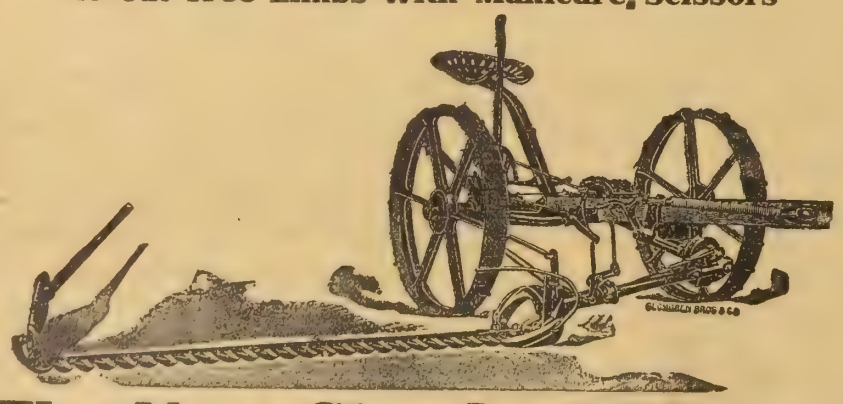
Did You Ever Stop to Think

That the Lightest Looking Mower Is Very Apt to Cut Heaviest;

ALSO

That Only a Very Foolish Person Will Try to Cut Tree Limbs with Manicure Scissors



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All power in a Mower originates from the grip of the wheels on the ground,—the firmer the grip the greater the cutting power.

The 5-foot New Standard Mower weighs 825 pounds. The entire weight of the cutter bar (while cutting) is transferred through the suspension spring to the main wheels. The bar is neither pulled nor pushed,—it is carried—an exclusive Standard feature.

The power thus secured is transferred to the gearing through the mechanically perfect wheels, found only on the New Standard Mower. The gearing develops high speed without undue strain and passes the power to the knife. The knife works in our famous curved Cutter Bar,—the only frictionless knife channel made.

These are a few reasons why the New Standard Mower is the most powerful cutting mower made.

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Newell Mathews Co.

200 North Los Angeles Street

Los Angeles, California

the second generation rows selected, and the results of this year should point out the best-yielding strains. It is advised that of a few of the very best and highest-yielding strains somewhat larger plats be grown this year to increase the seed for more extensive planting in the fourth generation. A few of the best-yielding strains should be saved from this year's crop for more extensive trials in the fifth year.

For the fourth generation 17-foot test rows are planted with the strains retained from the third generation and these are compared with some standard variety. If possible, several test rows of the standard varieties should be grown in different parts of the test plat. At maturity the grain of each test row is harvested and weighed separately, as heretofore, and the yield records carefully made and preserved. By comparing the yields of the test rows and increase-plats of each strain for the three years with each other and with the yields of the standard varieties the highest-yielding strains to be retained for extensive trial may readily be determined. All strains inferior to any other grown and to the standard varieties should be discarded. At this point of the work it is suggested that but two or three strains, or only one, if it is markedly superior, be retained for planting as large a field as possible the following season. If the results show that a superior variety of a high-yielding capacity has been secured the seed should be distributed as extensively as the quantity justifies, and if extensive tests prove it to be a superior variety it should be given a distinctive name.

The method just presented is based upon selecting entire plants and getting the total product of different plants in beginning the selection. In some cases large fine heads from apparently good plants are selected and the product of each head or ear planted in a row by itself, the same as is described for planting individual plants, except that since there will not be seed enough for the 17-foot row the rows are made shorter in accordance with the amount of seed in the heads selected. Ordinarily these will furnish enough for one or two 17-foot rows the next season and the further tests are carried out exactly as already described.

The selection of well-known races to secure high-yielding strains should be carried out in different years in exactly the same way as above outlined. A standard variety, well adapted to local conditions, may be improved by selecting and testing the highest-yielding plants. The tests of these plants through the several years are carried out exactly as described for the selection of chance variations and sports.

The simplest application of the method of selecting large heads consists in examining the field of a good standard variety and gathering a quantity of the largest heads, at least enough to make a bushel or more of seed. The following year this seed is grown in an increase-plat and when the grain is ripe it is again gone over and enough large heads gathered for a similar-size plat the third year. The remainder of the crop of this increase-plat is used to plant the general crop of the third year. This method continued year after year will result in good seed for planting.

That the grade of seed wheat generally used is not up to the standard was ascertained in an investigation by G. W. Shaw, of the California Station, who secured a large number of samples of seed wheat over a wide area in the Sacramento and San Joaquin valleys of California, to determine the general character of the seed used by the farmers of the State. In general the samples showed that the quality of seed used by most farmers is lacking in purity, perfection of development, weight per bushel, freedom from weeds, and freedom from bunt. It is stated that practically all investigators have found the use of large plump seed and of a high weight per bushel the most profitable. No permanent benefit is believed to be secured from the frequent exchange of seed unless a better type of wheat or a more vigorous strain of the same type is obtained by the exchange. The use of seed from heavy-yielding plants, a plump and heavy grain, a clean wheat, and a pure variety are considered by him the most important points in seed selection.

At first thought it would seem that if "like produces like," the large or heavy seeds should produce the best crop. However, we must recognize the individual plant as the unit for selection, rather than the individual seed. If a single plant of wheat be taken and the kernels thrashed out it will be found that all sizes of kernels are produced by the plant, some large and some small.

As every wheat plant contains both heavy and light seed, the fanning mill gives almost the same kind of wheat so far as inheritance is concerned in the light wheat as in the heavy. It must be remembered that reference is made here to the permanent results which may be expected from the use of the fanning mill and that its use or the use of screens for removing abnoxious weed seed is in no way discouraged, and where a large proportion of the seed grain is shrunken, immature, or damaged this method of seed selection will without doubt increase the following crop by the removal of the poor seed.

AN APRICOT ORCHARD IN COLUSA COUNTY.

MORTAR.

To make mortar take one part lime to four parts sand. Mortar for laying bricks should consist of one part lime to two and one-half to three parts sand, depending on the quality of the lime. All mortar for plastering should be allowed at least one week for the thorough slaking of the lime and a complete permeation of its caustic properties.

SERIOUS INTERRUPTIONS.

The truly lazy man is not a common figure in this country, and when he does appear he is not treated with proper respect. Ideal laziness is an art as difficult as playing on the violin. A writer in the Washington Star tells of one member of the Sons of Rest who deserves recognition.

"I s'pose John is still taking life easy?" said the woman in the spring wagon.

"Yes," answered the woman who was carrying an armful of wood. "John has only two regrets in life. One is that he has to wake up to eat, and the other is that he has to quit eating to sleep."—Youth's Companion.

IT'S PENNY WISE

Policy to set out a good tree, costing good money, and then let the sun burn the bark or the rabbits gnaw it, when for $1 an acre you can get Yucca Tree Protectors that are practically indestructible. Write for free sample of the wrap. Yucca Manufacturing Company, 1380 Willow street, Los Angeles.

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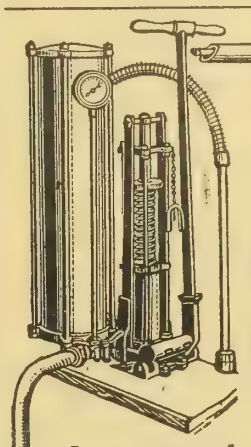

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Bees and Their Care

HUMANIZING INFLUENCE OF BEE KEEPING.

SOME time ago a Vienna Bee Journal published the story of a German bee-keeper's attempt at straightening out his apicultural finances at the end of the year. Entering his bills and things in one column and the income from honey and wax in another he found in comparing the totals that he had run behind about 200 mark. Involuntarily, a deep sigh escaped him. His wife who sat near looked up with a mingled expression of satisfaction and pity, and with a note of sarcasm in her voice inquired what the trouble was, now. He handed her the book. "Just what I expected" she railed at him, "another bagful of money gone, the same as last year, and the year before that, and nothing to show for it. I begged you to sell out last year, but, of course, I don't count. I don't suppose you are ready now?" Yes, he would sell, if she really wanted him to, "but listen a moment."

Amateur Beekeepers Place in Thuringian Forest, Germany.

"Outside of your company, when you are not too disagreeable, my work with the bees has been the delight of my life. I have, of course, my work and duty among the people, and much of that, too, is delightful. But at times shadows creep in, and darkness imprisons the mind; disappointments and worries, of which you mostly know nothing, gnaw at the vital cord like a loathsome worm, and I feel sullen and bitter—a friend of nobody. And then I go to my bees and watch them at their work.

"At first I scarcely see anything. But bye and bye the going and coming of them draws attention. Going—as they come out at the entrance, single and in broken rows, take wing with the joyous spring that speaks of rich pastures and blooming meadows somewhere, and disappear in heaven's blue. Coming—loaded with the pure and precious sweetness of a thousand flower hearts, too heavy and tired at first to go in, but alighting near enough their treasured home to walk in after catching a breath. I watch that, and in watching I forget the things that troubled me. And sometimes I look inside. And as I observe the order and precision and cleanliness there, the unstinted self sacrifice with which the mother bee follows her life work, the tender solicitude of the young workers feeding and caring for the thousands of helpless babes; the mathematical precise cellwork of another portion of the inmates, the intelligent disposition made of the honey and stores—how not a single individual of the tens of thousands of the inhabitants of that marvelous state works or cares for self, but only and always for the community, how freely they offer up their short little life in defence of home—when I watch all that, I say, and try to comprehend the meaning of it all, a feeling of awe steals over my mind, and I seem to be standing with Moses at the burning bush of the Mount of God, and to hear the voice out of the bush: "Take off thy shoes from off thy feet, for the place whereon thou standest is holy ground;" And then I come away humble, self lost, grown a little nearer, I trust, to a likeness of the white-robed ones above.

"And then there is another thing. Instead of spending my leisure time with my chums playing cards, or other games, becoming more or less detached from you and home, I staid right here. We have become one anothers mate and comrade, our life has become knitted closer, our children have had better care and guardianship—if that, now, is anything to you the bees should have some credit for it. Yet, if you still think I had better sell them, why, then, off they go as soon as somebody will have them."

There was no word from her. But he observed her eyes gleaming with moisture, and a quiver playing around her lips, and then he, too, was silent.

And so in our beautiful California of the more mature faces one meets coming and going, how few there are that express the peace and sweetness that might be there if self and dollars were more subordinated, and in the doing of one's appointed work one would do it in the spirit of service rendered society. And beekeeping, amateur beekeeping, can invoke that spirit as few other occupations can. The thing is so easy, so inexpensive, so full of reward for work well done, so inviting even to the highest type of mind, with its mysteries and perplexing problems.

There is scarcely a place in city or country where a few colonies may not be kept with profit and pleasure. Of course, the paradise for the honey makers lies spread over the hills and mountains. Soon, in a week or two, now, the vernal stir of another oncoming season of blessedness will call from out the Deep the open eyed children of a thousand ages; the purple blue-bell of the hidden dell; the sky blue phacelia with its fern like foliage hiding under the skirts of the sage brush; the delicately tinged sages massing together their serrated flowor knops; the gorgeous poppies, the bloodred rhododendron, the yellow azalia flowers no bigger than a pin head, and flowers six inches across, of every imaginable variety, and form, and color, all beckoning to the honey bee with their gift of sweetness, all speed and prosper her on her way as if that was their only business.

Later on, in April and May, as the ozone from the sea drifts in and gathers up and so commingles the perfume and spice of miles after miles of flowers and herbs, the soul cleansing, lung healing, flesh soothing essence of them all, he who at such time has his appointed place and work in the midst of a populous apiary in canyon or arroyo, on mesa or hill, and does not, sometimes, feel a softening glow steal over his heart in contemplation over the abundance of the enveloping goodness, or a tear roll down his heated cheek, must belong to a primitive order of mortals, indeed.—Henry E. Horn, Riverside, Cal.

MINUS QUANTITY.

(Continued from Page 274.)

this form nourish plant life. It is altogether probable that these plant foods become available to plant life through the agency of the humus compounds.

Humus as a Soil Sponge.

Humus acts as a sponge in the soil in its water absorbing powers. Like all other kinds of organic matter it holds water very much better than does mineral matter. A soil well supplied with humus may hold nearly twice the water that a medium sand will carry, and one half as much again as a medium sandy loam. When we remember that plants use from 250 to 800 times their dry weight of

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The Show Poultry Farm
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water during the growing season and that under the California conditions it is of extreme importance for us to care for all the water which falls it will be seen how vital the question of maintenance of a good humus supply is. Under the present conditions it requires a greater rainfall to produce the same amount of dry matter than it did twenty years ago on account of the lessened humus content of the soil. Not only does the humus absorb a greater quantity of moisture and hold it against drainage losses, and for the use of the plant, but it assists greatly the capillary rise of water, thus promoting growth in dry season, the moisture being more slowly and evenly conveyed to the plant roots. The presence of ample humus supplies in the soil means success: its lack means disaster. The water-holding capacity of the soil may be lowered a quarter by reducing its humus content by one half. The original moisture capacity of the soil and its pristine vigor may be largely restored by re-stocking the soil with humus.

Humus Increases the Warmth of the Soil.

As black clothes are warmer than white ones, so the dark color imparted to the soil through the presence of a liberal quantity of humus will render the soil warmer, consequently the crop is thus made earlier and frequently frost injury warded off, although it is admitted that it might happen that so much humus was in the soil as to actually cool it on account of the slowness with which the water held by it tends to evaporate, so that in case of soils very rich in humus the cooling effect might overbalance the increment of temperature due to the change of color. This latter condition, however, is seldom found in agricultural soils.

Humus Betters the Soil Texture.

By the incorporation of this organic matter in the soil, the porosity of the latter is increased and soil aeration bettered, and the weight of the soil is lessened and thus the increased pore space and lessened weight tend to promote easier tillage. As contradictory as it may seem, sandy soils are made more compact and retentive of moisture, while clay soils are made more mellow and porous by this vital thing, humus. It must always be remembered, however, that this easier tillage leading to a cleaner culture serves rapidly to deplete the soil humus supplies and special pains must be taken to restore that which is constantly used up, owing to tillage.

How May the Need of Humus Be Diagnosed?

First, by one's general knowledge of the past history of the soil; Second, by observing the relative action thereon of farm manures and of commercial fertilizers. By the tendency which the soil has to bake or to dry out rapidly or in the case of lost soils the drift will be vastly improved by the addition of humus.

RICH COUNTRY ABOUT SANTA PAULA. (Courtesy Santa Paula Chronicle)

It would require too much time to enter into a discussion of the effects of current agricultural methods upon the humus content of our soils. The condition of many of them is a standing commentary upon such methods. Suffice it to say that clean culture while conserving moisture tends rapidly to burn out the humus and thus rapidly deplete the soil and with this loss the humus goes, also a serious loss of phosphoric acid, potash and lime.

A grower, if he is wise, will keep some sort of track of the plant food outgoes and so adjust his procedure as to maintain the plant food, or at least to minimize the losses. There is much difference as to the effect of the character of farming upon the soil losses. In grain farming, there has been a very serious loss of nitrogen, phosphoric acid, potash and lime, especially from the top foot, in addition to rendering the top soil extremely refractory in cultivation. It is neither the time nor place to discuss the methods of restoring these grain lands.

The horticulturist is engaged in special farming, one which constantly withdraws plant food from the soil, and he has no recourse to any great extent to farm manures to assist him in the maintenance of the fertility of his soil. He is forced then to a more natural system, on the one hand to maintain the humus supply by the use of green manure crops to be turned under, and by the artificial application of plant food on them through the use of commercial fertilizers. But right here comes a source of danger for the continued use of commercial fertilizers alone tends to aggravate the trouble by the exhaustion of humus. They supply little or none.

The function of fertilizers is to augment crop growth, which means the use of humus. If we are to maintain soil productiveness by the use of commercial fertilizers alone, special measures must be employed to maintain the humus content, else rapid deterioration in this direction occurs. This should not be construed, however, as an argument against the usages of commercial fertilizers, but rather a plea for their proper usage in connection with and not in lieu of humus material. No one can hope to secure maximum returns from commercial fertilizers unless there is a reasonable amount of humus existing in the soil.

A Spendthrift.

This brings us to the question as to how one may maintain and augment the soil humus. This may be accomplished by these procedures, all practicable, standard and long practiced by the best farmers, viz., (a) crop rotation, (b) the use of farm manures, (c) the practice of green manuring. While the first named, crop rotation, is not available in orchard practice, yet on account of the fact that many fruit growers are also interested in other farming operations it is pertinent to say that crop rotation retards where continuous cropping hastens soil deterioration. The one maintains a higher degree of fertility, assists in the regulation of labor, aids in the combat with weeds, and makes for success, the other lowers fertility, reduces yields below the point of profitable farming, is a spendthrift of humus. Rotation should be short and include leguminous crops. The fundamentals for this practice are to select three classes of crops, one which will sell well, one which has fertilizing value, and one tending to free the soil from weeds—money, manuring and cleansing crops.

As to the second method of securing humus, viz., the use of farm manures, I assume that no one is so foolish as to neglect their use when obtainable at a reasonable cost. Rich in organic vegetable matter, already partly decomposed in condition for and containing agents inducing rapid decay, it is ideal and rich humus of the best sort. No one gets its maximum value; many get but half.

The third method, viz., the use of green manure crops, is well recognized in the southern part of the state, but in the north farmers have not as yet realized its importance. It is the method, par excellence, for securing humus. The most favorable crops for use in California are the Canadian Field Pea, the Vetch, or Winter rape. It is seeded in the fall and turned under in the spring. It affords the most natural and the cheapest method of maintaining a good humus supply.—G. W. Shaw, Berkeley.

Minister. "Have you ever cast your bread upon the waters?" Mrs. R. (proudly). "Never since my first batch."—Christian Register.

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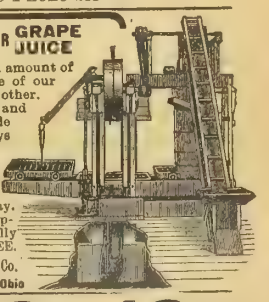

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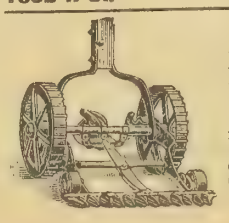

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Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Catalpas From Seeds.

Please tell me how to start catalpa trees from the seed, also will palms be injured much by frost and cold weather in upland valleys Subscriber, Newberry Park.

Catalpas are started from seed sown in flats very much as are eucalyptus. The prepared loam soil is spread in the flat and levelled. The seed is sown lightly over the top and a light surface of sand or very fine mulch of leaf mold. They should not be allowed to suffer from want of moisture and later may be reset in nursery row.

Many of our palms are purely tropical and will stand no frost whatever and the only culture in this country is indoors or in glass houses. As to whether the Washingtonia or the Canariensis, the so called date palm, or other ornamental palms will stand the cold can only be known by having more definite idea of the temperature. Doubtless Ventura county could, grow these palms to perfection in practically every section.

Fodder.

Will you kindly advise me through your Queries and Replies column, the best fodder food that grows without irrigation on adobe soil? Would you advise cow peas or cow peas and oats sown, or sorghum?—W. G. S., Los Angeles.

We would refer the inquirer to observation of H. A. S., and Mrs. Sherman's notes on same. Regarding cow peas, if they are to grow during the cold season as we assume they must without irrigation, they would not answer. It must be borne in mind that the cow peas are beans and will not grow during the colder weather. Canadian field peas would be better, or the ordinary Blue Prussian. Sorghum is excellent and we would refer the inquirer to many articles which Mrs. Sherman has written on the advantage of sorghum.

Green Forage.

I have made a discovery that may be a help to your Cultivator column. In August I irrigated some ground and in September sowed it with White Australian wheat. Two acres have kept a cow and a calf and yet half of the wheat is three feet high and has leaves an inch wide. Such sowing in orchard would furnish wonderfully good pasture for hogs, calves and colts.—H. A. S., Kerman.

Yes, the wheat sown early that way will keep much stock. The manure we haul out on the land in the summer starts to grow at the first rain and gives us feed by January a foot high. We pasture it off with the stock in the vineyards and orchards. The malaga grapes that are shipped early, as well as the olive orchard has carried much of our stock. If I was sowing this crop in a orchard for feed I would sow at the last cultivation of the summer time the common green peas and let them come up with the first rains. These are more valuable for nitrogen production in the orchard. The tops grazed off and the roots turned under helps the soil considerably.

The black eye pea is a bean and last summer we had them cover the ground three feet deep over most of the young orange orchard. They were chopped with the discs and plowed under in November and by January 1, had rotted completely.

The tops we did not harvest in the orange orchard as the land is heavy and we were after the humus as well as the nitrogen. This orchard has not been boggy all winter for we have hauled the stable manure there daily when we could not get it elsewhere on the wet soil. There is more money in dressing the pigs and feeding them to the men when they weigh a hundred pounds than in turning them off to the market.—M. E. S.

No Weedy Ditches.

I am making up a lot of cement tile—12 and 18-inch—to carry water over difficult places. I intend some day to eliminate the open ditch, though I have rigged up a rotary harrow with sweeps or cups that keep ditches up sharp and clean. It is a great deal of work, however, but weedy ditches are an abomination.—H. A. S., Kerman.

We have tried many plans on the ditches and find the cheapest is the revolving harrow, then a good chinamen to burn them and then plow them with two horses and follow right along with a V. This makes it straight work. I do not like anything planted on the ditch banks for that reason. The cement ditch would do away with the cleaning and in places where the seepage is too great they are a good thing, yet in dry years the seepage of the ditches when they are kept full of water prevents the need of surface irrigation. The ditches on the ranch seep 250 feet. I have tested this by digging wells beginning at a hundred feet from a dry ditch and going again fifty feet further, then filling the ditch with water. In three weeks the water would appear and in six the well would fill up to within a foot of the top of the ground. I therefore simply have ditches a thousand or eight hundred feet apart and fill them full to the top to do the irrigation, beginning in January they have the land filled with water by March 1st, and the water is let out and the plowing begins. Some of the land has to have the ditches a little closer, but usually the distance given will put in enough water for the season. The water table then drops steadily as the plants grow until it is down to the right distance by June 1st.—M. E. S.

Bitter Cow's Milk.

Will you please tell me the cause of a cow's milk becoming bitter after twenty-four hours standing? She has not been fresh for three years. Does that have anything to do with it? It cannot be caused from eating weeds as she has good alfalfa pasture.—Subscriber., Corcoran

This is not caused from the feeding or from the fact that the cow is farrow. It is simply caused by a bacteria that grows during the cold weather and the way to overcome it is by thoroughly washing all utensils, following with abundance of boiling water and finally water in which lime is mixed. Be careful in stable, also, of allowing any dust or possibility of bacteria coming in contact with the

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Robt M. Wollitz, Corona, Cal.

milk. Observe care and we think you will have no further trouble.

Canaries Eating Eggs.

I have several canary birds that eat their eggs as soon as laid. The habit seems to be contagious. Can you tell me any means of prevention? Subscriber, Capay.

If any subscribers have had experience along this line and have corrected the habit, will they please give us the information desired? In a general way we will say the habit is started from a lack of properly balanced food, especially possessing a lack of lime, but once started it is a very troublesome habit and very hard to break. With poultry, we have before now wrung the necks of many hens who have started the habit, in order to get them away from the rest of the flock which seemed to learn from them. If you have birds which have not formed the habit we would surely separate them, then try to correct the feed and the habit in the others.

Flat Head Borers.

Is there any way to prevent borers from getting into young apple trees I have planted, and what time of the year do they start work? Would whitewashing them and putting wood ashes around the bottom do any good? —Subscriber, Madera.

The answer for this is given in the reply to a similar query. The first factor is to prevent any sunburn of the bark of the young trees. This may be done by the whitewash given above or by the fibre or paper tree protectors sold in the market, or in addition to the above given whitewash the following is good: Fresh lime 25 pounds, whale oil soap six pounds, water to slack and make of proper consistency. The adult beetle will appear a little later than this, probably in May or as early as April and lay its eggs on the trunks and branches of trees. They prefer the sunburned and partly dead wood so that thrifty trees are less liable to their attack and the whitewash is an additional preventive.

Hollow Tail.

Tell me what to do for a cow with hollow tail. I have a cow just come in with her second calf in good condition, but when she calved she did not do well, ate but little, and did not give much milk for several days. I find she has a hollow tail, that is the end of her tail has no bone in it for about four inches. She is now doing all right. Should I do anything for her.—Subscriber.

Hollow horn and hollow tail are diseases of the human imagination. A little before a calf is born the cow drops down a little at the butt of the tail and also as a cow grows older the tail will show this condition. The usual remedy for these troubles is to stiffen the cow up with plenty of feed and then the trouble is gone. Hollow tail and hollow horn come from hollow stomach more than anything else. —M. E. S.

Fillarie For Green Manure.

I have here in my young orange orchard the soil covered with luxuriant growth of fillarie. Sometimes as much as two feet high. Has it any value to plow under? Would it be advisable to kill it out and sow peas or clover A part of the orchard is on a hill side and it certainly keeps the soil from washing during the winter rains. Are peanuts sowed with the shells on or off?—H. G., Lemon Cove, Tulare County.

The fillarie is surely worth plowing under and will have a beneficial effect upon the soil and as you say has certainly saved heavy washing this winter. It is not a legume and has not the power of grasping from the air the nitrogen which the legumes have, hence the humus from it has not that value which is given by the leguminous plants. Ordinarily we would prefer the legume but as you say the growth is so heavy that the saving of the soil is a great consideration we would not kill it out, but believe it might be advisable to put in with it either the peas or vetch and allow them to grow up together.

Peanuts may be planted with or without the shell as preferred. Usually they are not shelled.

Identification of Vine.

A subscriber sends leaf and asks if same is from the Lippia Repens? The letter and the leaf were sent to the botanist, Dr. A. Davidson, and the letter has unfortunately been lost. If the subscriber will write again with stamped envelope we will be glad to mail slip of Lippia, which will help subscriber to determine what the Lippia leaf is like. Judging from the leaf sent, Dr. Davidson says: "This is a Speedwell, probably Vernoica Buxbaumii, a garden escape in some districts." It is a native of southern Europe that has been naturalized in North America.

Poisoned Wheat.

Will you kindly inform me through your paper of the following? How can I prepare poisoned wheat with cyanide of potassium? How much crude carbolic acid to one gallon of whitewash for using on trees to prevent attacks of flathead borers?—W., Sanger.

The formula for making poisoned wheat from cyanide we have not at hand, but give here one which may be equally as good, or if you prefer the cyanide it may be made along the same general line except you will not need vinegar to dissolve the poison as in the case of stfychnine. The strychnine formula is: One ounce strychnine crystals dissolved in one-half pint hot vinegar, add two pints hot water, pour this over twelve pounds wheat stirring several times until the water is all absorbed and spread on paper, of course where it is not accessible to children or to stock. Allow wheat to dry and when dry pour over it a syrup made of one pint of water and three pounds sugar, which have been boiled until it candies when dropped in water. Stir the sweetened mass until all is well mixed. This may be done in an earthen vessel as it is easily cleaned and leaves no danger of poisoning. When ready to use it, take four or five drops of anise oil to each pound of the poisoned wheat. The soaking of the wheat in the poisoned water before adding the syrup is preferable to the method of making syrup and poison in one mass. There is danger in such cases of the sugar hardening and flaking off, leaving the wheat without any poison.

We cannot give you information as to amount of carbolic acid but think it should be a very limited amount. Here is, however, an excellent formula from California Fruits: 30 pounds lime, four pounds tallow, five pounds salt with sufficient water to make flow well.

Tuberculosis.

I have a fine jersey cow. She looks well and fat but has a cough and her hair seems to loosen when I curry and brush her. I sometimes think it will all come out and she seems to have a skin disease. The skin gets hard and stiff, then breaks out in sores which seem to be itchy. There are little warts on the udder.—Subscriber, San Gabriel.

I should test this cow with tuberculin before I tried anything else. If she does not react to it, then clean up wherever she has stood with by whitewash with carbolic acid in it. Then treat the skin just as you have been doing. The trouble may be that she reinfects the skin from old disease germs around the stable. If this is the case it should disappear if you destroy it on all the surroundings as well as on the animal herself. You might try this before you have her tested if you desire to do so.—M. E. S.

One winter's day a very bow-legged tramp called at a home in Ontario and stood to warm himself by the kitchen stove. A little boy in the home surveyed him carefully for some minutes, then finally approaching him, he said, "Say, mister, you better stand back; you're warping."

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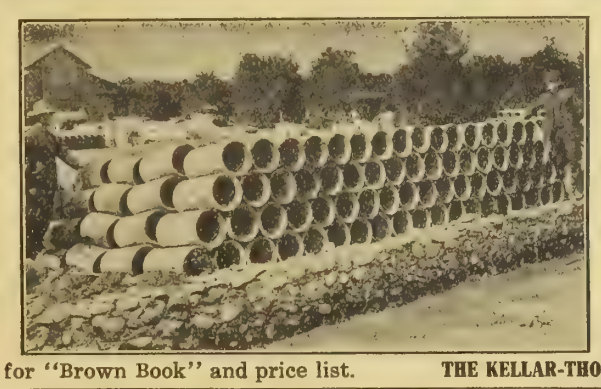

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MAKE $100.00 MONTHLY—LEARN telegraphy at home. Send for particulars. COLUMBIA COMMERCIAL COMPANY, 204 East 9th St., Los Angeles, Cal.

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FOR SALE—ABOUT 200 HEAD OF work and brood mares, including young mules and horses from one year to four years of age. One full blooded Percheron Stallion four years old in May. One Jack about seven years old. Several full blooded Poll Angus Bulls and a number of full blooded Durhams. CHAS. W. HART, Farmersville, Cal.

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S. C. BROWN LEGHORN EGGS, $1.50 and $2.50 per 15; $5.00 and $7.00 per 100. Hens thirteen months old $1.50 each. MRS. C. H. VARY, Pomona, Cal.

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FOR SALE—MATED HOMER PIGEons, good, strong, healthy stock guaranteed. For prices and particulars address CLYDE W. ROHRER, Box 252, Reedley, Cal.

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FOR SALE—BABY CHICKS, ALL VArieties, 100 lots upwards. J. STANSFIELD, 3301 East 14th St., Fruitvale, Cal.

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CALIFORNIA'S OIL PRODUCTION.

The value of California's oil production in 1907 exceeded that of any other mineral product, and the State was second in rank among the oil-producing States. From the best information available at the present time it is believed that the production of crude petroleum in California in 1908 will aggregate between 44,000,000 and 46,000,000 barrels, exceeding that of 1907 by about 12 per cent. Nearly every district shared in this increase. This condition was brought about by the increasing demand and consequent higher prices for oil which stimulated drilling, particularly in the Coalinga and Kern county districts. Much development work was carried on in Coalinga and the field was extended; in Kern county many new wells were brought in and many old wells which had not been pumped for several years were cleaned out and operated.

The completion of the pipe line in 1907 and the building of the railroad to Midway, together with the construction of the new rifled pipe line of the Associated Oil Company from Kern River to tide water, did very much to encourage drilling and increase production. The past year was one of greater activity in the Santa Maria field than ever before, but the output of this field, which in 1907 gave promise of being enormous in 1908, was considerably lowered by the presence of water. Some of the wells have an extraordinary yield and the field leads all others in the state in rate of production per well. More crude oil was shipped from the fields of Southern California in 1908 than ever before. The greater part of the oil exported from California comes from the Santa Maria field, its situation giving it command of the coast trade from Alaska to Chili and of foreign trade with Japan and Hawaii.

No new oil fields of importance were discovered in California in 1908, although petroleum was discovered in several places, one being near Mono Lake, in Mono county.

BERRY PLANTS.

STRAWBERRY PLANTS—FINE ONES, strong, thrifty, restricted Kellogg method, best varieties, Marshall, Jessie, Climax, and Everbearing. $3.00 per 1,000, $12.50 per 5,000. To close the season all plants are one-half prices quoted above while they last. Address J. R. POWELL, Ripon, Cal.

WHITE ROCK EGGS FROM MY PRIZE winners at recent Los Angeles Shows. $1.50 per 13; $3.00 per 30. J. W. WHITNEY, R. F. D. 2, Long Beach, Cal.
STRAWBERRY PLANTS, ASSORTED, $2.00 per 1,000; Himalaya Mammoth, Raspberry and Dewberry plants $1.50 per 100; fruit trees 10 cents each. TRIBBLE BROS., Elk Grove, Cal.

STRAWBERRY PLANTS—FINE ONES, strong, thrifty, restricted Kellogg method, best varieties, Marshall, Jessie Climax, and Everbearing, $3.00 per 1,000, $12.50 per 5,000. Address, J. A. POWELL, Ripon, Cal.

WANTED—LADY THOMPSON, TEXAS, and A-1 strawberry plants, also Loganberry. State number and lowest price. None but first class plants wanted. Address, G. H. HOPKINS & SON, Burbank, Cal.

FOR SALE—BERRY PLANTS; LOgans, Giant Himalaya, Mammoth and Lucretia dewberries. Would exchange for rooted Tokay. A. P. HENNING, box 225, Cottonwood, Shasta Co., Cal.

FOR SALE—LOGAN, MAMMOTH, PHEnomenal, Himalaya, Blackberry, Dewberry; strong plants, $10.00 per thousand. Strawberries, $3.00 per thousand. GRIDLEY COLONY NURSERY, Gridley, Cal.

FOR SALE—BERRY PLANTS, BLACKberry. Dewberries $10.00 per thousand. Mammoth Logan, Phenomenal $1.50 per hundred. H. O. SORKNESS, Hemet, Cal.

FOR SALE—LOGAN BERRY PLANTS well rooted and very strong plants. Write me for terms. Plants ready now. Home 'Phone 2161. Z. A. WOLLAM, Riverside, Cal.

TURKEYS.

WANTED — TURKEY HENS AND turkey eggs. Address, GEO. L. T. RIVARD, Oceanside, Cal.

Have the Time of Your Life

with my Portable Billiard and Pool Tables. Send for Catalog and let me show you good, practical Tables at the price of toys. Used anywhere. No special room required. **C. RIDDERHOF**
Merchants Trust Bldg., Los Angeles

Household Department

TWO SCHOOLS.

I put my heart to school,
In the world where men grow wise.
"Go out," I said, "and learn the rule;
Come back when you win the prize."

My heart came back again,
"And where is the prize?" I cried.
"The rule was false, and the prize was pain,
And the teacher's name was Pride."

I put my heart to school,
In the woods where wild birds sing,
In the fields where flowers spring,
Where brooks run cool and clear,
And the blue of heaven bends near.
"Go out," I said; "you are only a fool,
But perhaps they can teach you here."

"And why do you stay so long,
My heart, and where do you roam?"
The answer came with a laugh and a song,
"I find this school is home."
—Henry van Dyke in the Atlantic.

THE FIRST QUARREL.

It is said they all go through it some time or other, generally in the early part of the married state. Here is the way it was:

They had been married two weeks and were settled in a Harlem flat. He sat in the Morris chair, smoking with apparent contentment, but there were signs that he was a bit restless. She idly picked up the evening paper and glanced over it, but no divorce suits were chronicled at any length and there were no new affinity cases—practically nothing but whole pages of politics, so she tossed the paper away. There were a few desultory observations from each other, but, strange to say, it seemed a trifle diffcult to keep a conversation going. Of course there was the eternally fruitful topic of themselves and what each meant to the other, but this subject had been so thoroughly discussed during their honeymoon that neither felt exactly like taking it up again now. They were trying now to ignore their newness to each other and wanted to seem settled and married-like. So there was a hint of uncertainty, a vague uneasiness in the air. Hubby glanced at his bride as if he felt that in his capacity as head of the household and her lord and master it was up to him to do or say something or other, but he didn't know what.

He glanced at her again. Their eyes met, and instantly each looked off somewhere in an attempt not to seem self-conscious. Finally he spoke:

"Wouldn't you like to go to a show this evening?"

"Why, I don't know; do you want to go?" inquired the bride sweetly.

"Why, no, not specially; but I thought maybe you'd like to go."

"Why, yes, I'd like to go if you think you'd care to."

"Well, I don't particularly wish to; but I thought if you felt as if you wanted to see a show, why, we'd go."

"But I don't want to drag you out with you looking so comfy and fixed!" protested the bride affectionately.

"How absurd-" said hubby fondly. "That doesn't matter if you think you would like to go out."

"But I don't want to go if you're coming along just because you think you're pleasing me."

"Nonsense! Why, I want to go if you want to go."

"Yes, that's just it! But I don't want to go unless you do."

"But then it will give me no particular pleasure to go to a show unless I know you are enjoying it."

"Why, of course I will enjoy it if you're along."

"All right, then," said he promptly. "Come on and we'll go."

"But just now," said she anxiously, "you said you didn't particularly care to; I am sure I shouldn't want to go unless I felt that you were getting as much fun out of it as I."

"Fiddlesticks!" He said it a trifle impatiently. "Now listen to me and answer yes or no—do you or do you not want to go to a show?"

"Why, you know, Harry, I'd just love to, but—"

"All right, then, we'll go!" exclaimed he a bit shortly, springing to his feet.

"But I'd be perfectly miserable all the time," said the bride, "thinking that you'd come just to please me, and that we might have had a cozy little evening at home if—"

"All right, then, we won't go," manfully repressing an impulse to anger and replying resignedly as he sat down again.

He picked up the paper and pretended to become immediately absorbed in it, settling back in his chair with an air of patient but irrevocable finality. Mrs. Bride glanced appealingly at him, but his face was stony and gave her no comfort. She sat perturbed and anxious, feeling as if something dreadful had happened. A deathlike silence ensued for perhaps two minutes. Mrs. Bride then broke it fearfully.

"Harry," she said, "I feel perfectly dreadful—as if you were terribly angry at me. But you are not, are you?" Pause. "I did think when you first mentioned a show that it would be nice to see John Drew. I've been just crazy to see him in that new play of his, but I was not sure that—"

"Then you want to go, after all!" said her husband, laying down his paper and staring across at her mystifiedly.

"Why, I always love to go to the theater, but—"

"Then, for heaven's sake, come on and let's go!"

So they went, but neither enjoyed the play, because Harry was grumpish and his wife was hurt. On their return Harry stumbled over something in the dark hallway, and said "h—l!" and the bride's feelings gave way immediately. Then ensued their first quarrel. It is said they all go through it some time or other, generally in the early part of the married state.

About the House

St. Patrick's Day, the day when, according to the old weather prophets, the warm side of the stone turns up, will soon be here and everywhere you see the shamrock and the knot of green ribbon in the buttonhole. Every year the day is more generally observed. In many families one or more Irish dishes are served while some bit of green, typical of the day, is on the table; and in the evening the old Irish songs are heard in many homes.

At this season of the year the winter underwear often needs considerable mending to make it last until warm weather. In mending thin places, put a piece of cheesecloth on

Coulson's
POULTRY FOODS

Special Dry Chick Food

Makes Them Grow

COULSON'S SPECIAL DRY CHICK FOOD, during the five years it has been on the market has justly earned for itself its great reputation as a life-saver for little chicks by its special adaptation to their needs.

THE UTMOST CARE is observed in the selection of each of the dozen or more articles composing this unequalled feed; tender seeds, cracked grains blown free from dust, steel-cut oats, tiny pieces of dried meat and bone, willow and pure bone charcoal, are combined with other very necessary ingredients; every article being selected with special reference to its quality, strength, and desirability for the needs of the young chick.

FOR YOU TO BUY the many different articles composing Coulson's Special Dry Chick Food is quite impracticable; you could not be certain as to their quality for one thing, and the high cost of certain of them when purchased in small lots might lead to their being left out to the detriment of the chick.

TO MAINTAIN the high reputation of COULSON'S SPECIAL DRY CHICK FOOD, nothing is left undone to make it absolutely the best feed that can be made for the little chicks.

COULSON'S SPECIAL DRY CHICK FOOD can be fed exclusively to your little chicks for the first six weeks, at a cost of about four cents (4c) each; and what is of still greater importance, it will do all that can be done in the way of feed to bring them through that critical period of their lives in full health and vigor.

TO RAISE EVERY CHICK you hatch; to have fine, large, healthy chicks; to have chicks that will stand up and crow when eight weeks old; to raise chicks that you will be proud of, FEED COULSON'S SPECIAL DRY CHICK FOOD, THE LIFE SAVER.

Write Us for Free Samples and Prices

Manufactured Only By

Coulson Poultry and Stock Food Company *Petaluma, California*

GERMAIN SEED CO., Distributing Agents, Los Angeles, Cal.

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FOUNDED IN 1857. CAPITAL FULLY PAID $1,000,000.00

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Exclusively a Savings Bank whose policy is for ***Conservatism*** and ***Safety,*** the result of ***Fifty-One Years' Experience.***

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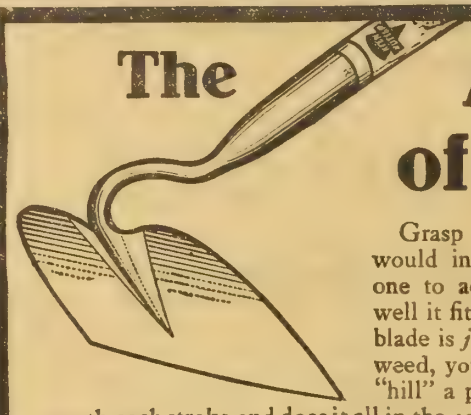
The Angle of a Hoe



Grasp a Keen Kutter Hoe as you would in the field—better yet, put one to actual service, and see how well it fits its job. The angle of the blade is *just right.* If you strike at a weed, you are sure to cut it—if you "hill" a plant it carries a full load of earth each stroke and does it all in the *easiest position* you can assume.

KEEN KUTTER

Farm and Garden Tools

are fitted by *model* and *temper* for great service and long wear. The fine oil tempering gives elasticity, power and keenness and the model "hang" and balance are just right to make the work easy.

The Keen Kutter trademark covers Forks, Hoes, Rakes, Scythes, etc., as well as all bench tools—Axes, Hammers, Saws, Planes, Adzes, Chisels, Augers, Bits, Braces, Gimlets, Bevels, Squares, Draw-knives, Gouges, etc., besides every possible tool and cutlery for the household. Look for the trademark—it guarantees *quality.* Sold for 40 years under this motto:

"The Recollection of Quality Remains Long After the Price is Forgotten."—E. C. Simmons.

Trademark Registered

If not at your dealer's, write us.

E. C. SIMMONS KEEN KUTTER TRADE MARK U.S.A.

SIMMONS HARDWARE CO. (Inc.), St. Louis and New York, U. S. A.

Angle Lamp

The Light That Never Fails

Thousands in use all over the country. A good light is the greatest pleasure and the first necessity of every home.

The only lamp on the market that is sold under an absolute guarantee.

Remember, the light from Kerosene is the light science has agreed upon as being the purest and best, because it is soft and mellow and restful to the eyes.

Here are a few of The Angle Lamp Merits:

NO UNDER SHADOW. NO SMOKE, NO ODOR, LITTLE HEAT. GREAT ECONOMY—COST LESS TO BURN than an ordinary lamp. As easy to operate as gas or electricity, and better than either. ABSOLUTELY SAFE under all conditions. Lighted and extinguished like gas. Burned HIGH or LOW like GAS without a trace of odor. And a BRILLIANT, soft, steady, shadowless light—but this you will have to see to appreciate.

The lamp as shown in cut burns 22 hours on 3 quarts of oil.

Send for Illustrated Catalogue with Prices

Boesch Lamp Co., 1135 Mission St., San Francisco

Established 1869 Incorporated 189

SECURITY SAVINGS BANK

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3% On "Special Ordinary" Accounts

Which accounts MAY BE CHECKED AGAINST without presentation of pass-book. Interest is paid monthly on the minimum monthly balances.

"Johnny's crushing the tomatoes!
Flossie's spoiling all you've done!"
"Well, no matter; let 'em go it
If they're having any fun."
—Chicago Record-Herald.

Good nature is as contagious as the measles. Put on your best smile when you get up in the morning and observe how everybody will greet you with a sunny face.

the under side, then darn through it. The cheesecloth takes the strain. If you need to put on a patch first baste it on, then sew it on the machine with two rows of stitching, one a little within the other. Trim the rough edges of the patch to the outside row of stitching and the worn edge of the garment to the inside edge. In mending any kind of knit underwear be sure to make allowance for the stretching of the garments.

When the underwear is too much worn to be mended there may be parts of each garment that are good and may be made over for the little ones. Sew the seams on the machine, then press open and "catch stitch" from one side to the other. Finish the bottoms and sides of the drawers with a crochet edge. It is a simple stitch and easily done. Use knitting cotton or some of the mercerized cottons. Fasten the end of the thread, put the crochet hook through the garment, catch the thread and draw a stitch through on the hook, leaving the thread on the other side. Draw the thread through the loop on the hook. This makes the first stitch. Then put the hook through the goods, draw a stitch through; this makes two stitches on the hook; draw the thread through both stitches and repeat. Finish the tops of the drawers with muslin bands and buttonholes. The shirts are finished with the crochet edge and a simple beading crocheted around the neck to run a tape or ribbon through. The work is easily done and the small garments cost more in proportion than the large ones when bought, so the saving is considerable.

Very pretty, serviceable rugs may be made out of old ingrain carpet, and a correspondent of the American Farm World gives the following careful directions for making them:

Cut your carpet into bias strips about one and one-half inches wide. Lengthen the stitch on your sewing machine and stitch each strip through the center, joining the pieces as you go. Wind them into convenient skeins and wash in warm soap-suds. The strips will "fluff up" when dry, but the stitching will hold them together. Five and one-half pounds of "rags," thus prepared are required for a rug one and one-half yards long and twenty-eight or thirty inches wide. Now get your carpet weaver to weave it for you, using only one-third as much warp as for carpeting, and you will have a nice, durable rug, alike on both sides, and heavy enough to stay where you put it. It may be hit-or-miss, or the colors may be assorted as you cut and wind the balls. Mine is made of two kinds, light in the center with a twelve-inch border of dark at both ends. Hook in a fringe three or four inches long, or, better still, if you can obtain it, use the rug-fringe that may be purchased at any upholsterer's for fifteen to twenty-five cents a yard.

In response to a request made some weeks ago for recipes for making candied orange peel, E. N. P. sends the following.

Put the orange rinds in brine for three or four days or longer. When taken from the brine cook in fresh water until tender, then cover with cold water for a few hours. Have ready a hot syrup. Take the rinds from the cold water, place in a jar, and pour the hot syrup over them. Leave until the next day. Drain off the syrup, reheat it and add a little

HOW ONE MAN SOLD HIS FARM

A Minnesota Farmer successfully tries new long-distance plan of selling.

FOURTEEN MEN IN SIX DIFFERENT STATES WANT HIS PLACE.

Makes sale without aid of real estate agent and doesn't pay a cent commission.

Cass Co., Minnesota, (Special Correspondence)—The farmers in this section are intensely interested in a recent experience of one of their neighbors. Mr. H. St. John, who owned a farm in Cass County, has succeeded in selling it at his own price, without the help of a real estate agent and without paying a cent in commission. He could have sold the farm fourteen times over as he had that number of men after it. In the course of a conversation with your correspondent, Mr. St. John said:

"Yes, I sold my farm without any trouble and for the benefit of others who desire to sell, I don't mind telling you just how it happened. I had tried all the usual methods of selling, that is by advertising in the local papers and through local real estate men, and had about given up hope of being able to sell, when I happened to come across the advertisement of a concern known as Leonard Darbyshire, Incorporated, of Rochester, N. Y., who make a business of finding buyers for anything one wants to sell. I wrote to these people for their plan and I received a letter from Mr. Darbyshire, the President of the Corporation, together with a copy of their booklet, fully describing a new and up-to-date method of bringing buyer and seller together. Their plan looked good to me and I sent them a description of my farm which they must have sent to prospective buyers all over the country because I received no less than fourteen letters from men who wanted my place, and these letters came from Iowa, Illinois, Mississippi, Wisconsin and Nebraska, and other States outside of Minnesota. You can imagine that with such a demand I had no trouble in making a sale and I sold my farm to a man in Iowa at my own price, and what's more to the point, I didn't have to pay a cent commission to anyone. I cannot say too much in favor of the Rochester concern and I am delighted with the treatment they gave me. They did everything for me that they agreed to do and I never would have been able to sell so quickly without their assistance because it is hard to sell through an agent, and even if an agent does find a buyer, you have to pay a large amount in commission. The system of bringing buyer and seller together originated by Mr. Leonard Darbyshire, is the best I ever heard of, and he seems to be able to find buyers for all kinds of properties, no matter where they are located."

Mr. St. John's success in selling his farm was due to reading a booklet issued by Leonard Darbyshire, Inc., of Rochester, N. Y. This booklet tells of a new and successful method of finding buyers for farms and real estate, business properties, automobiles, patents and in fact almost anything salable. The Corporation issuing this book are not real estate agents and do not accept a penny in commission on sales made by their assistance. Their plan of cutting out the real estate agents has met with remarkable success, and owners throughout the country are quickly availing themselves of this opportunity to sell quickly places which for a long time remained in the hands of real estate agents, who failed to sell, for the reason that the commission which the agent placed upon the property killed the sale.

It is said that Mr. Leonard Darbyshire, the president of this concern, is doing more to assist property owners to sell than all the real estate agents in America combined, and anyone wishing to dispose of anything anywhere at any price, would do well to write to Leonard Darbyshire, President, Dept. 1034 Rochester, N. Y., giving a brief description of the property for sale, and asking him to send a free copy of his booklet explaining his new method of selling.

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Scenic Hotel of the World
Overlooks San Francisco Bay and City
Five Minutes Ride from Ferries

600 rooms. Every room has bath

Rates—single room and bath—$2.50, $3.00, $3.50, $4.00, $4.50, $5.00, $7.00, $10.00.
Suites—$10.00, $12.50, $15.00, $20.00 and up.

Management

Palace Hotel Company

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AND HOW TO FEED

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more sugar. Then cook the rinds in the syrup for half an hour or more. Take from the syrup and when they have cooled return to the syrup and cook until they will take up no more sugar. Then dry in a warm oven or in the sun.

• • •

I have always supposed that to make a good cake you must thoroughly "beat" the eggs, but the other day in looking over an old magazine I found the following recipe for making a "firm, moist and velvety cake," It seemed most too "easy" to be good, but I tried it and it proved to be all it claimed to be:

One cup of flour, one cup of sugar, a pinch of salt and a full teaspoon of baking powder sifted together three times, a quarter of a cup of melted butter, two eggs broken into a cup and the cup filled up with milk; the whole stirred together only long enough to thoroughly mix the ingredients. This makes a good sized loaf and may be frosted any way desired. A nice chocolate cake may be evolved from the same recipe by the addition of several spoons of cocoa.

Fruit and nut "caramels" can be made without cooking, easily and quickly. Chop fine, or run through a meat grinder, nut meats, figs, dates and seeded raisins, about equal portions of each. Pack smoothly in a shallow pan and with a sharp knife cut in small squares and wrap in oil paper.

An Eastern paper gives the following as a reliable formula for making marshmallows. Dissolve half a pound of gum arabic in one pint of water, strain, add half a pound of granulated sugar (one cup), place over the fire and stir constantly until the sugar is dissolved and the mixture takes the consistency of honey. Add gradually the whites of four eggs, well beaten, stirring the mixture steadily until it will not adhere to the fingers. Pour into a pan or box slightly dusted with starch, and when cool divide into small squares.

To make "twin biscuits," roll out the biscuit dough much thinner than usual. After cutting your biscuits, brush the tops of half of them with soft butter and put the others on them sandwich fashion, pressing tightly together, then bake as usual.

Carrots are not given the consideration they merit. Not only are they palatable when well cooked, but if eaten freely are said to be a complexion beautifier. When the full flavor of the carrots is desired they should be washed carefully and boiled without scraping. After boiling, drop them in cold water and the skins will slip off as will those of beets. They may then be sliced or diced and served with melted butter or with a cream sauce. Rubbed through a sieve and added to a cream soup they will give it a delicious flavor.

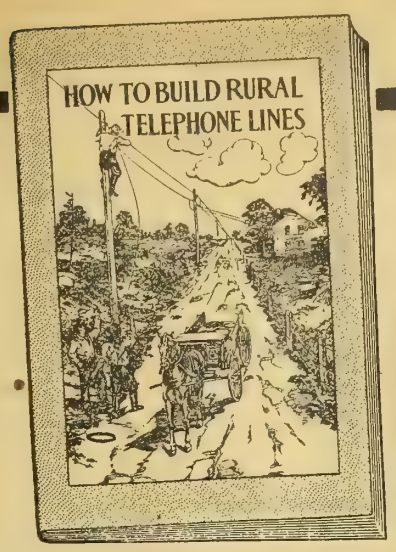
I found a bagful of old stockings hanging in the closet yesterday, so last evening I "went at 'em" as the small boy of the neighborhood would put it. First I cut the feet from one pair of stockings and stitched in from the lower end about an inch or inch and a half, and wide enough to form fingers. Then I cut a hole for a thumb and had a pair of mitts and sleeve protectors in one. These I will use when planting seeds or slips, where one needs the fingers free. Another pair, I simply cut off the feet and will use the legs for sleeve protectors—not a stitch needed and several pairs of cuffs saved from smudges.

The legs of five or six stockings were cut open and then sewed up into a square and I had as good a dust cloth as I could wish for—soft and a good dust absorber. Two or three more I cut open and made a dust bag to slip over the broom. I made two pairs of mittens to use when sweeping and dusting from some old cotton socks. I cut off the feet, laid my hand in the leg and shaped a mitten, taking the ribbed part for the wrist. made the thumb from a piece cut from the top of the foot. A number of badly worn stockings I cut open and cut in four inch strips, cutting from each end until within about two inches of the middle. These I slipped into a mop stick and had a first class "dry mop" for dusting the bare floors.

If you have a seamstress coming to the house you will save time and money and temper if you will see that the machine is cleaned and oiled and in perfect repair. Have plenty of needles and thread and all the little things that will be wanted. Have some way of quickly heating an iron.

UNCLE ISAAC'S OPINION.

People have been recommended to follow the example of the ant and learn wisdom from her. Now I ain't knocking on the ant. As an insect the ant sizes up pretty well, but there is nothing in most of the work of the ant that indicates that she is overburdened with brains. The ant does more useless rippin' round than any insect I happen to know of. She will dash out and grab hold of something that she thinks she wants at the house and lug it off. If she comes to a stone on the road home does she do the sensible thing and go around it? No, she climbs over. She sweats and tugs and falls off a time or two and then spits on her hands and goes at it again and finally gets that thing home and then finds when she gets there that she had no use for it.



This Book Sent Free

Want a Telephone?

If you do you can get it. If you are anxious to get into closer touch with your friends, with the family doctor, with the store, with the post office, or with the cotton buyer, you can do it with a telephone at hand. If you want to make the farm a more livable place, if you want to protect your home, you can do it by installing a telephone.

If you will cut out this advertisement, write your name and address on the margin and mail it to-day to our nearest house, we will send you at once a copy of our Free Bulletin No. 71 on

"How to Build Rural Telephone Lines"

This Bulletin explains clearly how a rural telephone system is built and operated, and it also contains full information as to costs.

In a Farmer's Mutual Company a few day's labor and a cash investment of about $25. per subscriber, will purchase all material and build an absolutely standard system.

A Rural Telephone is an investment, not an expense. The telephone which enables you to sell ten bales of cotton at ½ cent per pound more than the traveling buyer offers you, has paid for its entire cost. If you have some hay down all ready to go in, it is worth something to have a telephone with which to call on Neighbor Smith "for a lift" before the storm breaks.

The Rural Telephone pays for itself each year and we have brought the initial cost within the reach of every farmer. Present prices are especially favorable and thousands of Farmers' Mutual Companies are now organizing so as to build their lines this Spring. **Write us to-day.**

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Southern Offices: Atlanta, Cincinnati, Dallas, Indianapolis, Kansas City, Portsmouth, Saint Louis, Savannah

The world's oldest and largest telephone manufacturer. There are over 4,000,000 Western Electric Telephones in use in the United States to-day.

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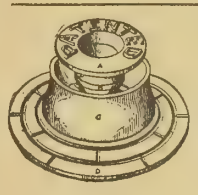

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When writing advertisers, mention Cultivator.

San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, March 10, 1909.

Butter.

Butter has surprised all and taken another advance of 2½ cents on extras during the week with firm market conditions now prevailing.

Produce Exchange wholesale quotations are as follows with actual selling price to the trade 2½c advance on Extras.

Creamery ex per roll	.75
Firsts	.70
Eastern Creamery Ex	.70
Cooking	.30
"Butterine"	.16@20

Cheese.

Southern California Anchor	.17
Northern fresh	.17
Anchor, Young America	.18
Longhorn	.22
Eastern singles	.17
Cheddars	.17
Swiss	.20
Imported Swiss	.30
Daisy	.17½@18
Limburger	.21
Oregon triplets	.18
Twin	.17

Eggs and Poultry.

Eggs seem to have reached bottom after their rapid decline and remain exactly as last week.

Eggs local candled	.22
Eggs case count buying price	.20

Dealers pay for live stock.

Hens per pound	.15@16
Young roosters per pound	.18@20
Fryers	.20@23
Broilers, per lb	.24@26
Roasters	.18@20
Old roosters	.7
Turkeys	.18@23
Geese	.13@15
Ducks	.15
Squabs	.1.25@1.75

Live Stock.

The following quotations are f. o. b., Los Angeles on all stock.

Hogs from 175 to 200 pounds	6½@6¾
Prime steers	.4¾@5
Heifers	.4@4½
Calves per pound	.5
Sheep ewes per head	.3.75@4.00
Lambs per head	.3.00@3.75
Wethers	.4.50@5.00

Potatoes.

Wholesale prices are:

Sweets per ctl	.1.75
New per lb	.5@7
Early Rose local	.1.50@2.75
Early Rose northern	.2.50@2.75
Burbanks local	.2.50
Lompocs	.2.50
Highland fancy	.2.00@2.25
Highland choice	.1.70
Salinas	.2.50
Idaho's	.1.75@2.00
Oregon Burbanks	.2.25
Nevada's and Utah's	.1.75@2.00
Colorado's	.1.75@2.00
Sweets choice	.1.00

Onions.

Wholesale quotations:

Australian Browns northern	.2.75
Australian Brown local	.2.50
Danvers	.2.75
Silverskins	.2.50
Oregons	.3.00
Nevada's	.3.00
Utah's	.2.50
Garlic	.12

Vegetables.

Artichokes per doz northern	.75@1.00
Artichokes locals	.50@60
Asparagus green	.12½@17½
Asparagus per lb white	.10@12
Beets per doz	.40@50
Bell peppers per lb	.30@40
Beans string	.15@25
Beans Limas per lb	.8@10
Brussels sprouts per lb	.10@12
Cabbages Red per lb	.3
Cabbage sack	.1.50@1.90
Celery per crate	.3.25@4.00
Chili per lb	.18@25
Chili dried	.9@10
Chicory per doz	.50
Cucumbers per box hot house	75@2.25
Cauliflower per crate	.3.00@3.50
Carrots per doz	.40
Egg plant per lb	.8
Green onions per doz bunches	.15@25
Horseradish per lb	.12
Lettuce per crate	.1.40@1.50
Lettuce choice	.50@75
Mushrooms per lb	.35
Peas sugar per lb	.12@15
Parsley doz	.20
Parsnips	.35@40
Rutabaga per doz	.40
Rhubarb	.75@1.00
Rhubarb Northern per box	.2.50@3.50
Radishes per doz	.15@20
Summer squash per box	.1.00@1.25
Spinach per doz	.20@25
Turnips doz bunches	.30@40
Tomatoes crate	.1.75@2.00

Citrus Fruits.

Navels fy	.2.00@2.50
Navels ch	.1.25@1.50
Tangerines halves	.1.60
Grapefruit seedless	.3.00
Grapefruit seedlings	.2.25
Lemons fy	.1.50@2.00
Lemons ch	.1.00@1.50
Limes half box	.1.50@2.00

Fresh Fruits.

Wholesale prices on the market are:

Baldwins 4 tier	.1.35
Bellflowers	.1.15@1.25
Newton Pippins	.1.25
Red Pearmains	.1.25@1.35
W W Pearmains	.1.50
Spitzenberg	.2.50
Jonathans	.1.75
Grapes Red Emperors	.1.50@1.75
Guavas per lb	.6@8
Cornichons	.1.25
Guavas	.6
Loquats per lb	.15@20
Malagas imported per keg	.14.00
Pears box	.1.75@2.00
Persimmons per box	.2.25
Pomegranates per box	.1.75
Raspberries	.40
Starks, Hood River	.1.75@2.00
Strawberries fy	.15
Strawberries ch	.5@10

Dried Fruits.

Wholesale prices are:

Apricots	.8@10
Evap. apples fy per lb	.7½@8
Figs loose white	.5
Figs blk	.5
Peaches in boxes	.7¼
Peaches sacks	.6@7
Pears	.9
Plums pitted	.8@9
Nectarines	.7½@9
Prunes 30's to 40's boxed	.8
Prunes 40's to 50's	.7½
Prunes 50's to 60's	.7

Beans Dried.

Wholesale prices are:

Limas per ctl	.4.50
Pink No. 1	.3.25
Lady Washington	.5.00
Small white	.5.50
Black eyes	.3.75@4.00
Garvanzas	.4.00
Lentils California	.7.00
Lentils German	.8.00
Bayou	.3.50

Nuts.

Almonds IXL per lb	.14@15
Ne Plus Uutra	.14
Pecans polished	.16@17
Peanuts Virginia	.6½@7
Peanuts California	.5½@6
Walnuts No 1	.11@12
Chestnuts	.8@8½

Honey.

Wholesale quotations:

Extracted water white	.8
Extracted Light Amber	.6½@7
Comb W W	.16
Comb white	.15
Beeswax	.30

Hay.

Prices paid to producers f. o. b. Los Angeles are as follows:

Barley No 1	.21.00@23.00
Barley No 2	.18.00@20.00
Alfalfa northern per ton	.14.00@15.00
Alfalfa local	.15.00@18.00
Tame Oat No 1	.22.00@24.00
Wheat No 1	.18.00@21.00
Wheat No 2	.18.00@20.00

Grains.

Wholesale selling price f. o. b., Los Angeles.

Wheat new per ctl	.2.00
Kaffir corn	.1.80
Corn Eastern sacked	.1.75
White oats	.1.90
Seed Rye	.1.80

Feed Stuff.

Wholesale selling price f. o. b., Los Angeles:

Cracked corn	.1.80
Shorts	.1.80
Bran	.1.65
Oil cake meal	.2.50
Feed meal	.1.85
Rolled barley	.1.55

THE HORSEMEN.

A veterinary surgeon pronounced a hunter to be afflicted with an incurable disease.

"What had I better do?" queried the owner to his groom.

"Well, sir," was the reply, "conscientiously speaking, I should part with him to another gentleman."—Tit-Bits.

PULPIT IMAGERY IN NOVA SCOTIA.

In a sermon recently preached by a Nova Scotia clergyman occurred the following irreverent but effective metaphor: "You can't fool God. He always has a card up his sleeve to play against you."—New York Sun.

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

San Francisco Markets

SAN FRANCISCO, March 9, 1909.

Butter.

Receipts of butter are large and market is rather weak and a drop of one cent is noted on extras.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras per lb	.34
California firsts	.33
California seconds	.32

Cheese.

California flats fy	.15
Firsts	.14
Cal Young American fy	.15
Firsts	.15
Seconds	.11½
Young American Oregon fy	.16½
Eastern N. Y. Cheddars fy	.17½
Oregon flat fy	.14½

Eggs and Poultry.

Eggs manifest a stronger tone than last week though at this writing are one-half cent higher the last they had increased and again declined during the week.

Official quotations of the S. F. Wholesale Dairy & Produce Ex. are:

Fresh ranch extras	.23
Eggs first per doz	.22½
Eggs second	.22
Eggs thirds	.21
Pullets selected	.19

Hens per doz	.5.00@7.00
Hens extra	.7.00@10.00
Young roosters	.8.00@9.00
Old roosters	.4.00@5.00
Fryers per doz	.6.50@7.50
Broilers per doz	.5.00@6.50
Geese per pair	.2.00@2.50
Goslings per pair	.1.75@2.00
Ducks young	.6.00@8.00
Live Turkeys	.17@19
Dressed Turkeys	.18@22
Pigeons young	.2.00@2.50

Live Stock.

San Francisco prices gross weight:

Steers No 1	.5¼@5½
Do second quality	.4¾@5
No 1 cow and heifers	.4@4½
Second quality	.3½
Hogs 100 to 140	.6½
Hogs 140 to 250	.6¾
Rough heavy	.4½@5
Calves per lb	.4@5
Lambs spring	.6½
Wethers No 1	.5¾@6
Ewes No 1	.5¼@5½

Potatoes.

Wholesale market quotations:

River white fy sacks	.1.25@1.50
Early Rose	.1.85@2.00
River Burbanks	.1.35@1.50
Salinas Burbanks	.1.85@2.00
Lompoc Burbank	.1.90@2.00
Sweets per crate	.1.50@1.75
Oregons	.1.75@1.90

Vegetables.

Wholesale quotations:

Asparagus per lb	.6@11
Bell peppers per lb	.25
Brussels sprouts per lb	.3@5
Celery per ½ crate	.1.25@1.50
Cucumbers per doz	.75@1.00
Chili peppers per lb	.15@17½
Egg plant per lb	.30
Green peas per lb	.8@12½
Mushrooms per lb	.12½@25
Marrowfat squash per ton	20.00@22.50
Squash cream per box	.50@65
Onions green per box	.65@85
Rhubarb per box for bay	.1.25@2.00
Rhubarb, Southern per box	.1.00@1.25
String beans	.10@12½
Tomatoes box Mexicans	.1.25@1.75
Wax Beans	.10@12½
Garlic new	.8@10

Onions.

Onions, Oregons	.1.75@2.00

Citrus Fruits.

Navels fy	.1.50@2.50
Tangerines per crate	.75@1.50
Mandarins	.75@1.00
Grapefruit seedless	.2.50@3.50
Grapefruit seedlings	.75@1.25
Lemons ch	.1.25
Lemons fy	.2.50.3.00
Limes	.7.50@8.00
Limes Cal sm box	.1.00@1.25

Fresh Fruits.

Bellflowers	.75@1.00
Bellflowers No 2	.50@75
Spitzenberg	.1.25@2.00
Newton Pippins	.1.25@1.40
Ben Davis	.1.25@1.50
Winter Nellis	.1.25@1.50
Other Kinds	.50@1.00

Dried Fruits.

Prunes 4-size basis	.2½@3
Santa Clara	.3¼@3¾
½c premium for larger sizes	
Apricots per lb; Choice 8½; fancy 7@10.	
Peaches—Choice	.4; fancy .6½
Apples evap	.6@7
Pears	.4@8
Figs	.2½@4
Nectarines	.5@6
Pitted Plums	.7@8

RAISINS—1908 crop, f. o. b.: Clusters and Layers, 20-lb bxs—Imperial Clusters, 6-crown, $2; Dehesa Clusters, 6-crown, $1.75; Fancy Clusters, 4-crown, $1.40; London Layers, 3--crown, $1.15; do, 2-crown, $1.05. Seeded, 25-lb bxs—Fancy bulk per lb, 5¼c; Choice bulk, 5c. Loose Muscatels, 50-lb bxs—Standard, 4-crown, 4c; do, 3-crown, 3¼c; do, 2-crown, 2¾c; Seedless, 3½c. Seedless Sultanas—Unbleached, 4¼c. Thompson Seedless—Unbleached, 4¾c. Dried Grapes, 2½c.

Nuts.

Walnuts S S No 1	.8@12½
Walnuts No 2	.6
No 1 Standard	.8½
No 2 Standard	.4½@5
Almonds Nonp	.11½
Almonds IXL	.10½@11
Ne Plus Ultra	.9½
Drakes	.8½@9
Chestnuts	.9½@14
Peanuts Cal	.5½@6

Beans Dried.

Limas	.3.65@3.80
Pink	.2.45@2.65
Small white	.5.10@5.30
Large white	.4.00@4.35
Black eyes	.2.80@3.00
Red Kidneys	.3.50@3.60
Garvanzas	.3.00@4.00
Bayo	.3.25@3.30
Horse beans	.2.00
Cranberry	.2.75@3.40

Hops.

Hops 1908 crop	.6@10

Honey.

White comb	.12@14
Light Amber	.8@11
Exracted W W	.7@8
Extracted light amber	.5½@6
Beeswax No 1 per lb	.28@30
Beeswax No 2 per lb	.23@25

Hay.

Receipts of hay for the past week have been considerably heavier than we have been receiving for some little time past, the total amounting to 3250 tons compared with 2300 last week. However, the demand for hay continues quite active and we can report no material decline in prices, although during the last few days there has been a trifle weaker tone to the market. From our knowledge of the situation we do not believe that receipts will continue as heavy but are very much inclined to believe that we will see a material falling off and a consequent firmer tone to the market.

Country business in hay continues very active and as the demand outside of San Francisco is principally for the better grades.

Alfalfa has been arriving rather sparingly but the demand by reason of the good weather and plentiful grass supply, has fallen off considerably and therefore we have to quote a trifle lower price on same.

Choice wheat hay	.23.00@25.00
Good wheat hay	.21.00@22.00
Wheat and oat	.21.00@23.00
Tame oat	.20.50@23.50
Wild oat	.20.00@22.00
Stock hay	.11.50@15.00
Alfalfa	.16.00@18.50
Straw per bale	.50@85

Grains.

Wheat No 1	.1.90@1.95
Barley	.1.45@1.47½
Corn large yellow	.1.57½@1.60
Oats white	.1.87½@1.92½
Oats gray	.1.87½
Rye new crop	.1.80@1.85
Corn Egyptain	.1.60@1.65
Alfalfa seed, Cal	.17@18
Alfalfa seed, Utah	.18@19
Mustard yellow	.6.00

Feed Stuff.

Bran per ton	.28.50@30.00
Feed cornmeal per ton	.37.50@38.50
Cracked corn per ton	.38.00@39.00
Rolled barley per ton	.28.50@30.00
Oil cake meal per ton	.38.50@40.00
Cocoanut cake per ton	.25.00@26.00
Middlings	.32.00@35.00
Shorts	.32.50@33.50

Citrus Market

LOS ANGELES, March 10, 1909.

The extremely heavy shipments following the storm of early February demoralized the market that the effect still remains. It has not resulted in a serious slump but about 15 to 20 cents has been knocked off the profit end of every box. An effort is being made to slow up shipments and in fact it is being done. There is yet a couple of months to dispose of navels and nearly one-half the crop is gone so that there need be no rush to dispose of such great quantities at once.

Lemons are stronger in market tone and it is hoped this tendency will continue for some weeks.

Shipments.

Shipments of citrus fruits to date

Cream Separators, all sizes, all prices. O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

since November 1 are: Oranges 9,499 cars; Lemons 1,647, or a total of 11,146. To same date last season 9,350 oranges, and 1,576 lemons or a total of 10,926.

BOSTON, March 8.—Thirty-one cars sold, forty-nine cars on track. Weather favorable. Market remains unchanged.

NAVELS—	Average
Orchard OR National O Co	2.95
Elephant Or OG Cash Assn	2.70
Hawarden Fy Hawarden C A	2.50
Golden Orchard Fy Or Ond Ft Co	2.45
Preferred Stock Fy Or Allen Break	2.45
Standard Sd National O Co	2.45
Solano Or Stewart Ft Co	2.40
Golden Flower XF Red G Assn	2.40
Carnation XC M & Greene Co	2.35
Sombrero Or Mutual O Dist	2.30
Triumph Or Cal Cit Union	2.30
Mocker Or Spence Ft Co	2.20
Flamingo Or Cal Cit Union	2.20
Triumph do	2.15
Golden Rod ch Highgrove OG Assn	2.10
Golden Pheasant Xc Ind Ft Co	2.10
Falls Or G A Smith	2.10
Conqueror Xc Ind Ft Co	2.05
Petunia Atland Ft Co	2.00
Puritan SB Ft Ex Rialto	2.30
Grayhound SA Ft Ex Claremont	1.75
Dan Patch AF F Ex Bloomington	2.20
Pony do	1.95
Goldleaf RH Ft Ex Redlands Jct	2.30
Silverleaf do	2.00
Anona do	1.70
Extra Choice St Ft Ex Rossmoyne	2.45
Laurel QC Ft Ex Corona	2.65
G Buckle RH FtF Ex E Highlands	2.80
Lochinvar do	2.60
Red Globe Riv Ft Ex Riv	2.40
Cal Orange do	2.20
Orchard Run SA Ft Ex Pomona	2.10
Pine Cone SB Ft Ex Highland	2.80
Arrowhead do	2.40
Rey St Ft Ex Fernando	2.55
Tunnel do	2.30
P Cone Imp SB Ft Ex Hihgland	2.65
LEMONS—	
Pet SA Ft Ex San Dimas	2.30
Coral QC Ft Ex Corona	2.85

CINCINNATI, March 8.—Weather cool. Market weak. One car navels, one car lemons and four cars Florida oranges sold. Florida Brights sold from $2.00 to $2.90. Russets, $2.25 to $2.90. Three cars lemons on track.

NAVELS—	Average.
Pico St Ft Ex Whittier	2.00
LEMONS—	
Arab SA Ft Ex San Dimas	2.50
Greyhound do	2.40
Duck do	2.15

PHILADELPHIA, March 8.—Twelve cars navels, two mixed cars and two car lemons sold. Market is unchanged. Weather clear and cold. Nineteen cars on track. Nineten cars Florida oranges sold from $1.30 to $3.80 per box. Choice sizes sold mostly about $2.85. Five thousand boxes of Sicily lemons are to be sold here next week.

NAVELS—	Average
Orchard Run SA Ft Ex Pomona	2.20
Highgrove Riv Ft Ex Highgrove	2.30
Fruita Or do	2.36
Carmencita St Ft Ex Fullerton	2.30
Mt Baldy Or Riv Ft Ex Riverside	2.38
Orchard Run SA Ft Ex Pomona	2.24
Golden Or AH Ft Ex Arlington	2.33
Fiesta Riv Ft Ex Riverside	2.42
Pond Lily	2.30
Native Sons Ch King F C Imperial	2.50
W Highland Or Cleghorn Bros	2.49
Independent Growers Ft Co	2.46
Stock Label Growers' Ft Co	2.48
Orchid Fy Atland Ft Co	2.27
Victory Or Cal Cit Union	2.15
Defender Xc Atland Ft oC	2.09
Buscada do	2.88
Palm Tree AH Ft Ex Arlington	1.20
TANGERINE HALVES—	
Squirrel AH Ft Ex Arlington	.92
Dancy	1.05
LEMONS—	
Defender Xc Atland Ft Co	1.53
Transcont SS Ft Ex El Modena	1.68
El Modena do	1.39

ST. LOUIS, March 8.—It is raining. Market is weak on account of the weather. Ten cars sold, sixteen cars navels and one car lemons on track.

NAVELS—	Average.
Tahoe Xf Red OG Assn	2.35
Premium Or Benchley Ft Co	2.30
Lochinvar RH Ft Ex E Highlands	2.45

For Mehring Foot-Power Milking Machines see O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles, Cal.

Belt do	2.30
Orchard Run SA Ft Ex Pomona	2.15
Pointer ACG FtF Ex Charter Oak	2.40
Braeside Riv Ft Ex Riverside	2.40
Gavilan Riv Ft Ex Riverside	2.40
Sunset SS Ft Ex Orange	2.00
Setter AH Ft Ex Prenda	2.30
Troubadour do	2.20
Volunteer SA Ex N Pomona	2.45
Greyhound do	2.25
BLOODS HALVES—	
Gavilan Riv Ft Ex Riverside	1.70
TANGERINE HALVES—	
Indian Hill SA Ft Ex N Pomona	1.75
Volunteer do	1.70
LEMONS—	
Belt RH Ft Ex E Highlands	2.45
Arab SA Ft Ex San Dimas	2.65
Greyhound SA Ft Ex San Dimas	2.50
Duck oo	2.40

PITTSBURG, March 8.—Fourteen cars sold. Twenty-one on track. Market is easier on navels, steady on lemons. One car Floridas sold, average $2.75. Weather favorable.

NAVELS—	
Orchard National O oC	2.85
Standard do	2.35
Golden Flower Red OG Assn	2.25
A-One E Peycke Co	2.15
Butterfly Covina Ft Ex	1.95
Pointer AGC Ft Ex Glendora	1.80
Castle Riv Ft Ex	2.10
Mt Baldy do	2.20
Violet DM Ft Ex Monrovia	2.15
Jasmine DM Ft Ex Monrovia	2.05
Sweetheart A Ft E Highgrove	1.95

A SPLENDID RECORD OF LOYAL SERVICE.

The group shown here is a most unusual one. In the center of the front row, easily distinguished by his flowing beard, sits Hon. J. M. Studebaker, President of the Studebaker Bros. Mfg. Co., and only surviving member of the famous five Studebaker brothers, and about him are grouped eighty-three employees who have been continuously in the Studebaker employ for twenty-five years or more.

Many of the men seated about Mr. Studebaker are foremen and superintendents who started in as apprentices and learned their trade from the Studebaker brothers, and they in turn, have imparted their knowledge to their shop mates and to their sons who are following in their father's footsteps. As Mr. Studebaker says, "These men are the educators in our plant, and while we have young men under their training coming along in every department, we still depend upon this advanced class to keep our product up to the highest possible standard."

Wagle do	2.25
Yankee Doodle do	2.05
Victor SA Ft Ex Claremont	2.00
Riverside Riv Ft Ex	2.10

CLEVELAND, March 8.—Weather cool. Market is steady. Seven cars sold. Eighteen on track. One car Floridas sold $1.75 to $2.75, mostly $2.55. Lower on Floridas.

NAVELS—	Average
Pointer ACG Ft Ex Glendora	2.15
Butterfly Covina Ft Ex	2.10
Fiesta Riv Ft Ex	2.35
Crocus SB tF Ex Highland	2.55
Canna do	2.40
Cosmos do	2.25
Pointer ACG Ft Ex Glendora	2.40
Lochinvar RH Ft Ex E Highland	2.50
Partridge Cal Citrus Union	1.75
Amethyst Cal Citrus Union	1.50
TANGERINE HALVES—	
Stag AXG Ft Ex Glendora	1.40
LEMONS—	
Belt RH Ft Ex E Highland	2.40

NEW YORK, March, 9.—Fifty-five carloads of oranges and three carloads of lemons sold. Market is lower on navels, unchanged on lemons. Weather clear and mild.

NAVELS—	Average.
Preferred Stock A Break	2.10
Cerrito L V W Brown	3.20
Swastika do	2.75
Elephant OG Cash Assn	2.85
Plain	2.30
Elephant OG Cash Assn	2.50
Elephant do	2.45
Plain	2.15
Blue Banner, Sutherland Ft Co	2.35
Native do	2.20
Majestic C S Spencer	2.20
Standard National O Co	1.70
Camellia Red M O Co	2.40
Golden Flower Red GO Assi	2.15
Bronco W American Ft Co	2.30
Herald do	2.25
Majestic C S Harper	2.20
Standard National O Co	1.70
Crayon Crest	2.35
Herald W American Ft Co	2.25
Seal do	2.15
Dos Palmos San Marino G P A	2.15
El Toreador do	2.05
Hill Crest	2.15
Premium Benchley Ft Co	2.15
Superior do	2.20
Blue Mtn P & McKevitt	2.10
Signal Stewart Ft Co	1.90
Titus Ranch San Marino G P A	2.35
Titus Ranch do	2.15
El Toreador do	2.00
Triumph Cal Cit Union	1.65
Triumph do	2.15
Alta Cresta AH Ft Ex	2.80
Robusta do	2.35
La Mesa Riv Ft Ex	2.50
Golden Rule do	2.60
LEMONS—	
Artillery Cal Cit Union	2.05
Loma Vista D J Carpenter	1.65
Homer QC Ft Ex	2.50
Camel do	2.05
Champion A C Debman	1.65
TANGERINES HALVES—	
Whittier A C Denman Sons	1.45
Mahala L V W Brown	2.80
Lion Head I L Lyon Sons	1.45
Orchard National O Co	1.60
Alta Cresta AH Ft Ex	2.80
Stag ACG FtF Ex	1.65
Southland Beauties QC Ft Ex	1.45
Bear OK FtF Ex	2.70
Liberty Escondido FGA	1.55
Victoria AH Ft Ex	1.55
Blue Globe Riv FtF Ex	1.35
Blue Seal ACG Ft Ex	1.50
Tiger SB Ft Ex	1.55
Vista Bonita AF Ex	1.25
BLOODS HALVES—	
Lion Head I L Lyon	1.65
Southland Beauties QC Ft Ex	1.65
Just Rite do	1.40
Dan Patch AF Ex	1.45
Gavilan Riv Ft Ex	1.25
NAVELS—	Average.
Chariot RH Ft Ex Red Jct	1.60
Anona do	1.20
Quail OK Ft Ex	2.00
Cosmos SB Ft Ex Yerkes Spur	1.95
Coral do	1.80
Violet DM Ft Ex Monrovia	2.00
Pet, S. A. Ft Ex San Dimas	2.15
Blue Globe Riv Ft Ex Riverside	2.15
Eagle AF Ex Highgrove	2.00
Yanke Doodle do	1.80
Pine Cone SB Ft Ex Highland	2.55
Planet SS Ft Ex Orange	2.25
Homer QC FtF Ex Corona	2.45
Family do	2.30
Golden Rule Riv FtF Ex Riverside	2.45
Elephant Or OG Cash Assn	2.90
Orchard Or National O Co	2.85
Colonel OG Cash Assn	2.55
Naralimo Or Sparr Ft Co	2.40
Standard National O Co	2.35
Golden Flower Red GO Assn	2.30
W Highland Cleghorn Bros	2.30
Old America	2.25
Lone Palm McGowan & Willard	2.20
Clover Redlands OG Assn	2.20
Victory California Citrus Union	2.20
Circus Sparr Ft Co	2.05
Golden Gate Redlands OG Assn	2.00
Clover do	2.00
Conqueror Independent Ft Co	2.00
Young America P & McKevitt	1.95
Beach McGowan & Willard	1.90
Falls G A Smith	1.75
Conqueror Independent Ft Co	1.75
A-One E Peycke Co	1.25
Deal do	1.25
LEMONS—	
Naralimo Sparr Ft Co	2.10
Blue Mountain P & McKevitt	1.65

CONSOLING.

"I suppose," said the minister to the widow, "that your friends have said many consoling things to you."

"Yes," she replied, "my friends have been a great help to me in my trial. They've all told me that I look just beautiful in black."—Detroit Free Press.

LEGAL NOTE.

A London city man recently wrote to a lawyer in another town asking for information touching the standing of a person there who had owed the Londoner a considerable sum of money for a long time. "What property has he that I could attach?" was one of the questions asked. The lawyer's reply was to the point. "The person to whom you refer," he wrote, "died a year ago. He has left nothing subject to attachment except a widow."—Punch.

IN THE NEW.

"Papa," inquired little May, after Sunday school, "was George Washington an Israelite?"

Before her father could answer this somewhat unexpected question, May's six-year-old brother broke in.

"Why, May, I'm 'shamed of your ign'ance! George Washington is in the New Testament, not the Old."—Woman's Home Companion.

OYSTER SHELL.

Croley's granulated hard eastern oyster shell made from clear fresh selected shells that have not been boiled or roasted, sweeten the crop and preserve health and should be kept before the fowls continually. **Oyster Shell** does not take the place of grit, but is necessary for the lime supply of egg shells and feathers and often prevents the laying of soft-shelled eggs. Croley's Hard Eastern Oyster Shell is ground and graded into four sizes. The Fine Granulated Size (about the size of wheat) is the popular size because it is ready for work the moment it enters into the hen's crop and is easily assimilated.

One pound of Croley's Hard Eastern Oyster Shell will supply lime for about seven dozen egg shells. The Oyster Shell flour is excellent for making up balanced rations. On the basis of 1 cent per pound as the value of grains and mill feeds, one pound of Hard Eastern Oyster Shell is worth about 3 cents per pound to the poultry feeder, because these shells directly supply the lime and allow the grain, etc., to be more thoroughly assimilated and converted into eggs and flesh.

HAY and GRAIN

J. S. Going & Co.

Commission Merchants

217 Lissner Building, Los Angeles, Cal.

Reference: National Bank of California
Correspondence Solicited

Crimson Winter RHUBARB

$1.50 a dozen, $6.00 per 100, $40.00 per 1000. Now is a good time to plant. Pedigreed Stock. Fruit Trees and Berry Plants of all kinds.

J. B. Wagner, Pasadena, Cal., 'Barb Specialist.

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The Smooth Running, Noiseless Pomona Deep Well Pump

It is thirty to fifty per cent more efficient than any centrifugal pump ever made. No high speed bearings to cut out. All breakages and rod troubles eliminated.

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Send for a catalog or what is better come to POMONA and let us show you some of these plants in operation.

POMONA MANUFACTURING CO.
POMONA, CALIFORNIA

THE Latest Deep Well Turbine Pump

Guaranteed to deliver from 100 gallons per minute upwards, depending on the diameter and capacity of well, from a depth of 50 to 300 feet below the surface. Can be either belt driven or direct connected to electric motor as occasion requires.

Write for Catalogue 46B.

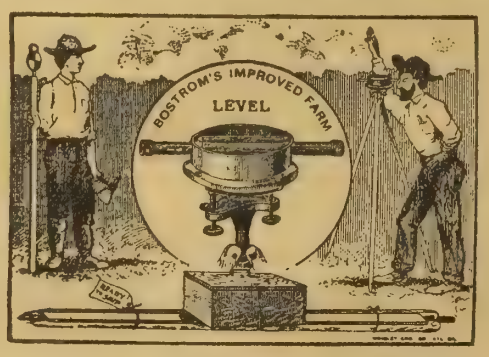
A deep well pump that has no valves or plungers to wear or get out of order, no gears, consequently no noise or breaking of teeth.

Compact, durable, always primed and ready to operate, constant flow, hence increased capacity of well.

This type of pump is fast taking the place of Vertical Steam, Deep well Plunger and Propeller Pumps.

Byron Jackson Iron Works

Main Office and Works:
Carlton Station
West Berkeley, Cal.



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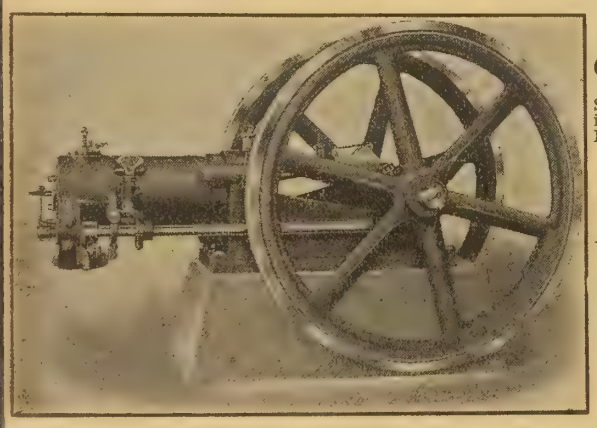

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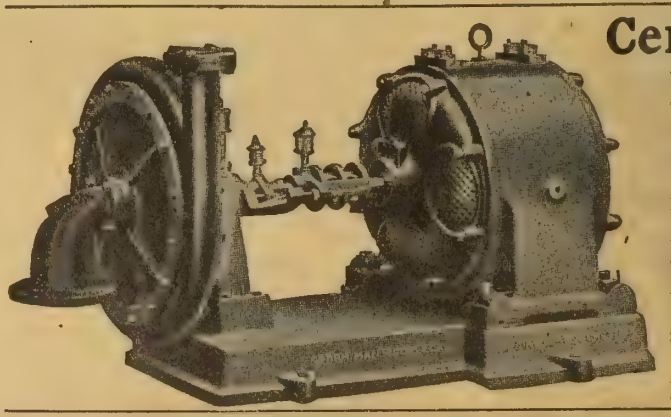

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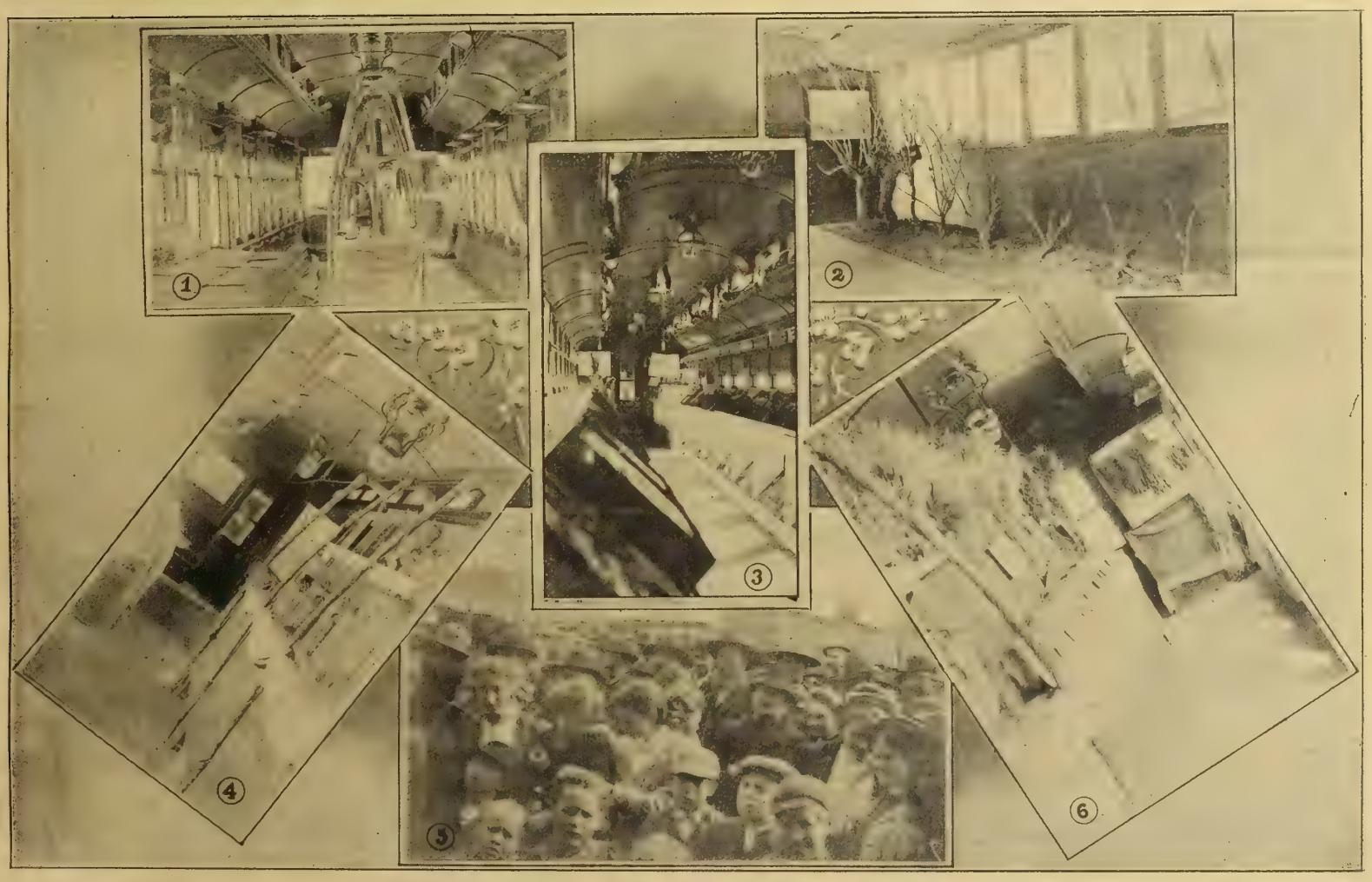
California Cultivator

Published Weekly — One Dollar a Year

Los Angeles — March 18, 1909 — San Francisco

Demonstration Train--Institute on Wheels

Observations by the Associate Editor After a Few Days With the Demonstration Train. Exhibition Cars Contain Much That Is Instructive to All.



1. Scene in University Car showing plants having various diseases. In center of car exhibits of veterinary division showing tuberculous tissues. 2. Vine pruning exhibit with photos in background showing various forms of pruning. 3. State Horticultural Commission showing exhibits arranged in two decks, one near the floor, the other higher, also hundreds of exhibits in jars above the windows. 4. Veterinary and sanitary milk exhibit. 5. Crowd listening to address of President Wheeler. This photo was taken at Selma in the San Joaquin valley. 6. Cereal exhibit. Note in background new types of alfalfa. The shortest one of these is the ordinary alfalfa as now generally grown. The longest one is the new Arabian alfalfa. These exhibits were grown on fields which were cut close on the first of November. On the first of January, with treatment the same in each case, results shown were secured.

"THIS is a glorified Institute."

We were all jarred out of our revery into which we had fallen as we sipped our "small black" after a delightful luncheon in the diner of the Southern Pacific Demonstration Train. We were passing through the upper end of the beautiful San Gabriel valley. Green fields and blossoming trees in the foreground, snow-capped Sierra Madres, with "Old Baldy" as captain of the host, in the background. Over all the shimmer and sunshine of a perfect, an absolutely perfect California day.

I say we were "jarred," yet the remark was not intended as a rudeness; quite the reverse, for Mrs. Sherman, who made it, knows no rudeness. But because of her enthusiasm over good deeds done by the Demonstration Train force in "Blessing with light," could not repress "This is a glorified Institute."

The Farmers Institute is of conparatively recent birth. It is usually under the management of the Director of the Experiment Stations of each state. In this state Prof. E. J. Wickson is the director. California has two circuits or divisions in the work, Northern and Central California, in charge of Prof. W. T. Clarke, superintendent

(Continued on page 314.)

HEELS UP-HEAD DOWN

29 Yrs

There are some mighty funny things about common "bucket bowl" cream separators. One is that the bowls used in them actually run better when turned heavy end **down**-heels up, head down, as you might say.

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You see, a separator bowl set heavy end **up** is always top heavy, always leans sidewise, even though the eye can't detect it, and consequently always trembles in its bearings. These tremblings gradually increase until they wear the bearings, shake them loose, bend the spindle and create so much friction that it acts like a brake and prevents getting up speed. That was the trouble with this disc filled "bucket bowl" we are talking about.

When we found this "bucket bowl" would **not** run in its **own** machine, we took it out, cut a thread on the bottom of the spindle, and hung it, heavy end **down** in a **Sharples Tubular** Cream Separator, just as we would a bowl of our own. You should have seen it run then. **No trouble at all** to run it 8,000 revolutions per minute. We easily ran it 12,000.

Could you ask any better proof that common "bucket bowl" separators, with bowls set heavy end **up** and fed through the **top** are built all wrong? Or better proof that the **suspended** bowl and bottom feed used **only in Sharples Machine** is the right way to build a cream separator?

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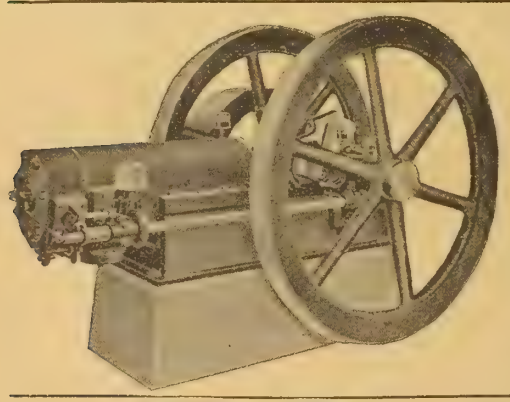

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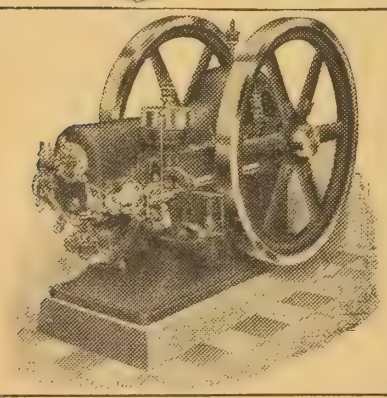

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California Cultivator

Vol. XXXII—No. 11 Los Angeles, California, Thursday, March 18, 1909 Subscription $1 a Year

Methods of Plowing the Orchard

A Series of Answers to Questions on Orchard Plowing, Cover Crops and Fertilizing, Written by Orchardists From Various Parts of the State.

THERE are but few orchardists who do not believe in plowing. There are less than there were a few years ago. As to deep and shallow plowing there is less unanimity of expression. One of the Cultivator's most valued writers, Mr. J. W. Mills, believes in shallow culture. He has often given reasons for the faith that is in him in this paper. In the main his position is that the sun's warmth and the air acting on the upper portion of soil make it more available and that if permitted the roots will fill the ground near the surface and appropriate the needed elements better than if forced by deep culture into lower colder soils.

We believe there are more who believe that a tree of more regular growth is secured and one of stronger root system encouraged by the deep culture plan.

However, the purpose of this article is not to express opinion so much as to give place for responses by representative orchardists as to methods which they follow. To secure this expression a letter was sent to each with the following questions:

The Questions.

The Cultivator repeatedly has the question presented by its subscribers, "Which is better, deep or shallow plowing in orchards?" Opinions seem to differ most decidedly, so we are going to take the liberty of asking a number of representative orchardists for their opinion in the matter. If you can control your time so as to give a few moments to it will you give your opinion as to the following questions:

(1) Do you grow green manure crops?

(2) Do you disk or plow them in?

(3) If you plow, how do you force all of the green stuff under?

(4) Do you plow only once during the season, or do you cross plow?

(5) How deep do you plow?

(6) Do you consider deep plowing as injurious in any way to roots of trees?

(7) Do you plow deeper with deciduous trees than in the orange orchards?

(8) Do you follow immediately so as to pack the soil, or do you allow it to lie up loose for a time so as to permit air to enter?

(9) Do you plow so as to leave dead-furrow or ridge or do you have a plan by which that is avoided?

(10) Do you plan to reach under the branches and close to the trunk or leave that for hand work?

(11) Do you ever subsoil? If so, at what time of year?

(12) What are the advantages of plowing?

We will not repeat the questions every time, but will give number to answer when it needs the question to understand the answer.

The first communication is by

* * * *

Mr. C. E. Rumsey of Riverside.

1. I grow green crops—vetch.
2. I plow.
3. If any trouble, hang a chain on.
4. We plow once and later disk across.
5. We try for eight or nine inches.
6. I do not. I have subsoiled 17 inches deep, ten feet from tree, and by mistake they ran it on other side (one row) six feet from tree, 17 inches deep. I was half sick, expecting trees to go back; all my old trees are lettered and numbered so there could be no mistake. To my surprise, we could never tell in leaf, blossom or fruit that it had been done. Since then I have had no fear. It was done in February, March or April; I can't tell which.
7. Have no deciduous trees.
8. We harrow it once; soil should be packed to rot the green crop.
9. We use disk plows; they slice a root if they strike one and do not pull it loose as mould board plow does. We throw all one way between each row; it does not make much dead furrow and we run right along that with disk harrow, which goes close to the trees. We skip a row in turning sometimes if it makes better work—i. e., plow alternate rows.
10. Answered above; the dirt is thrown over close to one row and we disk harrow on the other.
11. No, not lately.
12. Some orchards are never plowed and seem to do well. On my land when not plowed the roots got so near the surface we could not irrigate well and were forced to plow out roots by the wagon-load. No bad results followed. Since then decided we did not want any roots above eight inches.

I believe our orchards need cover crops, and that forces plowing. I only tell you my practice. I put on just as much barn yard manure in August as before, seven or eight feet to old trees, then sow vetch in September, plow under in February and add 10 to 15 pounds balanced commercial fertilizer for old trees. Even with the cover crop I do not find I fertilize too much; would do more rather than less. For two years crop on old trees has been light (my first experience). It is either the too cold springs, or I have not fertilized enough. I have proved that fertilizing at these times affects the next crop and that is all I care for. Other times may do as well, I only give my experience.—C. E. Rumsey.

* * * *

Mr. E. D. Neff, Pasadena.

Replying to your inquiry for my experience in sub-soiling, I beg to state that my conclusions are as follows, after ten years' practice:

Sub-soiling, when done with a sub-soiler having a wedge-shaped horizontal foot, is very beneficial in any soil, but particularly so where the loam is underlaid by clay or hard-pan, as is the case in most of our mesa land. The wedge-shaped foot in hard-pan lifts and cracks the clay for ten to twenty inches on each side of it. It is therefore unnecessary to make the trips nearer than three or four feet. The greatest benefit derived from sub-soiling, aside from the aeration of the soil, is in the storage of water. An irrigating stream that on regularly cultivated soil would take twenty-four hours to run 600 feet, would require four or five times as long after the ground had been sub-soiled, owing to the immense amount of water absorbed. The value of this in preparing for a dry-season is inestimable.

The depth to which a sub-soiler should be run must be governed by the character of the soil. I think that tree roots within six or seven inches of the surface are of no particular value, owing to their tendency to dry out. In a well established grove or orchard, sub-soiling must be done with great caution, the owner using his own judgment about the number of roots which it is safe to cut. The safest plan is to run the sub-soiler down about four row of trees at varying depths and distances from them and note carefully the results.

In setting out young trees, two or three trips of a sub-soiler in the line of proposed planting would insure a splendid start for the trees.—E. D. Neff.

* * * *

Mr. S. J. Beals, Orange.

I have looked upon myself, and still do, as a learner on this subject and kindred subjects, rather than as a teacher; still, as you have asked for my opinion in the matter. I will give it for what it may be worth and rather as suggesting topics for discussion and investigation, than as an attempt to state final conclusions, though it may take the form of conclusions, as far as my present knowledge on the subject extends.

First, as to green manure crop: In my opinion the value of such a crop can hardly be doubted. It grows almost entirely from the air and water, taking almost no soil substance, or at least but little, and what it does take, it returns to the soil again when it decays. The air supply is unlimited, and the water of the season of the year when the crop is growing, is almost always at hand in abundance, usually from the rainfall. The cover crop, especially if it is composed of one of the legumes, or nitrogenous producing plants, is valuable for two reasons: first, because when it rots in the soil it forms humus, or vegetable mould; and second, because it has the capacity of taking free nitrogen from the air and fixing it in the root nodules, in a form available as plant food. The great value of such a crop would seem to be fully established, as far as annual crops are concerned, from long ages of experience, and if this is true in regard to crops of grain, it would seem that it must be true that such crops tend to improve soil conditions generally, and therefore must be of benefit to citrus and other trees. It is certainly the cheapest form of fertilization and is within the reach of all.

Second, as to plowing under: Assuming, then, that during the fall and winter months, a heavy crop of vetch, fenugreek, burr clover, or similar green manure crop, has been grown, how shall the greatest benefit from such crop be secured.

If it is allowed to die down and decay on the top of the ground, a part of this benefit would no doubt be obtained, but hardly the full benefit. The roots, with the nitrogenous nodules, would decay in the soil, and the decay of the plants above the ground would produce a certain amount of humus, but very much less than would be the case if the plant is turned under the soil and allowed to rot with the air excluded or partially excluded

It is necessary, moreover, to get the rank growth out of the way, in order to prepare the soil by cultivation for the irrigation that will soon be necessary. I would advocate then plowing the crop under, at least in the spaces that will be used for irrigation, say in the space running east and west. A disk plow will probably turn the crop under better than it can be done with the ordinary plow, but either can be used, in most cases.

As to sub-soiling: I am disposed to think that this can perhaps be done with advantage if confined to the center of the spaces between the trees only. I do not believe that it will do to cut too many of the roots of the trees, as will be the case if sub-soiling is done at all close to them.

(Continued on Page 308.)

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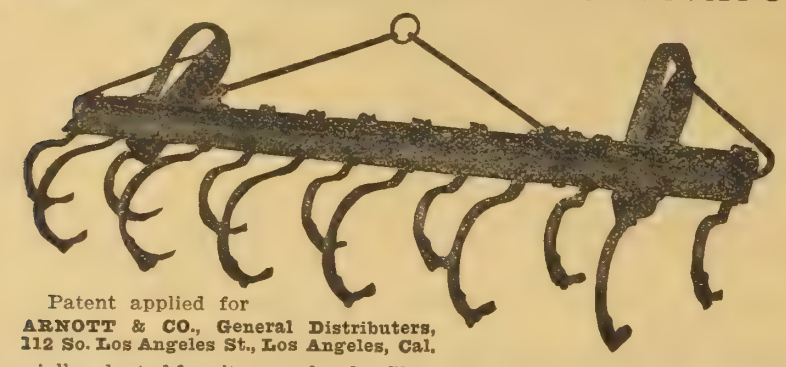

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PLOWING THE ORCHARD.

(Continued from Page 307.)

This objection can also be urged against deep plowing.

As to plowing on both sides of the trees, that is, in the spaces say north and south, as well as east and west, I am in doubt, the question being whether it is not better to leave this space for the roots of the trees to have full opportunity to develop near the surface without this annual tearing up.

I doubt if irrigation water goes very deep, and if this is the case, the roots must seek the water near the surface of the ground, and if we refuse the tree the opportunity it seeks of coming near the surface to get this water, we may be doing it an injury rather than a benefit. I know it is usual, perhaps almost universal, to plow, or at least cultivate through the summer, on both sides of the tree, but I am disposed to think that the question is an open one, if the spaces are covered with a heavy growth of cover crop, that will, in great measure, protect the soil from the sun for a great part or all of the dry season.

The above only attempts to discuss some of the subjects mentioned in your letter of the 24th ult., but the other questions will no doubt be fully covered by others.—S. J. Beals.

* * *

Mr. Frank L. Palmer, North Pomona.

I have received your list of questions relative to orchard plowing, and will answer them somewhat categorically, but cannot at this time undertake to enter into a discussion of the subject:

1:—Yes.

2:—I plow them under.

3:—We find that a disk plow handles a vetch crop very nicely.

4:—Where we have grown a cover crop we either cross plow or cross the orchard with a disk harrow, depending on existing conditions.

5:—About six inches.

6:—Yes, when deep enough to destroy the roots.

8:—After turning under a green crop we harrow the ground lightly, desiring to encourage a quick decay of the green stuff turned under.

9:—We follow what some people call "to and from" plowing. By beginning next the tree row and plowing toward the trees, and returning in the next middle throwing the earth toward the same row of trees, it leaves the first middle with the earth thrown in one direction and the next middle with the earth thrown in the opposite direction. The surface as a whole is left quite smooth, particularly if the plowing is shallow next the trees.

10:—Our trees grow low to the ground, and it is impracticable to do any plowing "close to the trunk."

11:—I do not practice sub-soiling, but have done it at times when necessary to break up artificial hard-pan.

12:—If this is an abstract question, it might be said that the advantages are many. Plowing improves the physical condition of the soil, permits an aeration of the soil, promotes nitrification in the soil; is an efficient means of pulverizing the soil when needed; is a means of turning under weeds or cover crops, as the case may be, etc., etc. I infer, however, that the real object of the question is to bring out discussion from those who do not advocate orchard plowing; and I imagine that on light soils, well drained, some orchardists consider plowing superfluous.—Frank S. Palmer.

* * *

Mr. C. H. Rodgers, Watsonville.

1:—Yes.

2:—Plow.

3:—Rolling coulter and chain.

4:—Once.

5:—Six to eight inches.

6:—If deep plowing has been practiced since the trees were planted, no. If shallow plowing has been the rule, then deep plowing will prove injurious temporarily.

7:—Do not raise oranges commercially.

8:—All depends upon season and nature of soil. If late in season or if soil is tough then soil should be smoothed down, but never packed.

9:—By plowing two rows of trees in one "land," there will be no ridges or dead-furrows between rows.

10:—I train my trees high enough so that all the land may be turned with the plow.

11:—(a) I never sub-soil old orchards, but sometimes sub-soil young orchards. (b) In winter.

12:—Turning under and covering vegetation, loosening the soil for the conservation of moisture and to give easy access to air.

It must be understood that soils in different localities and the various soils in the same locality often require different treatment. While in some sections of the state, orchard cultivation may be successfully carried on with cultivator and disk, in Pajaro valley the plow is an absolute necessity.—C. H. Rodgers.

* * *

Mr. B. E. Hutchinson, Fowler.

1:—I do not grow green manure crops but use all the fresh stable manure I can get.

2:—I never disk; I always plow; my land is sandy.

3:—I have no trouble in covering all growth with the plows and I cultivate and harrow after each plowing.

4:—I always plow from three to five times per season.

5:—I plow as deep as a good team can do it, from eight to ten inches.

6:—If roots go downward as they should, deep plowing will do no harm.

7:—I plow all trees alike.

8:—I cross cultivate immediately after plowing and then harrow thoroughly so as to hold all moisture possible.

9:—I plow so as to keep the land as level as possible; don't want any ridges.

10:—I plan to plow as close to trees as possible, but always hoe or shovel thoroughly wherever the plow does not cover all the surface. Never leave any weeds.

11:—I never sub-soil, except when preparing to plant trees; in this way the roots will naturally grow downward if you irrigate heavily.

12:—The advantage of plowing is principally for holding the moisture, covering the weeds or cover crops, etc. The cover crop or plenty of fresh manure is very necessary, as the more humus you can get into the soil the better. Don't ever try to cheat or fool your land by neglecting it, for you are fooling yourself instead of the land.—B. E. Hutchinson.

* * *

Mr. Horace G. Keesling, San Jose.

1:—In a way I grow green manure

or cover crops in my orchards by encouraging such volunteer growth as burr clover and alfillarie to grow as large and thick as possible. I believe that it will pay fruit growers to sow for green manure crops if the spontaneous growth is not sufficiently heavy.

2:—I plow.

3:—By using a rolling coulter and a chain any thickness or height of green crops may be turned under in good shape.

4:—I plow only once.

5:—About five inches.

6:—No.

7:—Have had no experience with orange trees in a large way.

8:—The treatment of the soil after plowing is governed almost entirely by the condition of the soil and the weather. If the soil is well filled with moisture and more rain is coming, it is best to leave the soil for a time. I do not like the expression "pack the soil." It is not good for any soil to ever be "packed" and heavy soils are greatly injured when worked so wet as to become packed. We plow our orchards to loosen the soil, turn under and save the green crops and finally work it down so that it is in a condition to admit some air, but not so much as to aid in evaporating the moisture that is needed for the trees' growth. As different soils require different treatment, no set rules may be made to govern all sections. The proper treatment of the soil in an orchard must be left to the intelligence and experience of its owner.

9:—I leave a dead-furrow in the tree rows one year and in the center of the space the next year. However, these dead-furrows are cut up by the disks before we are through cultivating for the summer. I prefer the solid bladed disks. The plow, disk, harrow and clod crusher and leveler constitute all our tools for working the soil.

10:—Yes. The very little space not turned by the plow is broken up when loking for borers.

11:—No.

12:—I know of no way of beginning the annual battle with the soil in our orchards better than by properly and neatly turning it bottom side up. The green crops are then out of sight and should be kept so. I have experimented largely with disks but have no desire to use them again in lieu of the plow.—Horace G. Keesling.

• • •

Mrs. M. E. Sherman, Fresno.

1:—Yes. The best practice that we know of in securing humus in the soil is by growing green crops. We grow more of these in the summer in the orchard each year.

2:—The use of the disks with us is to chop up a crop that is too tall to turn under readily if left as it is. Take one of these very heavy crops while green and run the disks sometimes both ways across it before turning it under with the plow.

3:—Readily, if disked first and the crop is turned under while in bloom. The only times we have failed have been by letting the crop mature until it seeded and not disking first to make the pieces small.

4:—When turning under a cover crop the second plowing should be held off three weeks to let the green crop rot. We plow twice always, sometimes four times; the season has more to do with it than actual rules. Twice—that is, plow and cross-plow.

5:—Six to eight inches usually at six feet from the trees and three inches closer to them.

6:—Not if it has always been done. The idea is to force the roots down where they belong from the beginning. Trees that have many surface roots suffer from drought and are not as healthy as those that have the roots better covered. If I had a shallow-rooted orchard or vineyard I should at once begin to deepen the plowing, taking it at least two inches deep the first year and doing this until there was a clear ten inches of mulch soil over the roots.

7:—Walnuts I never have handled. Peaches, plums, olives and oranges are all plowed alike with us. Our experience in oranges is very limited, however.

8:—Harrow the land at once; the harrows are never half a day behind the plow; this conserves the moisture with us better than to let the soil remain cupped and with air space under it.

9:—The use of the revolving harrow throws enough dirt to the dead-

(Continued on Page 324.)

DEAD CITRUS WOOD

Is more or less prevalent in every orange and lemon grove, i. e., trees that are unprofitable. How many such have you in your orchard? Would it not pay you to put paying trees in their stead?

Your Home Grounds

Should contain at least a few trees of the better varieties of oranges and lemons. For this purpose we have some exceptionally fine trees to offer, being grown as specimens. Possibly you would like to plant a few citrus trees about your home this season. If so, will you do us the favor to correspond with us about it?

Citrus Fruits

Historically, Horticulturally, Commercially.

Our new booklet gives more valuable information about varieties, methods of planting, cultivating, pruning, picking, packing and shipping than anything of its kind ever issued. Sent anywhere for the small sum of 25 cents. Correspondence a pleasure.

The San Dimas Citrus Nurseries

R. M. Teague, Proprietor
San Dimas, California

Orange Trees For Sale

Dormant buds, Navel and Valencia.

J. S. Killian, El Monte, Cal.
Phones: Sunset, 8x4. Home, Red 31, or,
L. C. Rice, Tropico, Cal.
Phone Sunset Glendale, 263

The 31 Year Old **SUCCESS SPREADER** Roller Bearing

Free From Cog Gears—Direct Chain Drive—Light Draft—Choice of Everybody Who Really Knows Manure Spreaders.

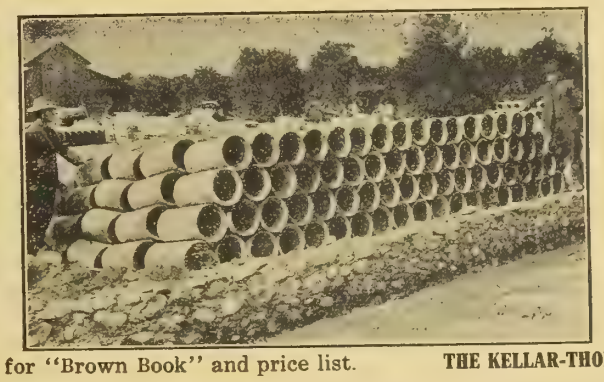
Why experiment? The Success is in use at nearly all Agricultural Colleges and U. S. Experimental Farms. It makes you sure of right work and right working. Parts simple—everything direct. Free from breakage—long lived. A generation of experience in it—it has been the leader from the first. Distinguished features made exclusive through patents.

Equipped With Either Steel or Wooden Wheels

Write For FREE Catalog

These Roller Bearings are as Good As a Horse

KEMP & BURPEE MANUFACTURING CO., SYRACUSE, N. Y.



From photograph showing amount of

Ten-Inch Pipe

made by four men from 10 bbls. of cement in 9 hours — 280 two-foot joints, or 560 feet. This pipe was made with the

"K T" Moulds

An equal amount can not be made with any other tools in the same period of time. Write for "Brown Book" and price list.

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One of the Finest Stocks of HARDY PALMS

in California is Now Offered for the First Time at the Lowest Possible Prices

You had best clip and preserve this as it may not appear again. This stock is located at 578 Orange Ave, Long Beach, Cal. and is easily reached by taking the "Redondo Ave." car at the foot of Pine Ave., Long Beach; alight at Descanso Ave. and walk three blocks north. Address

F. C. YEOMANS, 578 Orange Ave., Long Beach, Cal.

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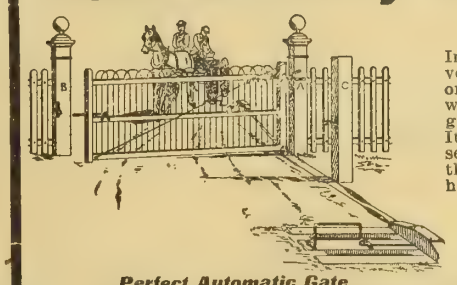

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In general use for motor as well as horse drawn vehicles. Opened or closed without assistance or stopping. The gate can be placed at any driveway entrance. The machinery is all above ground, and so simple it never gets out of order. It will last a lifetime, and usually pays for itself, in time saved, within a year. It adds to the beauty, value, convenience and safety of any home. Address

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Petaluma, California

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STREET AND ORNAMENTAL TREES

MONTEREY CYPRESS and GUAVAS.

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Anaheim, Orange Caunty, California

The oldest nurseries in Southern California, established in 1868 by present owner. Nurseries located 200 yards west of West Anaheim station (S. P. R. R.) Sunset Phone Main 413.

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Eureka Lemons, Pomelos. Santa Barbara Soft Shell Walnuts, Phoenix Canariensis and Washingtonia Robusta Palms, Camphor Trees, Acacias, Roses, etc.

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Tom Lewis' Fertilizers

Unequaled for Field, Garden, Orchard, Vineyard, and All Kinds of Vegetation. For catalog and prices write

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A Sticky Preparation Applied Directly to the Bark of the Trees

Will not injure trees. A band 5 inches wide and 1-16-inch thick cannot be crossed by any climbing insect pest. Remains sticky five to ten times as long as any other known substance. You can test it at slight expense, as no apparatus is required. Used by the carload in New England against the Gypsy and Brown-Tail moths. In California it preserves prune orchards from the Canker Worm. Wherever the Gypsy or Brown-tail Moths, Tussock Moths, Fall or Spring Canker Worm or Web Worm appear TREE TANGLEFOOT is of great value, and should be used when the caterpillars begin to crawl w hilh ey are very young.

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Manufacturers of Tanglefoot Fly Paper Grand Rapids, Michigan

Free *We will send you without expense the following* **Booklets**

How
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Peaches 4 to 6 feet, $15.00 per 100; 3 to 4 feet, $13.00 per 100.

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All the Varieties No. 1 Trees

San Fernando Nursery Co.

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20,000 Asparagus Con. Colossal. 10,000 Mammoth Blackberries

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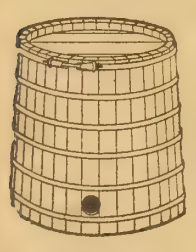

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Water Tanks, Wine Tanks made from carefully selected stock by careful and experienced workmen. "Tanks that are well made last a long time." It will pay you to get my prices before buying.

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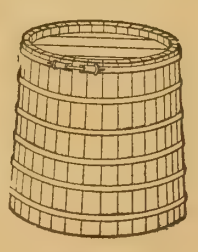

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We grow a large stock of all the leading varieties of Trees, Berry Plants, Walnuts, Eucalyptus, etc, at lowest prices.

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GRAFTED WALNUT TREES

Different varieties on black and soft shell roots, 25c and up.

Orange and **Lemon Trees, 50c** and up. Special Prices on Large Orders. **Deciduous, Eucalyptus** and **Ornamental, Berry Bushes, Grapes, Roses,** Etc., Etc.

Magnolia Nursery

A. R. Rideout, Proprietor Whittier, California

Deciduous Fruit Culture

By J. W. Mills

WALNUT GROWERS ORGANIZE.

THE walnut growers of Southern California have been much disappointed at the returns from this past year's output of approximately 800 cars of walnuts. Notwithstanding an organization which has endeavored to maintain a living price, the market this season was knocked all to pieces, some growers receiving very indifferent returns. The organization has been a very loose one, there being 17 individual associations in the southern part of the state. These associations dealing almost entirely independent of each other, and yet trying to agree on a price which shall generally prevail. Year before last with a smaller output, fair results were obtained. The results of this past year were such however, that the better informed saw that it was necessary to form an association more along the lines of the Citrus Fruit Growers Exchange.

The leading growers met in Los Angeles last week, and decided definitely on an incorporation under the new law, passed by the present State Legislature.

It is probable that the marketing during the coming season will be through the hands of brokers as heretofore, but instead of each separate association marketing its fruit, its duties will be taken up with the bleaching, sacking and shipping, while a central organization or its selling agent will have entire charge of the business end.

Of the 17 associations, 12 have already determined to join the new organization. There will be 34 directors elected by the various associations.

It it now thought that of the 850 carloads which Southern California will produce during the coming year, 700 still will be in this organization.

ADVERTISE THE RAISINS.

The raisin men are awakening to the worth of advertising. Another year will see better conception all over the East of the worth of the raisin as food. The Fresno Republican recently offered prizes for best article on raisins, and from the first-prize article we clip the following:

"In times long past no feast upon the tables of the rich and the great of earth was complete without the raisins of Spain, and it was alone in Spain that the raisin became an article of general consumption and entered largely into the diet of the people. In other countries raisins were a luxury of the rich; in Spain, they were upon the tables of the people, as the potato in Ireland and rice in the Orient. With black bread and herbs they were the food of the peasant, maid and matron, and scarcely less were they esteemed by the princess who dined in royal state."

To the people of our up-to-date age and country the name of health food signifies a preparation of pre-digested cereals or specially prepared food for invalids. The people of Spain for the passing centuries have had in raisins a greater health food than the ingenuity of man has ever compounded.

Raisins not only possess the food qualities that nourish the body and sustain life, but they are perfect eliminants of the harmful acids that are left in the human system through the use of foods that clog and impede the organs of digestion and assimilation. For this reason the free use of raisins purifies and enriches the blood and creates brawn and beauty.

At the present time this truth about raisins is known to comparatively few. In the United States, with the exception of some of the enlightened people of California, the raisin is still a luxury used frequently with nuts and black coffee after dinner or in the plum pudding at rare intervals. As a food, used daily and plentifully in the various ways in which they are a delight to the palate and a stimulant to the digestive system, the value of raisins is still practically unknown.

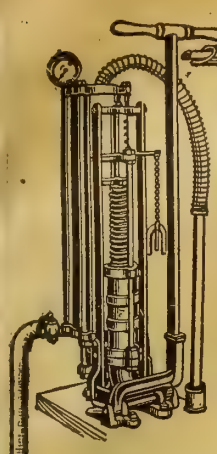
It is putting it none too strongly to say that this ignorance is a widespread misfortune. When Spain was the only producer of raisins it was excusable ignorance, for the supply was limited and the means of distribution inadequate. But now, when the interior valleys of California supply raisins of surpassing quality and in prodigal abundance for all the Western world, they should be found daily upon every table, in the form and perfection of flavor in which they come from the vineyard and in the varied forms in which they may be served, cooked and uncooked, to add variety and pleasure to the menu and health to the consumer.

The raisins of California are produced under conditions and amid environment that appeals alike to the imagination and the practical approval of the discerning. Here are beauty and utility united in perfection. The lofty Sierras, eternally snow-crowned and towering above the slumbering valley until their white pinnacles are lost amid the blue vaults of space, present to man at once a picture of incomparable grandeur and a beneficent bounty of Nature that has but few counterparts in the world. From the snow fields and glacial ice deposits of these frigid heights come the exhaustless streams of pure water that make green and fruitful the semi-tropic plains below.

Amid such scenes of entrancing beauty, in an atmosphere purified by countless days of sunshine and fragrant with ever-blooming flowers are California raisins produced!

Is it any cause for wonder that the blessed union of such fertile land with waters so bountiful and pure should produce a marvelous vintage, or that into the perfect fruit there should be distilled those elements from Nature's laboratory that sustain, prolong and beautify human life?

The well-grown and well-cured California raisin is the most delicious and the most healthful fruit bestowed upon mankind. It is only necessary that its true value as a food become widely known. Sugar in moderate quantities is required by the human system. This is especially true of growing children. The sugar of the grape, matured and perfected in the raisin is, by scientific analysis and experience, superior to all other. It is far more healthful and nourishing than any kind of confectionery. The housewife who supplies the children liberally with seeded or seedless raisins and all the family with raisins in the various forms in which they are so appetizing, will be amply [illegible] her wisdom by the pl[illegible] health of those who h[illegible] under her care.



Saves One-Third the Labor

Wouldn't you like to cut your labor expense an even third? You can do it on your spraying —and this advertisement tells you how. What's more, the work will be done more quickly and better. Use

Bean Magic Spray Pumps

The Bean patent spring (shown in the cut), divides the work; the operator does half at each stroke of the handle, and works against but half the pressure indicated on the gauge. Bean Magics are built in two sizes; both have non-clogging ball valves, porcelained cylinders, and other exclusive Bean features. They're the easiest running, least troublesome pumps on the market.

Our illustrated catalog No. 21 describes ten sizes of hand pumps, and contains much valuable spray information and formulas. Catalog No. 22 describes Power Sprayers. Both books sent free. Write for our special offer; mention number of acres and kind of fruit.

BEAN SPRAY PUMP CO.
212 W. Julian Street
San Jose, California

Vigorite Brand Hydrated Lime

Our **Hydrated Lime Department** is constantly gathering practical and scientific data on use of **Hydrated Lime** as soil **Fertilizer, Dust spray, Etc.** which is at your disposal. References furnished showing great **Efficiency** and **Economy** in its uses. Correspondence solicited. Write for sample and prices to

The Holmes Lime Co.
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Mutual Savings Bank Building, San Francisco

Nursery Stock

Colorado Grown Trees

Because your order gets our personal attention, whether evergreen, or forest, ornamental or fruit tree; whether small fruit, shrub or rose bush, we guarantee it to be grown in Colorado; healthful, well-rooted, true to name. We give premiums to club-makers. We pay freight on $10 orders. Agents wanted. Send for free catalog today to

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Walnut Trees

Grafted or grown from carefully selected seed. Postal gets prices.

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Gypsum will make available the plant food in your soil and bring good returns through small investment.

Wonderful Soil Corrector

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Raspberries, Surprise, Superlative, Kansas Blackcap, 75c doz.
Blackberries, Mammoth and Rathburn, 75c doz.
Phenomenal Berry, London Red, Golden Queen, 75c doz.
Cuthbert, Gardena and Lucretia Dewberry, Logan, 50c doz.
J. S. [illegible]s, Barrs, Palmetto, Columbia.
Phones: Sunse[illegible]s, Flowers.
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Phone Sun

FUTURE OF THE PRUNE BUSINESS.

THOSE familiar with the market reports will remember that in the autumn of 1908 the sheep men of Wyoming and Idaho were greatly discouraged. As the shearing season advanced the wool passed into the hands of Eastern commission men at prices which indicated almost a total failure of the market. Small councils took the first remedial measure by meeting to discuss the subject of organization. Then larger ones followed, and on January 16, 1909, a defensive trust was formulated at an all-Western conference of sheep men, held at Pocatello, Idaho. Some time previous to this a conference had been held at Cheyenne, Wyoming, a month later another at Salt Lake City, and in November a number of State meetings at different places. These conferences uncovered the cause of the sheep men's distress. They were at the mercy of a buying trust. At the close of the shearing season the one thing needful was money, and not having it the trust took advantage of the situation and pressed the price down to starvation. Thus the sheep man was squeezed. How to meet this condition the conferences sought to learn, and they learned. "Fight the trust with a bigger trust" was the slogan, and it resulted in the establishment of "The National Wool Warehouse and Storage Company," a corporation, as one paper says, "that bids fair to revolutionize the methods of wool traffic within the season now immediately approaching. It promises to shake off with one movement the whole tribe of buyers from the East who have flourished among the flocks ever since Western wool began to seek an Eastern market, and to substitute in their stead at Chicago a wool depot where each year there will be shipped 150,000,000 pounds of wool, there to be offered, not to commission men, but to big manufacturers direct."

So much for the intelligence of the wool-grower. It is an old saying that the wise man is not he who never makes a mistake, but he who never makes the same mistake twice. How about our prune-growers? They repeat the mistake from year to year of putting into the hands of the packer and the Eastern commission men the crops which should give them a profit for their labor and investment. In the face of a market drifting from bad to worse, no effort is made even so much as to intelligently inquire into the cause of it all. Simply because one combination failed of all the good things it seemed to promise, the grower, discouraged and heartsick, supinely falls upon his elbows and does nothing. Now this indifference, if continued, can only result in the complete annihilation of an industry, which, if conducted in the same spirit of unity which characterizes the conduct of some of the great legitimate trusts, would be very profitable.

Perhaps there is not a grower in this county who does not know that he is being either deliberately robbed, or skilfully "jobbed," by someone. A child of six years could not be so obtuse as not to know that if the consumer pays about seven times as much per pound for his prunes as the grower receives there is something wrong, and he would at once ask: "Who pockets the difference?" This solved and corrected, and the grower will come into his own.

But how are we to go about it? Go ask the sheep man who has just extricated himself from impending bankruptcy; who has established his own warehouse as a means of getting closer to the consumer, and who in a single step has gone over the heads of a multitude of middlemen who for years have waxed fat on commissions and percentages which belong to the sheep man and to no one else.

If the prune-growers of the Pacific Coast would but employ some brainy business leader to organize them and their business it would pay them an hundredfold, even though the fee of such a man were fixed at $100,000. There is no other way by which this vast business can be saved. In this county alone the land under prunes represents a tremendous investment upon which thousands depend for sustenance. To let it drift into decline and death is criminal, and yet that is inevitable unless something is done, and soon, to prevent it. Have we a leader large enough and honest enough to undertake this task, and have we a sufficient number of growers willing to be saved if it be shown that they can be saved?—San Jose Mercury.

HOME CANNING FOR MARKET.

It is a very significant fact that the idea of saving the surplus by home canning has in many cases proved practicable.

Cheap outfits, which make it possible to adopt in a small way the methods of the cannery, are now in use by many a farmer and gardener. The results are satisfactory, because there is a ready sale for fruits and vegetables put up by persons known to be careful and cleanly. The sale of these home products must perforce be in competition with factory goods, but there is an increasing class of buyers who look to quality, rather than price.

Let the work be done as nicely as for the home table and the market for the output is secured.

The weak point in the plans of the gardener and fruit grower is this: Just when he has a good crop in any line there is apt to be a glut, and much of it goes for the bare cost of gathering.

At this very point the home canning plan comes to his relief. He stops the further demoralization of the market, and assures himself a paying price for his surplus.

Perhaps there is more going to waste than you realize. A bushel of tomatoes will make twenty three-pound cans. A bushel of raspberries or blackberries will make over thirty cans. Strawberries will be a little less. Apples will yield about eighteen, and peaches about twenty cans per bushel.

Figure from this how much you are losing every time there is a glut, and consider if it is not wise to save it.

WORTH SAVING.

Don't throw away the hoe with a broken handle, even if if there are only two feet of the handle left. Instead, take it to a blacksmith shop and have the hoe straightened out on a line with the handle. It would not be amiss, also, to have the hoe sharpened. You will find this useful in many ways around the chicken house, or in the garden, for digging weeds or lifting plants for repotting.

TREES

Hurry Your Order

Get your trees in the ground as soon as possible.

Season Advancing

and the rapidly decreasing stocks make it advisable for you to place your order at once.

Bedrock Prices Now

We have the largest and finest stock on the coast. Our trees are all true to name, strong and thrifty, and are properly prepared for shipping so they reach their destination in perfect condition.

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Arkansas Black, Ben Davis, Gano (Black Ben Davis), Jonathan, White Winter Pearmain, Winesap, Yellow Bellflower.

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Bartlett, Doyenne du Comice and Glou Morceau, the three great commercial pears, 10,000 Imported French Pear seedlings for immediate shipment. Write for prices.

Peaches and Apricots

Special prices on our Royal and Blenheim Apricots uo Myrobolan root and on the following varieties of peaches: Elberta, Lovell, McDevitt, Cling, Muir, Phillips, Runyons Orange and Sellers Orange Clings, Susquehanna, Tuscan Cling and Wheatland.

Grape Vines

We are offering big inducements on all the leading table, raisin and wine grapes. Write for our Surplus List No. 2. We will make it worth your while to figure with us.

Roses

Send us your orders and let us make a selection of roses for you. We will fill your orders with first class plants, our selection, for $1.80 per dozen.

"Cal. Horticulture"

Nothing like it. Full of valuable information. Send 25c for copy postpaid. You can't afford to be without it.

Price catalogue mailed on application.

Wrte for beautifully illustrated Burbank booklet telling all about the great commercial plums, Santa Rosa, Gaviota and Formosa; the striking novelty Rutland Plumcot and the beautiful foliage plum "Vesuvius." Also the great timber and shade trees, Paradox and Royal Walnuts. Price 25c.

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INC.
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FIGURE WHAT YOU'RE LOSING

The New York Experiment Station at Geneva, N. Y., reports that in an exhaustive experiment which covered 10 years the average "gain due to spraying potatoes" was 233 bushels per acre. How much would that amount to on your crop?—Have you ever figured it out? You can increase your crop just as much, and the increase of "one acre" will more than pay for our best sprayer. If you are tired of seeing your crop cut in half—by blight, bugs, rot, etc. Get one of our

HURST POTATO SPRAYERS

on Free Trial NO MONEY IN ADVANCE PAY AFTER IT HAS PAID FOR ITSELF

no-bank-deposit, no-strings-to-our-"free-trial." Spray first, then if you buy—pay us out of the "extra profit." These sprayers SPRAY ANYTHING, potatoes and truck, 4 to 6 rows at a time. Also first-class orchard and vineyard sprayers. "Man-Power and Horse-Power." High-pressure and perfect agitation. Vapor Spray prevents blight, scab, rot and bugs and other insects from injuring your crop. Strong and durable. Brass ball-valves, plunger, cylinder, strainer, etc. GUARANTEED 5 YEARS. Shipped direct to you at dealer's wholesale prices. We pay freight. Tell us which sprayer you are interested in and you'll get our valuable Spraying-Guide, Catalog of "all kinds" of sprayers, and our special free Sprayer offer to first in your locality this season.

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Write for our special circulars on Watermelons, Casabas, and Peanuts.
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Angeleno, Large, prolific, and one of the best for shipping.
Kleckley Sweet / ***Rattlesnake*** } The favorites in the San Francisco and Northern markets.
Florida Favorite, The earliest good shipper.
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Eden Gem / ***Waters Solid Net*** / ***Van Buskirks Netted Rock*** } The best strains of the popular Rocky Ford.
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A. & M. Triumph / ***A. & M. Pineapple*** / ***A. & M. Model*** } The favorites on the Los Angeles market.

Oregon Evergreen Sweet Corn is the best for market gardeners.
Write for our 150 Page illustrated catalog of ***Seeds, Poultry Supplies, Plants.*** Special Eucalyptus Department.

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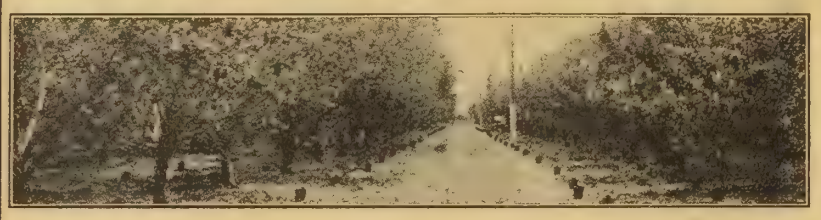

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Write us for particulars.

The Frost Prevention Co.
Fresno, California

SEED

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Onion Seed First Quality Yellow Danvers and Australian Brown for Main Crop. Germination over 95% by test. Per lb $1.75.

Get Our New Catalogue

Eucalyptus All the Leading Varieties in seed @ 15c per package, (Six of the leading varieties, E. Rostrata, E. Leucoxylon, E. Rudis, E. Globulus, E. Corynocalyx, and E. Tereticornis for 50c, with cultural directions). 500,000 Plants, all varieties. State your wants and get prices. Send 10c for large packet each of our new ***Cabbage Head Lettuce, King of May*** and ***Brown Dutch***, earliest and finest flavor.

MORRIS & SNOW SEED CO. 425 So. Main Street Los Angeles, Cal.

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We have a full line of Nursery Stock, including citrus and deciduous fruit and nut trees: Also eucalyptus trees, 15 varieties.

ROSE BUSHES, ORNAMENTAL, SHADE AND STREET TREES.

We publish a price list, a descriptive catalogue. and a special Eucalyptus pamphlet.

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Small Fruits and Vegetables

POINTERS ON GROWING ASPARAGUS.

THE first essential to the successful growing of asparagus is the selection of the soil. Since the crop is to remain in position for many years, the soil should be selected with that fact in mind. The plant is most grateful for a warm, sandy soil or a light loam, and a soil carrying much organic matter is a very desirable one for this crop. In some sections reclaimed swamp land produces abundant crops. In California thousands of acres of tule lands are devoted to the growing of asparagus. There is no danger from an over rich forcing soil for this crop, for the earlier it can be placed upon the market the better the financial returns. Moreover a first class product can only be raised on a very rich soil.

The desire of the producer to obtain green or white asparagus will decide the manner of planting. If white asparagus is desired furrows four feet apart should be cleaned out to a depth of from eight to twelve inches; but if the green shoots are the object, the crown should be set only three or four inches beneath the surface. At the outset the plants should not be too deeply covered, two inches being sufficient, but the furrows should be gradually filled as the growth increases.

A clean culture should be carried on at all times. This not only conserves moisture, but it allows the cutting to be done more expeditiously.

There is practically no soil on which asparagus grows, but what fertilizers can be applied profitably. Stable manure is used by some growers, but the great objection to its use is that it carries so many obnoxious weed seeds. On account of supplying humus there is sometimes an advantage in using manures, but since the average farm manures are low in potash and phosphoric acid, these elements should supplement the manures. Potash is a much needed element in the asparagus field, since it insures a crisp, well flavored shoot, which is firm enough to carry well. Muriate of potash is the best form to use under asparagus.

Nitrate of soda can also be used profitably, Even growers on tule lands find an advantage in using it, since it promotes an early start. From 400 to 800 lbs. per acre of a mixture analyzing nitrogen, 4 per cent phosphoric acid, 7 per cent, and potash, 9 per cent, which is a poular one, should be used, but if the simples are to be bought the following can be used per acre: 100 to 200 pounds nitrate of soda; 200 to 400 pounds phosphoric acid, and 75 to 150 pounds of muriate of potash. This material should be worked in between the rows as early in the spring as possible. To old fields an application of potash and phosphoric acid can profitably be made after the last cutting, and this followed with a liberal dressing of nitrate of soda in the spring.—D. I. Duncan.

SPRAYING.

It is especially important this month to spray or dust all the trunks, stems and branches of fruit trees, grape vines and berry plants with Bordeaux mixture in order to kill fungus and prevent leaf curl and blight; a second spraying is necessary about the time the buds start.

HEN MANURE FOR POTATOES.

A writer in Farm Poultry gives his experience with hen manure on potatoes as follows:

We took for our potato patch just one-third of an acre, and covered it broadcast with a moderate coating of hen manure that had been collected from the dropping boards. This was all the dressing the piece had. We planted our potatoes, and the following week hoed them once with a horse hoe. This is all the time or labor that was expended on the crop, except the labor of digging and picking up this fall. The crop from this one-third acre was just 150 bushels of extra large smooth potatoes, and ten bushels of small ones. The potatoes were of such excellent quality that they brought five cents per bushel more from the Boston buyer than any other potatoes in this locality. The piece used was of easy access from the free range occupied by the pullets this summer. These pullets assisted materially in the crop, as they kept the piece well "cultivated" by their scratching, and kept away or ate up all the potato bugs; we did not see a bug on the piece, and did not use an ounce of Paris green or Bordeaux mixture. The crop of (at the rate of) 480 bushels to the acre was certainly a good one, and the expense was certainly the minimum. We think it is a good illustration of the quick liberation of plant food from hen manure.

THE PROPERTIES OF VEGETABLES.

The following information regarding the properties of common vegetables may be useful to most people. Spinach has a direct effect upon the kidneys. The common dandelion, used as greens, is excellent for the same trouble. Asparagus purges the blood. Celery acts admirably upon the nervous system and is said to be a cure for rheumatism and neuralgia. Tomatoes act upon the liver. Beets and turnips are excellent appetizers. Lettuce and cucumbers are cooling in their effects upon the system. Onions, garlic, leeks, olives and shallots, all of which are similar, possess medicinal virtues of a marked character, stimulating the circulatory system, and the consequent increase of the saliva. Red onions are an excellent diuretic, and the white ones are recommended to be eaten raw as a remedy for insomnia. They are a tonic and nutritious. A soup made from onions is regarded by the French as an excellent restorative in debility of the digestive organs.

Humus in the soil is a very important part in gardening. This may be supplied in the form of well rotted manure where plenty of straw, stover and old leaves have been used in the stable for bedding.

Sunshine destroys fungous growth and should be let in through the trees and to the ground beneath.

This is a good month to get the hotbed planned for the spring work. Paint the sash and get everything in readiness.

The best time to kill weeds is when they are germinating and before they push through the ground. Frequent shallow cultivation will accomplish this.

County Control of Tree Planting on County Roads

"Beautify our roadways" should be a slogan with all well wishers of California. Shaded and beautified streets add to desirability of property, and desirability increases wealth. We are glad to give the following by the veteran tree warden of Riverside, J. H. Reed, the tree lover. Regarding him and his work the Riverside Chamber of Commerce recently passed the following resolutions:

"Resolved, That the Chamber of Commerce of Riverside recognizes in J. H. Reed, municipal tree warden, an officer whose unselfish and painstaking labors in behalf of the city have resulted in immeasurable benefits to this community.

"Resolved, That we congratulate Mayor Evans and the city administration upon being able to secure the services of a man so experienced and so well equipped for the work which he has in hand, and hereby express our most earnest hope that Mr. Reed will long be able to continue in the work which he now has in hand.

"Resolved, That we take this means of assuring Mr. Reed of our most hearty endorsement of his work and of thanking him for his labors, for which the city is able to so inadequately recompense him."

THE campaign for good roads in California, so long carried on in papers and conventions, now bids fair to materialize into real road building. Many miles of good road beds will be built in California at least, in the near future. The economy and comfort they will bring, will be exceedingly great. But the pleasure and satisfaction they may bring will not be complete till they are lined with shade trees. Plans for ornamenting these highways should go on simultaneously with those of their building.

These good roads are not being built especially for speedways for transient autoists, who simply care to get on, or who find a sort of pleasure in rapid motion, as does the child in a high-going swing or merry-go-round, regardless of discomforts and danger of the ordinary traveler. They are, or should be, mainly for the convenience and pleasure of resident people who pay the cost of their building and maintenance, those who appreciate something more than mere speed, and use the roads for business or pleasure as occasion requires.

City and County Control.

The municipal governments that build the expensive road-beds on the residence streets of our cities, leaving them, as is so often done, lined with but the cheerless cement curbs and sidewalks, get but half the possible value of their expenditure. Let these street be lined with intelligently chosen, properly cared for trees, and the value of these expensive city improvements, is doubled at a slight cost.

This will prove as true of our improved country roads. For instance, if Los Angeles county would plan to spend even a very small,—an insignificantly small—fraction comparatively of the splendid sum it has voted for good roads, in their systematic, intelligent embellishment, it would add wonderfully to the real satisfaction these new road-beds will give. No other equal portion of the entire sum spent will return anything like equal value. And while the road-beds are necessarily gradually deteriorating, the broadening shade trees would be constantly improving and serve generations without renewing.

Let this policy be carried out in other countries where these expensive road-beds are now sure to be made, and it would be difficult to conceive the actual value this fraction would add, in the way of inducing appreciative people to make permanent homes in their vicinity.

Imagine the genuine satisfaction of the farmer in driving with his load of produce, in his carriage or his auto, mile after mile over shaded dustless roads, or the admiration of the visiting tourist as he enjoys his leisurely drive through the country.

Roadside Tree Planting Now.

But we need not and should not wait for the new roads now planned to commence this systematic ornamentation. This tree planting along our country highways should commence at once. Should have commenced long ago. Supposing the leading thoroughfares connecting our villages and cities, now so bare and homely, though so much traveled, had been wisely planted to shade trees twenty—ten—even five years ago, and properly cared for. Will somebody attempt to estimate the actual value as a cash asset to the counties now, say nothing of the enjoyment they would have given during all these years?

Is It Practicable?

Is successful roadside ornamentation practicable in this country? It most certainly is—as practicable as good road making. The requisites are simply a little money—little compared with value of results—judicious planning, and intelligent, systematic organized effort.

Something may be done through local improvement organiaztions. In fact much has been done in some cases, but as a rule such voluntary efforts have not proven very successful.

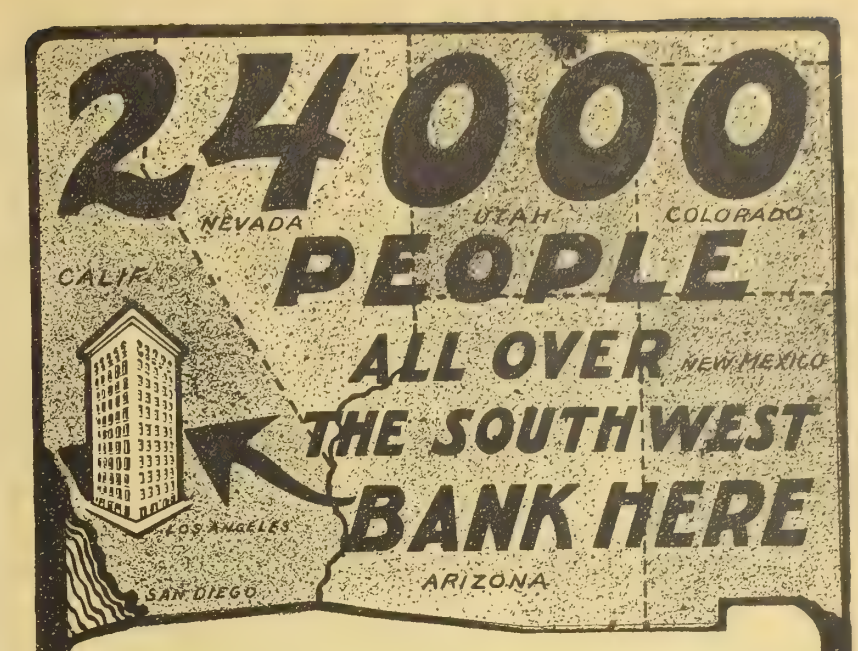
Heretofore the street ornamentation of our cities has depended for the most part on individual effort, with occasional help from local improvement clubs. But results have not been generally satisfactory and some cities have already adopted municipal control of street beautification, with results so satisfactory, that many other towns are planning to follow their example. There is no doubt in my mind, that in a brief time the street ornamentation of our progressive cities will be as fully and directly controlled by municipal authority as are their roadways and sidewalks.

I believe the same general principles should be applied to country roadway ornamentation, and every county have its tree warden or forester, having entire control of the beautification of its roads, with sufficient funds to gradually secure roadside tree planting and care, commencing in neighborhoods where property owners will co-operate in bearing initial expense, and after care.

I readily understand that apparently serious difficulties will at once present themselves to those who have not given the matter thought, but I am sure they can all be easily overcome when the importance of the movement is realized. The county could raise its own trees at slight cost. Necessary irrigation while the trees are young can be managed without excessive expense. The important thing would be a man with good judgment, expert in handling trees, with appreciation and love for the work.

We have native and acclimated for-

(Continued on Page 325.)



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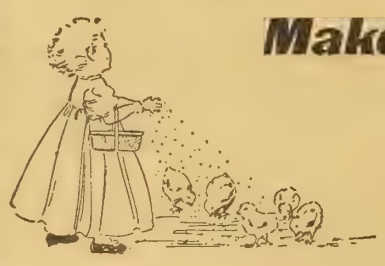

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TO RAISE EVERY CHICK you hatch; to have fine, large, healthy chicks; to have chicks that will stand up and crow when eight weeks old; to raise chicks that you will be proud of, FEED COULSON'S SPECIAL DRY CHICK FOOD, THE LIFE SAVER.

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DEMONSTRATION TRAIN—INSTITUTE ON WHEELS.

(Continued from Cover Page.)

Department of University Extension in Agriculture, and Southern California in charge of J. B. Neff.

The number of these institutions has increased from year to year and the farmers and fruit growers have received great benefit from them. When they are held, usually the entire day is given up to the institute, having forenoon, afternoon and evening sessions. Sometimes two or three days sessions are held.

Since the establishing of the corn trains of the middle west, attention has been attracted to the possibilities of a farmers institute held on similar trains. For two or three years some eastern states have held these institutes, always through the support of the railroad companies, who have usually financed the proposition and furnished the cars and transportation facilities. The Southern Pacific Railroad Company gave some attention to this matter nearly a year since, but until last November the way did not seem to open for such a train in this state.

At that time a train was made up and traversed the Sacramento valley. All equipment necessary was furnished by the railway company and the speakers were secured from the staff of the State University and of the State Horticultural Commission. The fourth trip of this train was announced to begin at Pasadena, Los Angeles county, Wednesday, March 10. The writer was granted the courtesy of a few days with this train and it was a most intensely interesting trip. Some facts about it and the manner of conducting the meetings may be seen in the Dairy Department of this week's paper, where Mrs. Sherman refers to her experience in the San Joaquin valley. By the way, Mrs. Sherman is accompanying this train as a lecturer on vine culture, giving especial reference to pruning the vine. On the first cover of this week's Cultivator may be seen photographs of the vines arranged in her corner of the demonstration car.

Besides the diner on which we were when Mrs. Sherman made her remark as to her appreciation of this type of institute, there was the sleeper "Khyber;" next to that the demonstration car, devoted to the exhibit made by the State Board of Horticulture. Forward of that was the lecture car which was seldom used on this trip, as the time seemed to be more satisfactorily taken up in the examination of the exhibits. Forward of the lecture car was the one containing the larger part of the exhibit made by the State University.

The first exhibit to strike one's eyes was that in charge of Dr. C. M. Haring, Veterinarian of the Experiment Station, which consisted of appliances for the sanitary handling of milk and a grewsome exhibit of tissues from diseased animals, more largely made up from those affected by tuberculosis.

On the other side of the car was an exhibit in charge of Prof. Babcock, having to do with plant pathology and containing a large number of exhibits, showing various rusts and other fungous diseases of plants. Farther on in the center of the car was the cereal exhibit of the State University, in charge of Prof. Shaw. In the next car the most attractive exhibit was that illustrating the methods of pruning and was in charge of Mrs. Sherman. Opposite that exhibit was one devoted to medical entomology, in charge of Prof. W. B. Herms. In the same car were spray pumps of the knapsack order, also of the larger hand power kinds. Another exhibit which attracted much attention was that of eucalyptus wood; axe helves, hammer handles, wagon spokes, singletrees, and other tools or parts of tools were exhibited and created much interest in the growing of this valuable timber.

A most interesting feature of this car was the display of soils in bottles which had been taken from various sections of the state. These bottles were arranged one above the other, showing the exact location from which the soil was taken. That is, if the sample was taken to a depth of ten feet, each bottle represented one foot of the soil's depth and the ten bottles showed the grading or kind of soil from top to bottom. In some of the deeper soils the character shown by the bottles was most uniform, while in others a top soil of remarkable fineness appeared, while lower either clays or gravel were shown.

These few notes do not so much as touch the great number of these exhibits especially those made in the car of the Horticultural Commission. This car was in charge of State Commissioner Jeffrey, with Messrs. Carnes, Ehrhorn and Strong assisting. As an indication of the number of insects there displayed we may mention that Mr. Ehrhorn was in charge of one exhibit of more than three hundred bottles of insects which were taken from plants and from fruits which were seeking entry at the port of San Francisco. This was a most forceful illustration of the worth of this particular arm of our state government. The white fly was there in all stages of growth and on many kinds of leaves. Another exhibit consisted of thirty quarts of lady birds in ventilated boxes, being taken to the cantaloupe fields of Imperial and Coachella valleys.

The train is in charge of Assistant General Passenger Agent T. A. Graham, with the genial Traveling Pass. Agt. F. C. Lathrop, arranging the various details of the trip. Mr. Cook of the Citrus Claims Department was also a member of the party. Immediate charge of the train was in the hands of Conductor J. M. McKinnon. Every one of these men did their best for the comfort of those accompanying the train and to make the stops at the various stations as valuable as possible to the visitors.

As an example of the courtesies extended, we might refer to the fact that at San Dimas the high schools had been dismissed to inspect the exhibits. As most of the scholars had walked some distance to the depot and as the school was near the track in the direction in which the train was going, the suggestion was made to Mr. Lathrop that it would be a great treat to the children to be carried on the train as it pulled out to the point nearest the school house, where they might be permitted to leave the train. This was promptly acceded to and the pleasure of the short ride given to the children.

When the train stopped for only an hour or two during the day time, no effort whatever was made to hold a formal meeting, but in the evening adjournment was had to the nearest

(Continued on Page 335.)

Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

By Mrs. Minna E. Sherman

THE DEMONSTRATION TRAIN.

THE sun was shining on the snow of the Sierras; even the foothills were white, making more vivid the contrast with the long stretch of green barley fields. This was the picture that dazzled the eyes as I stood waiting by the roadside for the Demonstration Train, in the chill air of the early February morning. Beautiful and serene were the broad fields, but how devoid of people! The country was not covered with homes made comfortable by incomes from vines and trees. The air was not full of the joyous voices of happy children, satisfied with the simple life and not knowing of the vices that are found in a crowd.

Will the time come when women and children are in these lonely houses? The children fitted to live in the country by a knowledge of its manifold life? Children that know the trees, flowers and birds? Children growing up on the farms well instructed in the arts of making the soil yield its best harvests? Yes! the time is at hand for the Evangel train is coming! Bringing to the people the "glad tidings" of the better way of making the soil productive.

The train comes slowing to a stop, but not before several cars have glided by, covered with the colors blue and gold of the loved 'Varsity. This train carrying the gospel of better horticulture and agriculture, carries something more to the people of California, for it carries the message that a great corporation has found that it has a soul. As the train comes to a standstill, Professor Clarke's smiling face appears behind the bustling conductor. Off swings the man in uniform with a shout of "All aboard" at the lone passenger. All aboard it is in short order and away I was off for the trip up the valley. The fullness of the meaning of this Demonstration Train to the State's future prosperity slowly came to be realized as little town after little town gave their rousing welcome to the speakers.

Pie a la Mode.

Professor Clarke, as head of the University force of lecturers, was everywhere, making us all happy by kindly encouragement. It was a happy congenial family rather than a number of people out to lecture. The Southern Pacific had given its best equipment of train service, and Mr. Judah, assistant passenger agent from San Francisco, represented the railroad in the talking force, while from Fresno we had Mr. Burkhalter to take charge of the schedule on which the train ran over his division. The trip was made without a single delay or being behind at any time; this was all the more remarkable as the many "dry weather" streams were bank-full of tawny water. Even the diner was furnished with its complete force—to give well-cooked meals strictly on time. Many happy hours were spent in the diner and "pie a la mode" was a prime favorite. The standard sleeper was in charge of a porter who wore three stripes on his sleeve for long, faithful service. The train with its service was regarded as the first factor or division of the Demonstration work and Mr. Judah made the first address to the audiences telling why the Southern Pacific was deeply interested in this movement. The second part was the University with its representatives of professors and Farmers Institute workers. The third portion was the State Horticultural Commission supplemented with the workers of the Government in like matters.

The train was made up of three cars of exhibits, a lecture car, a sleeper, and the diner. The lecture car, one of the largest-sized chair cars, was used as an audience room at the smaller places. In the larger towns local committees had provided halls for the lectures. The speaking was limited in the morning and afternoon sessions to one hour and a half, while the evening sessions were longer. The speakers were kept down to fifteen minutes, then when that was up they were clicked down with a little ticker. It made the talks crisp and to the point. When the time was spent that the card allowed, Prof. Clarke would say something like this to the audience: "Now, friends, our time is up! We will adjourn to the exhibition car for we consider you are all from Missouri. We will try to 'show you' and answer your questions on the subjects we have talked about." Then came a rush to the cars, pell-mell. It was often difficult for the demonstrators to get into the car to show the exhibits.

Exhibits.

The first car carried the vine exhibit, real vines set in a bed of earth, some pruned and some unpruned, to show the proper way of handling the low pruned varieties. The trellised vines and the vertical and horizontal cordon pruning were illustrated with photographs. There were also a series of large photographs that showed bad handling. A spray pump with its various nozzles, a display of bottled sprays used in horticultural work, a sulphur machine, completed the viticulture display. The exhibition of these vines created much interest and the Italians came in bunches. At one place there was one man who acted as interpreter for the rest. The pruning of the muscat vines was their study, as they explained they did not know anything about the way to bring them into shape from the cutting. The interest in the forward part of the car centered in the eucalyptus exhibit of polished samples and in a rack of turned work in the way of handles for small tools. At one place a rusty-throated native told of the wonders and wealth to be made by planting the eucalyptus for fuel. I listened and felt a little dizzy over the amount of money I had let slip away by prosaically growing grapes; then I remembered that half mile of trees I had been glad to let out the cutting for half the cord wood, for when I cut them with ordinary labor the cost of cutting made it cheaper to buy mountain wood. I kept quiet, for I am not a knocker! I have dwelt on this

Other Cream Separators Merely Discarded or Abandoned De Laval Inventions

It is interesting and instructive to know that nearly, if not quite, every cream separator that has ever been made, and certainly all that are being made at this time are merely copies or imitations of some type of construction originally invented or developed by the De Laval Company, and either not used by it because of something more practical or else discarded and abandoned in the course of De Laval progress and utilization of later improvements.

As earlier patents have expired some of their features have one after another been taken up by different imitators, so that at all times, as is the case today, every separator made in the United States or elsewhere in the world, utilizes some type of construction originally owned and developed by the De Laval Company, though some of them have never been commercially used by the De Laval Company because of their inferiority to other types of construction used by it.

All cream separator inventions by others have been of immaterial details or variations, upon which patents have been taken, if at all, more for the sake of the name than by reason of any real value or usefulness attaching to them.

But the De Laval Company has always been forging ahead, with its many years of experience and the best of experts and mechanics the whole world affords in its employ, so that before any expiring patent might permit the use of any feature of construction by imitators the De Laval Company had already gone so much beyond that type of construction that it was then old and out-of-date in the modern De Laval machines.

The first practical continuous flow centrifugal Cream Separator was the invention of Dr. Gustaf de Laval in 1878, the American patent application being filed July 31, 1879, and issuing as Letters Patent No. 247,804, October 4, 1881.

This was the original Cream Separator—of the "Hollow" or empty bowl type—and it has been followed from year to year by the various steps of cream separator improvement and development, all De Laval made or owned inventions, the American patent applications being filed and letters patent issued as follows:

The original hand Cream Separator of the "Bevel Gear" type; application filed October 2, 1886, issuing as Letters Patent No. 356,990 February 1, 1887.

The original hand Cream Separator of the "Spur Gear" type; application filed January 17, 1887, issuing as Letters Patents No. 368,328 August 16, 1887.

The original Steam Turbine-driven Cream Separator; application filed December 8, 1886, issuing as Letters Patent No. 379,690 March 20, 1888.

The original "Tubular" shaped "hollow" bowl Cream Separator; application filed April 19, 1886, issuing as Letters Patent No. 372,788 November 8, 1887.

The original "Disc" bowl Cream Separator; application filed May 12, 1890, issuing as Letters Patent No. 432,719 July 22, 1890.

The original vertical "Blade" Cream Separator bowl, covered likewise by the application filed May 12, 1890, issuing as Letters Patent No. 432,719 July 22, 1890.

The original "Bottom Feed" Cream Separator bowl; application filed July 24, 1889, issuing as Letters Patent No. 445,066 January 20, 1891.

The original series of "Star" or "Pineapple Cone" shaped cylinders Cream Separator bowl; application filed August 24, 1893, issuing as Letters Patent No. 521,722 June 19, 1894.

The original "Curved" or "Converging Disc" type of Cream Separator bowl; application filed January 18, 1905, issuing as Letters Patent No. 892,999 July 14, 1908.

The original "Split-Wing" Tubular Shaft Cream Separator bowl; application filed April 29, 1898, issuing as Letters Patent No. 640,358 January 2, 1900—which invention, with a number of later improvements, is the type of bowl construction used in the De Laval machines of today, still covered by protecting patents which prevent its appropriation by would-be competitors.

The patents thus enumerated are but a few of the more important of the more than 500 original Cream Separator patents owned, controlled and developed by the De Laval Company during its thirty years of creation and development of the Cream Separator industry throughout the world. They are recited because they show in the most illustrative and conclusive manner possible De Laval originality and leadership from 1878 to the present day.

In addition to these patent-protected features, the De Laval machines have within two years been mechanically re-designed and re-constructed in every part, from top to bottom, so that the new 1908-1909 line of De Laval machines are today, even more than at any past period, fully ten years in advance of any other cream separator made.

These are the Rock-of-Gibraltar-like facts against which the mere "word claims" of would-be competitors fade away like the mists of night before the rays of the morning sun.

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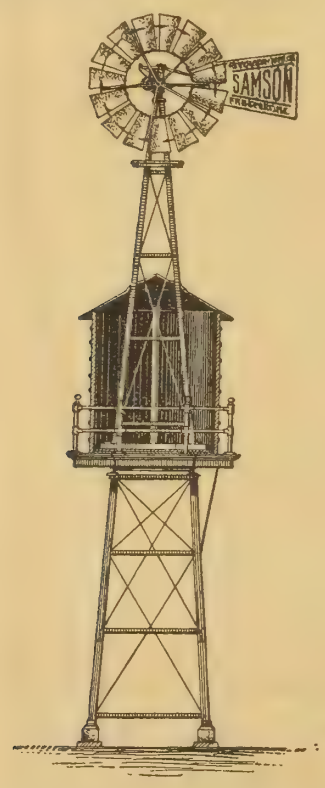

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car as I was in it and consequently knew more about the people's opinion of the exhibit.

Bugs.

The next car was the exhibit of bugs and insects, scales and blights, and remedies for the same, with Professor Clarke in charge; also an exhibition of sulphurs. Mr. Symmes had the dairy division; overhead were placards on pertinent questions about the cow, about the uses of the Babcock test, and sample cards of the different forms for keeping milk and butter records of individual cows. Then came the ghastly display of jars of preserved meats from diseased animals. The manikins of horse legs, showing side bones, splints and spavins, while the head of a double-headed calf had always a ring of "kiddies" open-eyed around it. Dr. Shaw had an interesting lot of cereals with regional varieties of alfalfa, and also new fodder plants now being introduced. The greatly increased yield by proper cultivation and by selection of varieties is almost too wonderful to be told. Wheat, barley, rye and oats are all showing that pedigreeing or breeding up will make them as productive as it has made the dairy cow. Next came the lecture car, and following it the exhibition car of the State Horticultural Commissioner, in charge of Mr. Ehrhorn, second Horticultural Officer of the State and Chief of the Quarantine at the port of San Francisco; also Mr. Carnes, in charge of the Insectary at Sacramento, where the predaceous insects from all over the world are gathered together and bred in quarantine to send out to the fruit grower to hold the fruit pests in check. Mr. Maskew also was there, who proved to the people of the State in the campaign against the white fly at Marysville that his ability, as shown when a local horticultural commissioner of Los Angeles, had not been over-rated. Peach yellows and scales were among Mr. Maskew's many topics.

300 Bottles.

Overhead on a rack was the long line of three hundred bottles, each containing a pest that had been found on plants or fruit at the port of San Francisco and kept out of the State by the vigilance of the Horticultural Commissioner. The most dreaded at present is the maggot found in the oranges in parts of Mexico; anyone bringing a few oranges into the country in a hand satchel may bring this pest. The small plants that people carry from the Orient, as well as the wreaths and palms on the coffins are all confiscated and burned. Nothing seems to escape the vigilance of the horticultural officers.

Mr. Carnes had the lady birds and also a case of insects from other parts of the world, showing the mimicry of plants in their forms and coloring. The school children were interested in these, showing that the picturesque side of nature study was familiar to them. In this car—I will not mention where—was a case of hugging and kissing bugs that was greeted often with giggles and blushes by the high school misses. "One isn't any good without the t'other," said one girl, appealing to the man in charge. After looking around to see who heard it, he assured her that she was correct from a nature study point of view.

Adam a Farmer.

When the hour and a half to two

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My Berkshires took 9 First, 6 Second and 4 Third Prizes and both Gold Medals. 50 Head For Sale.
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hours had passed, the train was ready to move. "Toot, toot" came from the engine, and the conductor, in his brass buttons, began to head the people out of the cars, locking the doors behind him. From the head car I moved down with the people and watched them filing out of the cars. They went reluctantly with many a backward glance, and the remark was frequently heard that the stay was too short and they hoped we would stay longer next time.

At night, when the talks had been made and the train was resting on a quiet side track until morning, we would gather into a family group and chat over the events of the day, tell a few stories and one by one drop away into the comfortable berths, thankful for the hospitality of the Southern Pacific Company. At times all were tired, yet the thought was cheering that there was a better and fuller life for the people on the farm easily within reach of all. We all believe this fully, and gladly give our strength to helping forward that happy day. Not to believe this is to doubt that God knew what was best for man, for it was He that made Adam a farmer.—M. E. Sherman.

HORSE MANAGEMENT.

A sudden change of food in horses is always dangerous, but to start a colt in on grain, with heavy work, that has never had either, is almost sure to be disastrous, writes G. H. Glover, D. V. S., Colorado Agricultural College. A young horse especially cannot stand heavy pulling all day on soft ground unless his shoulders are well hardened by regular work in the collar.

Here are a few suggestions which will be well worth remembering: When a horse is tired, he is much more subject to colic. Do not change the feed on the horse during heavy spring work. There is much more danger in feeding corn or wheat than there is in feeding oats. Water your horses when you first bring them in from the field; then let them eat hay for a half hour, and give them their grain last. Pull their shoes off while doing the spring work.

Remember, the horse will have a heavy coat of hair and will, therefore, sweat easily and be all the more likely to catch cold and get pneumonia. For the first week or two bathe the neck and shoulders with cold water every night after the day's work is done. See that the collar fits snug and that the hames are buckled up tight. The shoulders are less likely to be scalded and bruised without a pad than with it. If the horse gets sweenied, he will have to be laid off for several months. Guard against that dangerous disease—azoturia. This disease almost invariably comes on after the horse has been resting two or three days during a storm and kept on full feed. Reduce the grain at least one-half while the horse is not at work.

Founder is caused from too much feed, a sudden change of food, or a drink of water when the animal is warm. Distemper is especially liable to attack the young horses in the spring of the year, just when their services are most valuable. This disease is contagious, and care should be exercised against exposing the young horses to the infection. The most common way that young horses get this disease is when they are taken to town and allowed to drink out of public watering troughs and tied to hitching posts where other horses have been tied that had the disease.

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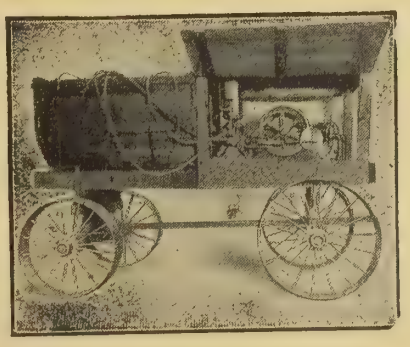

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California Cultivator

ESTABLISHED 1889

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S. A. PEASE - Plant Diseases and Injurious Insects
MRS. FRANK METCALF - - - Poultry

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Contents

DEMONSTRATION TRAIN — INSTITUTE ON WHEELS. Cover.

METHODS OF PLOWING THE ORCHARD, 307.

DECIDUOUS.—Walnut Growers Organize; Advertise the Raisins; Future of the Prune Business; Home Canning for Market; Worth Saving, 310, 311.

SMALL FRUITS AND VEGETABLES.—Pointers on Growing Asparagus; Spraying; Hen Manure for Potatoes; Properties of Vegetables, 312.

COUNTY CONTROL OF TREE PLANTING ON COUNTY ROADS, 313.

LIVE STOCK AND DAIRY.—Demonstration Train; Horse Management, 315, 316, 317.

EDITORIAL.—Demonstration Train; Scholarships at State Fair; Support the Dairy Industry; Self Supporting Indians; Cow Testing, 318.

AGRICULTURAL NOTES OF THE PACIFIC COAST.—Northern, Central, Southern, the Coast 319.

POULTRY.—Method of Poultry Raising; Chat; Care of the Chicks; Pointers About Roosts; Feeds for Chickens, 320, 321, 322, 323.

GENERAL AGRICULTURE.—Durum Wheats, 324

QUERIES AND REPLIES.—Alkali; Leaks Her Milk; Milch Goats; Millet; Overfeeding; Possibly Tuberculosis; Fungus on Lemon; Silos; Butte Valley; Orange Seed Bed, 326, 327, 328.

LEGAL QUERIES.—Right of Way for Water; Trees Near Line; Damage from Storm Water, 328.

HOUSEHOLD.—Maloney's St. Patrick's Day Hat; Grisette's Ninth Life; About the House; A Country Club; Butchering Time Recipes; Emmanuel Movement, 331, 332, 333.

PRODUCE MARKET.—Los Angeles Markets; San Francisco Markets; Citrus Markets, 334, 335.

DEMONSTRATION TRAIN.

The Fourth Farmers' Institute or Demonstration Train is near the end of its fourth trip in this State. One of the first efforts along this line by the railroad people was that of the railroads of Iowa and the middle west in their "corn trains." These corn trains proved such an inspiration to the farmers along the lines traversed by them that a new uplift was given to the calling of agriculture, especially corn growing. The Iowa farms became vastly more productive. The movement spread and other railway companies have taken up similar movements.

The first one in California was last November, when the northern part of the Sacramento valley was visited by a train furnished by the Southern Pacific Railway Co., and equipped with exhibits by the College of Agriculture of the University of California and the State Horticultural Commission.

A few weeks later a second train made a trip through the southern Sacramento valley and the northern San Joaquin valley; a few weeks ago a third toured the southern San Joaquin valley, and last week a fourth trip was started from Pasadena and is now in the Imperial valley showing the "low down" farmers the work done by the Horticultural Commission and the Agricultural College for California farmers.

Incidentally there is being distributed to the cantaloupe growers of that section at the same time, about 30 quarts of the common California lady bird, which will prey upon the melon aphis. Particulars of this work may be seen in the editorial notes made during the few days' trip of this train.

In this place we wish to simply call your attention to the great work being done by these allied interests. All should have large credit for joining in this work which can only lead to greater profit to our farmers, which means greater prosperity to the State.

With it all, however, it is strange to note that the farmers and others, while justly granting credit to the University and Commission for their part in the movement, promiscuously condemn the Southern Pacific Company on general principles. We say it is strange, for while it must be recognized that strong prejudices often warp one's judgment, they should not blind one to see the good which is being accomplished. If work is done which is worth being condemned, let the condemnation be visited; on the other hand, when real worth and public-spirited effort is made, the commendation should be as emphatic as was the condemnation.

It is true that this work is taken up by the Southern Pacific Railway people because of selfishness, but it is such an enlightened selfishness and means so much for the advancement of the State that all may praise the public-spiritedness of the big corporation.

We say it is from an enlightened selfishness for, as Assistant General Passenger Agent T. A. Graham remarked to us: "If we can induce the farmers to destroy the bugs and diseases that are continually reducing their output, our tonnage will be increased to that extent." The railroad people realize that until the farmer prospers the railroads will not prosper. Nevertheless, give them due credit for this effort leading towards greater prosperity to the farmer if he will but come to these trains and ask for information.

SCHOLARSHIPS AT STATE FAIR.

The Iowa State Fair Association is offering prizes in judging contests at its next fall state fair. A series of scholorships for boys and girls of that state will have a most practical value to the youngsters and will, we believe, prove a drawing card for the fair. That such a contest must be of inestimable value will be seen at a glance, and the result will not be so observable this year as it probably will in years to come when Iowa agriculture will benefit by the uplift given to these young people entering into a contest which must necessarily spur to greatest effort and to most earnest study of principles which underlie success.

The girls' contests have to do principally with baking and cooking and recipes for doing the work. Each contestant must mix and bake one dozen baking powder biscuits and must cook one beefsteak. Each must also give in writing the recipe she used, method and time of baking and the reasons for the method used. She must also give in writing recipe for cooking beefsteak and reasons for her method of cooking. The contestants will be allowed one hour and fifty minutes for doing the work and writing recipes. The scale of judging is for finished products 40 points, method of working including accuracy and quickness 20 points, reasons for method 40 points. The scholarships are worth $150, $100, $75 and $25 each.

The boys' contest is open to any boy under twenty-one years of age who has never been classified in any college. The contestants will be required to judge two rings each of horses, cattle and swine, consisting of three or more each, also two or more varieties of corn of ten ears each. The contestants will be allowed twenty-five minutes to present and write reasons, substantiating their judgment on corn and each class of animals. Every contestant must also bring one ear of corn which will be passed upon by an expert and to each contestant bringing the three ears, placed first, second and third, will be given additional points of merit to their total score. The boys' prizes are scholarships of a value of $250, $150, $125, $100 and $25. The money is to be deposited with the treasurer of the Iowa State College of Agriculture with the instructions that the money is to be paid to the boys winning the contest at the rate of not to exceed $25 a month.

In addition there is a special $50 prize to the person or association which secures the entry of the greatest number of contestants.

SUPPORT THE DAIRY INDUSTRY.

A bill has been introduced in both houses of our state legislature, which calls for an appropriation of $25,000 a year to carry out the law in regard to the sanitary conditions of dairies and cheese factories with regard to dairy products. We have heard no objections to this bill and it certainly aims at great benefit to the industry, which needs encouragement in this state. We are now importing hundreds of car loads of dairy products and with our rich alfalfa land and with every facility for manufacture of highest grade products, we should keep more of this money with our own producers. If a system of inspection will aim to raise the grade of our butter so that it will command better prices and in turn yield to the manufacturers and producers more net money, we believe the greatest step will be taken toward meeting the demands of our people.

Another bill contemplates the branding of cold storage eggs in a way that every buyer may know what he is purchasing. This is another excellent bill, for the way in which cold storage eggs have been used to bear the market discourages home industry and is worthy of condemnation and more worthy of being forced into the open. Those who handle that class of goods must sell them for what they really are. The producers of this state have vastly more to do with the health and prosperity of this state than do the speculators in food productions.

SELF SUPPORTING INDIANS.

Mr. G. P. Rixford, special agent of the Department of Agriculture, writes the Cultivator that efforts are now being made at the Colorado Indian Reservation in Arizona with Egyptian cotton with the hope that the result may lead to the production of a crop which may be taken up by the Indians of that reservation, also by those of the Fort Mojave reservation, and by them made an industry by which they may be self supporting. Mr. Rixford writes: "The Commissioner of Indian Affairs of the Department of Agriculture is co-operating in this work as the experiments promise to afford the Indians a means of making money by growing this valuable staple. Last year the price was 25 cents per pound and the United States imported it to a value of $16,000,000. The arid region of southeastern California and southern Arizona will have a monopoly of this crop as it will not grow in the moist atmosphere of the southern states."

The experiments have been very successful in the Imperial valley and the quality has been pronounced superior even to the imported fibre. It is now a question only of labor but at the high price of this long fibre it is entirely probable that the labor question will be settled. In any case, this effort to encourage the Indians in its culture is very gratifying.

COW TESTING.

The Humboldt County dairymen are taking a long step in advance in their organization of a "Cow Testing Association" through which they hope to weed out the deadhead "boarders" from their herds. One small association conducted this work through part of last season and found many cases which were drones and being supported by others of the herd. These have long since gone to the block and the dairying been conducted on a more profitable basis. The work of the Humboldt dairymen should be an incentive to every other section of the country to take a similar step.

A Coachella subscriber writes the Cultivator asking as to the advisability of a personal canvass being made to secure reform in our postal service which will be beneficial to the farmers. Above all he would urge that every farmer in the country would express to his member of Congress the fact that he wants "parcels post." If such a campaign could be set in motion it would doubtless lead to results but the difficulty is to awaken the farmer to his own needs sufficiently to get him to write such letters.

Agricultural Notes of the Pacific Coast

Northern California

Colusa county is talking up a special bond election for good roads.

Colusa has the banner sheep shearer of the state who claims to have done 135 sheep in one day.

Farmers in Guinda, Yolo county, report more damage from coyotes this season than for some time.

San Francisco Produce Exchange has ruled out "pullet eggs" as a separate class and they will hereafter go as "thirds."

One hop grower at Ukiah has sold his hops for the next three years for 10, 10½ and 11 cents per pound for the whole crop.

Mountain lions near Grass Valley, driven down by the heavy snows in the mountains, have killed many calves and sheep.

Ritchey, Amador county, reports the coming apricot crop as almost a failure, peaches a half crop, and prunes showing up well.

The Messrs. Miller & Sons report almonds at Ritchey, Amador county, promise a fine crop though the bloom is fully two weeks early then usual.

A movement is on foot in the Sacramento valley to get the people to combine to fight the dredger miners and prevent filling the rivers with debris.

A Colusa county farmer has forwarded to the Plant Introduction Garden at Chico sample roots of a native wire grass which it is thought may develop into a splendid matting grass.

The Winters Canning Company at its recent annual meeting received a report from its manager showing the last year to have been an exceptionally heavy one.

An effort is being made to secure the straightening and improving of the drainage of Cache creek from Clear Lake, Lake county, so as to make better disposal of storm water.

A wool buyer of San Francisco, recently returned from a trip over the East, reports that a good condition of the market prevails and that the feeling exists that tariff revision will not affect the wool industry.

The annual meeting of the Sonoma County Horticultural Ass'n. recently elected A. R. Galloway president, and W. I. Newcomb secretary. The association has asked the county supervisors to employ an expert entomologist.

The engineer in charge of the Orland irrigation project announces that work will soon be started in planting various fruits and other crops. As an experimental proposition amongst other plants will be the long-fibred Egyptian copper.

Sutter county will beat all previous records in acreage of fruit trees planted this year. It is estimated that at least 1200 acres of trees will be set. Of these 500 will be in grapes and 400 in Tuscan cling peaches. An important fact is that there will be about 150 acres of apples planted.

Sheep men of California won an important victory through the efforts of a sheepman of Red Bluff. He had been arrested for violating an ordinance imposing a license tax of five cents per head on sheep raising in that county. The appellate court held that the license was unreasonable.

Central California

A section of land will be planted to eucalyptus near Alpaugh, Tulare county.

Hanford has a single branch of osage orange which grew 20 feet and 9 inches in one season.

The Farmers Union is endeavoring to work in line with the trade unions of the country in the disposal of large quantities of raisins.

Consumers are complaining of the higher prices of beef, though the producer, while he gets but a small part of it, is more pleased.

Six hundred farmers were present at a Farmers Union in Kingsburg recently and it was decided to locate headquarters at Fresno.

Dairymen of Santa Rita are making more cheese than butter as the cheese factories have proven more profitable during the past few years.

Sequoia Park is to have a better accommodation for soldiers quartered there, which will consist of four sets of officers' quarters and one set of barracks.

A horticultural society has been organized at Hanford, the object of which will be primarily the improvement and beautifying of roadsides and parks.

The raising of oats has proven profitable to some farmers near San Miguel, San Luis Obispo county, and large acreage has been planted the past season.

Hanford has a small experimental forestry farm on which a large variety of eucalyptus trees have been planted and are all showing exceptional growth.

The Pacific Sugar Company, which has factories at Visalia and Corcoran, has levied an assessment of $3.00 and $17.00 per share to aid in preparing for the coming season's run.

The Fresno raisin people are talking of inaugurating a campaign of advertising raisins in the East similar to that carried on by the citrus men of the southern end of the state.

At a recent meeting of the Central California Health Officers' Association, the question of California sulphured fruits and effects upon the system, was discussed by A. J. Watkins of San Francisco.

Agents of the Department of Agriculture are giving information to the orange and lemon shippers in the Lindsay and Lemon Cove regions, as to the best methods of picking and packing fruit.

One steamer recently cleared from San Francisco with 2,579,838 pounds of dried fruit, mostly prunes. This gives the fruit growers of the prune section reassurance as to light hold-over crop, especially if such shipments continue.

The Saratoga Blossom Festival is being celebrated amongst prune blossoms this week in that beautiful suburb of San Jose. The railroads are offering special inducements and vast numbers of visitors, from San Francisco especially, are expected to be poured into the prune orchards to revel amongst the blossoms.

Later: A letter informs us that Blossom week will be from March 20-27 and Blossom Day March 27.

Southern California

Cabbage is now going out of the Fullerton district in carload lots.

J. B. Neff of Anaheim has a force of men grafting over several hundred walnut trees.

The city trustees of Redlands have accepted plans for extensive roadside ornamentation.

The Farmers Institute train is making its first visit to Southern California this week.

Sandhill cranes are doing great damage to grain in the west end of Antelope valley.

Arlington Heights Fruit Company recently forwarded a car of oranges to London, England.

The Coachella valley claims it will have cantaloupes at least a month earlier than last year.

Smeltzer, Orange county, is shipping largely of Globe artichokes to the Los Angeles market.

Orange county celery campaign is practically closed and shows a shipment of about 1500 carloads.

One farmer at Thermal, Riverside county, is sinking a well 1000 feet deep, for an irrigation supply.

The work is going ahead rapidly on the survey of the canal from the Colorado river to Coachella valley.

After many troubles with the veterinarian of Orange county, the Board of Supervisors have voted to discontinue that office.

The number of poultry in Southern California is said to have greatly decreased during the past year, owing to the high prices of feed.

Coachella cabbage growers are pleased with returns being received for this season's output; $40 and upwards per ton has been netted.

The Cawston Ostrich Farm at South Pasadena is transferring its largest producing farm from Orange county, to Perris, Riverside county.

The beet fields about Santa Ana, of which about 4,000 acres are planted, are making an excellent showing. The company supplied the farmers with over 100,000 pounds of seed for this year.

Notwithstanding slightly reduced prices for oranges many orange groves in the vicinity of Riverside have been sold recently. One real estate company reports the sale of orange property aggregating $100,000.

An Antelope valley orchardist has an eight year old apple tree which gave to him last year 1200 pounds of apples. If he had an acre, each bearing as well as this tree, it is estimated it would net him $3816 per acre.

At a recent meeting of the directors of the Santa Ana Valley Walnut Grower's Association, A. C. Tiede was elected secretary. Association shipped one million, five hundred thousand pounds of nuts during the season, which brought the growers 10½ cents.

Prof. Ralph E. Smith of Whittier is the subject of a two page article in a recent Saturday Evening Post. The discoveries which Prof. Smith has made in his lemon rot investigations which have been of such great benefit to the citrus interests are particularly referred to.

The Coast

With wheat at $1.20 and going up Inland Empire farmers are highly elated.

Portland reports that horses are higher in price and scarcer than for years.

A large colony of people from Iowa has been established at Wenatchee, Wash.

The Portland horse and cattle sale will be held this year from April 26 to May 1.

One planter near Portland, Ore., will make a setting of 225 acres of walnuts this spring.

The largest dairy ranch west of the Rocky Mountains is said to be located at Rosalia, Wash.

Oregon hops are looking better and it is hoped the 10 cent price will soon be reached at Portland.

The highest temperature at Phoenix, Ariz., during February, was 77 and the lowest 32 degrees.

Farmers at Juliaetta, Idaho, are engaging more and more in the culture of beans and corn as staples.

Ranchers in the Yuma Valley, Arizona, are planning to plant large crops of barley this spring.

Ranchers near Ephrata, Wash., are having success with the irrigation of large orchard tracts from wells.

Many beneficial birds have been slaughtered near Rosalia, Wash., by poison placed for ground squirrels.

Feed barley is selling at $1.75 per hundred at Grangerville, Idaho, the highest point ever known at that section.

Fall sown wheat at Palouse, Washington, as fast as uncovered by the melting snows shows an excellent condition.

Washington's birthday was celebrated in Portland, Oregon, by young ladies planting rose bushes along the streets and in the parks.

Engineers of the Great Northern Railway have completed a survey in eastern Washington which will open up much new fruit country.

University of Idaho Demonstration Train has been granted a large audience at every point, and is giving general satisfaction to the farmers.

State Board of Horticulture of Washington is concerned over the appearance of brown-tail moth which has appeared in sections of Marion county.

The Yuma County, Arizona, Commercial Club has forwarded a memorial to Congress asking for the dredging of the Colorado river from Yuma to the Gulf.

The big Laguna Dam a few miles above Yuma across the Colorado river is almost a mile long. The entire dam will be finished, it is now estimated, by April first.

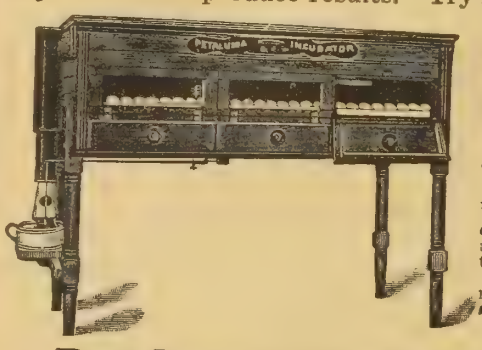
A so-called "rainmaker" at Moro, Ore., has more nerve than our common California one, for in this case he wished $15,000 to carry on the season's work in one county.

The first fruit growers' demonstration train to be operated over the line of the Northern Pacific in Washington ran last week, starting from Kennewick and ending at Ellensburg.

Don't Forget Quality

MIDLAND Poultry Food

Is based on ***quality*** and it is quality in Poultry Food that produces eggs. ***Cheap filler*** and ***cheap grain*** will ***not*** make eggs. ***Midland Poultry Food*** contains only the ***choicest*** cereals and animal food the market affords. You ***can't*** afford to try and be successful and not get results. ***Midland Poultry Food*** will produce results. Try it and see. $1.95 per sack



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Remember, we make a hot water machine. One of the ***best hot water machines*** on the market.

Send for our Illustrated Catalogue.

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We have the MOST COMPLETE and up-to-date supply house on the Pacific Coast. We are agents for the Petaluma Incubators and Brooders, Midland Poultry Foods, etc. We have everything required for Poultry, Stock, Dogs and Birds. Send for our catalogue; it is free.

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If You Are Not Satisfied Try Excelsior

If Your Dealer Don't Keep It Write Us

A balanced ration for the baby chicks. We have been manufacturing Excelsior Chick Food for years, and it is made to meet the conditions of California. Those who feed Excelsior have no trouble raising strong, healthy chicks.

We also make ***Excelsior Egg Food*** and Excelsior Scratch Food; nothing better. For particulars write

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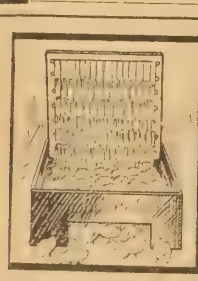

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watches the temperature in your machine **Day** and **Night** and if for any reason it changes the instrument will call you by **Automatically** ringing the warning bell. Bells may be located at any place, such as in the Barn, the feed house and in the Dwelling. Price Complete $5. Satisfaction Guaranteed. Address nearest Agent, or

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Profit in the Poultry Yard

By Mrs. Frank Metcalf

We solicit short articles of a practical nature from the fancier and utility breeder, giving their experience with poultry. All inquiries pertaining to feed, management, disease and its prevention will be answered through these columns.

METHOD OF POULTRY RAISING.

(A continuation of last week's article)

THE question of how best to hatch our chicks comes next; the farmer's wife has little time to raise chicks, and must consider whether she will use incubators or hatch with hens. I am old-fashioned and like hen-hatched chicks, and believe they make the best layers and longest lived birds.

I know Biddy is tricky and notional when it comes time to sit. I know her failings well after many years' trials with her, but I also have had trouble with incubators, yet incubators have their place.

It is pretty discouraging to have a hen leave her nest, but it's a heap more provoking to run a machine three weeks and have a few miserable little cripples for your trouble, too.

A good hatch where a fair percent of fluffy little babies come to the glass doors to greet you, is a sight to repay you for all your bother for the time being, but a few weeks later, somehow your interest begins to wane, and they are neglected a little too long some fine evening, and you will find them bunched, and a dozen or two dead. Or the lamp may explode and burn chicks, building and all. I nearly lost my life in trying to save 75 fine early chicks in one such fire, but my boy came to the rescue and saved me with the loss of his eyebrows and a very badly burned hand, but saved very few of the poor little chicks. But incubators we must use if we raise many market chickens, for the incubator will work when the hen will not. There are many good makes to be had, and any one can succeed who will simply follow directions.

Brooders.

Fireless brooders are the kind to use in this country, and are on the market, but a jug of hot water in a well packed hay box on the plan of a fireless cooker, will bring a lot of little chicks through a cold spell very comfortably. A brooder house should be large enough for one to go inside to work in. I used to have little buildings six feet square, made of old boards, with tight board floors, and covered with tarred paper, in my old Ohio home.

I had a shelf of boards two feet wide across one end, with a curtain in front and a safety brooder stove underneath, with drum and pipes for heating, but would now simply use a hay box in cold weather, filling the hot water jug twice in each twenty-four hours. In such a building I have raised 100 chicks nicely, marketing the surplus cockerels very early, allowing the pullets more room. One window and one door should be put into these houses, with extra windows of screen wire for warm nights; canvas or glass for cold weather. In summer this building should have a shady place, or the chicks will overheat, which is fatal.

Food.

Start chicks on the prepared chick food, but as they grow older mix your own food and feed liberally, but not wastefully. A good mash mixture is: bran 25 pounds, cornmeal 25 pounds, middlings 25 pounds, alfalfa meal 8 pounds, bone meal for chicks 10 pounds, meat meal 10 pounds. Mix with milk whenever possible, or feed dry, or mixed to a crumble mass with water. The dry stuff should be dumped upon a floor and shoveled over several times to thoroughly mix it, then kept in boxes or bins. This is also a good egg ration.

Green feed must be provided for, and a good way is to sprout barley, wheat or oats. It is prepared by soaking the grain over night in a tub of water, then spread about three inches deep in boxes that will leak, and cover with bags. Sprinkle well twice a day, and stir once a day to keep it from burning. In about a week it will form a mass of green sprouts and white roots which are greedily eaten by old or young fowls, furnishing them with fresh succulent feed at very moderate cost.

A slatted run in which to put the chick food where the older birds cannot get it, is a necessity on the farm for the chicks must be kept growing and a trough of cracked corn and wheat should be kept where they can run to it at all times, besides the mash food. I like gallon milk crocks for drinking vessels, as they are easily kept clean and don't upset readily; a piece of board should be put in each one so chicks will not drown, an old round churn lid being a fine contrivance.

Mites.

I use gallons of distillate since I have learned how it destroys mites. I drench the nest boxes, and the coops in which chicks are kept with hens, the brooders and houses, spraying it freely into all cracks and crevices where these vermin hide.

Mites breed in dark and hidden places like bedbugs, and come out at night to annoy the birds, but are invisible daytimes like their disreputable cousins. Anything to destroy them must be used freely, to penetrate their dark abodes. Boiling water will do this but it takes so much and cools so rapidly that it is unreliable. Once get a building thoroughly soaked with kerosene or distillate and mites stay away. Body lice are the worst enemy we have to deal with, and I believe more chicks are lost by head lice than any other cause, when hatched with hens. All during the time the hen is sitting, she should be kept dusted with sulphur, which is cheaper and more effectual than Persian insect powder, which is not always fresh. When the chicks are taken from the nest, take fresh lard and grease them well on top of the head and around the neck, under the wings and between the thighs, treating the hen in the same way. Nearly always from one to a dozen head lice will be found on each chick, which would soon sap the life blood and cause the fatal sleepy sickness we hear so much about.—Mrs. Frank Metcalf.

120 ACRES OF FOWLS

Nearly everybody interested in poultry knows U. R. Fishel's 120-acre Poultry Farm at Hope, Ind., where he breeds thousands of White Plymouth Rocks—more than any other man in the world. Mr. Fishel's great experience makes his opinion most valuable to poultry raisers. He writes us as follows: "*After using Incubators for nearly 25 years* I must say that your latest pattern machine is the most complete hatcher I have ever tried. Last year we reared more chicks than ever before, and they came out stronger and grew faster. I am mailing **PHOTOGRAPH OF THE COCK "Prince of Indiana" which I SOLD FOR $800.00**

He was Hatched and Reared in Cyphers Machines

Mr. Fishel also writes us about our New Fire-Proofed Insurable Incubators. This is what he says: "*Your fire-proof improvement I consider has saved me an expenditure of something like $500 for an incubator house.*" HE KNOWS! He knows that by using our New 1909 Pattern Incubator he not only gets the World's Best Hatcher but can get insurance without building a special incubator house to hold it. He can use it in his residence if he wants to.

Don't you also want to know all about this Superior Incubator—the one he uses—the one that has helped make him the leading breeder of America in White Rocks? If you do, just write for our Big Illustrated Catalogue of 212 pages, containing chapters on poultry raising. If you mention this paper when writing, we will send it to you Free of Cost—postage paid. Address nearest office.

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Quality S. C. White Leghorns, Mammoth Imperial Pekin Ducks, Golden Sebright Bantams, Black Tailed Japanese Bantams. All prize winners this season. Write for prices.

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Prize winning stock never beaten at any poultry show.

$1.50 Per Setting

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Eggs for hatching. We fill orders promptly from our selected matings of great egg-producing birds, at $5 per 100, $45 per 1000. At both Los Angeles Shows, 1909, our Leghorns won on firsts, silver cup and special prizes, and more ribbons than all competitors combined. Eggs from prize winning pens $2 per 13.

San Gabriel car to Masonic Home; two blocks south to ranch.

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Have pure bloods. Eggs for hatching. Hatching chicks a specialty.

S. C. White Leghorns Chicks 10c. **Barred Rocks** Chicks 12c.

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Mr. Walter Hogan pronounced my standard bred "Fishel" White Rocks the best laying type he ever handled. 220 to 250 capacity. My White Leghorns are winning with 220 to 270 capacity. Mated for egg production. My birds have been selected for years for laying. Eggs $2.00 for 15, $5.00 to $10.00 per 100.

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Five Pens Prize Exhibition ***Rhode Island Reds.*** Two Pens ***Columbian Wyandottes.*** Won Cup, four specials, five ribbons on five birds at late Show. Eggs—Reds $1.50, Columbians $2 for 15. ***A. B. WHITE***

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The 200 egg kind—the all white variety—the best all around fowl for farm or town purpose. Eggs from the best strains reasonable.

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Write for circular. Ranch, Clarence Ave. and San Gabriel Blvd., one mile north of end of San Gabriel car line **San Gabriel, Cal.**

POULTRY QUERIES.

Breaking Up the Sitter..

Will you please tell me the best way to break up a sitting hen. Also why cannot my chicks (set under a hen) get out of the shell? And what shall I do to help them out? Shall I crack the shell?—F. D., San Gabriel.

I find the kindest and best way to break up a sitting hen, is to shut her in a coop by herself, or with others of like disposition, in which there is no nest, nor material for making one. Some use coops with slatted floors with good results, but I like better a small yard to shut them outdoors daytimes with some loose ground to scratch in. Feed and water them well for a few days and return to the yard, and usually they will not go back to the nest, but in some cases a second or even a third confinement will break them of their yearning for a family. This yearning is natural, and should not be met with harsh treatment, but only the kindest methods used to thwart the mother instinct which God has implanted.

The best way to help little chicks out of the shell, is to take a sharp-pointed pair of scissors, and very carefully open the air chamber end of the shell and if the chick has broken the skin, it will usually be strong enough to get out itself, but if the skin is not broken a very delicate touch is necessary to open that, and after the chick gets air, it can usually break the shell unless extremely tough, in which case crushing it ever so carefully in the hand will loosen the membranes surrounding the chick so one can peel the shell quite off the little prisoner, and often save its life. Sprinkling the eggs a day or two before hatching time often helps the chicks, using warm water.—Mrs. F. M.

CHAT.

I am a subscriber of the Cultivator, and being a full-fledged chicken crank on anything in that line, I must say the Cultivator is a very interesting paper for us all.

Now about poultry raising for profit. I would like to hear from those who are receiving a profit and all about how much it has cost for feed and the results from the number of fowls fed, and the length of time. Give us the figures and explain briefly. Don't fail to tell what variety of fowls you have. I tell you it will not be overlooked by any of us who are trying to raise poultry for profit.

I fed 27 head of birds through the month of January, 14 of them laying hens. I received 26 dozen eggs. I deliver to my town people, private families, and receive the same price as merchants do. My eggs brought me $9.75. I paid just $3 for feed and my hens had a free range on green feed. My birds are a fine strain of Black Minorcas.

I feed a bran mash in the morning, early, and a handful or two of beef scraps in it. At night I feed Kaffir corn one time and wheat the next. I never have sick birds. Some one is always saying, keep your hen house clean and keep this and that here and there, and so much shade and so much sun, and have your house so and so, and be sure to keep grit and fresh water by them. Well, yes, we sure look after the details all right.

I could write you a lecture a mile long on poultry raising, for I have been in the work for a good many years. But now let us give results and figures. That is what will help us altogether. Then you will see some chick chat that will cause us all to sit up and take notice.—D. W., Rialto.

Special Prices

Today we have on hand a few of the latest models of the "Old Trusty" Incubator, just as long as they last you can have them at the lowest prices ever made by any Incubator company in the West. We wish to get our money out of them quickly, we will hold any machine you wish to select if you send a $2 deposit, these machines will not last but a few days at these prices. Now is the time to BUY and save many dollars while you can. This ad may not appear again. If you do not have the catalogue, 148 pages, send for it. We pay R. R. freight in Cal. 120 Egg Size, $10.90, 165 Egg Size $12.90, 240 Egg Size $15.90. These machines are all complete with all attachments ready to run.

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Read what others say:

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Ask your neighbors, for there is more of "West Coast" sold in Southern California than all other kinds put together. If not sold by your dealer send us $3.50 and we will send a 100 lb. sack, freight prepaid within 300 miles.

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25 Full Blood Bronze Gobblers at $3.50, $4.00, $5.00, $6.00 and $7.50 each.

Brown and White Leghorn Hens at $8.00 and $9.00 per dozen.

Setting Eggs from Barred Rocks, Brown and White Leghorns and Bronze Turkeys at $1.00, $1.25 and $2.00.

Pin this ad up.

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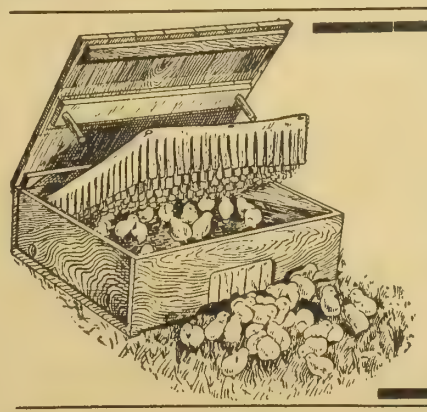

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So. Cal. Agents for Petaluma Incubators and Brooders and Midland Poultry Food.

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EGGS FOR HATCHING—WHITE LEGHORNS—MITCHELL STRAIN

Large birds, heavy layers, bred for highest utility only. Order book now open for season 1909

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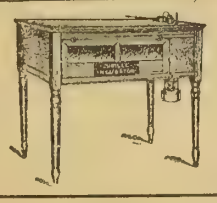

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Thousands of Chicks

Hatching every week, send today for new 1909 Baby Chick Catalog, tells all about our 19 kinds of chicks, ducks, turkeys, etc. Also about our low prices on all kinds of hatching eggs. We ship chicks and eggs everywhere safely. Now is the time to order. We supply 50-chick "SUCCESS" Fireless brooder at $2 and 150-chick brooder at $4, if you order it filled with chicks.

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The Only Original Dry Chick Feed for Baby Chicks

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Write for Prices, Booklet, or name of nearest Agent.
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Make money for poultrymen no matter what the results have been with other machines, every Mandy Lee Incubator is furnished with a

New Idea Moisture Gauge

ASK FOR FREE CATALOG

Which registers the amount of moisture during the entire hatch and enables the operator to have the correct amount. Moisture accurately handled in an incubator is a successful hatch insurance.

We are so well pleased with the Hygrometer purchased from you some time ago that we want eight more—one for each of our machines.

D. B. MENTZER, Propr. Mentzer Dutch Farm, Waynesboro, Penn.

Actual test made by the I. X. L. Poultry Farm, Schenectady, N. Y., with the Mandy Lee Incubator:

No. of Eggs Started.	No. of Eggs Tested Out.	No. of Chicks Hatched
May, 1908.....140	10	126
June, 1908..... 93	9	82
Jan. 1909..... 40	8	30

HENRY ALBERS CO., 534 So. Main St., Los Angeles

WHITE LEGHORNS OF QUALITY

Bred from best American and Imported stock—for beauty and great egg production. Won more ribbons at Oakland's great show than any four competitors.
Stock, Eggs and ***Baby Chicks*** for sale. Also eggs and chicks from ***High Class Buff Orpingtons***, (Cook strain.) Write for descriptive circular.

The Model Poultry Farm
Box H, Irvington, Cal.

CARE OF THE CHICKS.

Given vigorous parentage, a caretaker who has a fair share of brains and common sense, and some knowledge of, and love for, the poultry business, there should certainly be a far larger per cent of the number of chicks raised that are hatched than is usually the case. While there must be some variation of the methods employed in rearing chicks by use of brooders from that used where chicks are raised with hens, the main conditions must be the same, including warmth, cleanliness, freedom from vermin, proper food and drink, and plenty of exercise.

For first 24 to 36 hours after hatching we allow chicks to remain quietly under the hen or in brooder, only satisfying ourselves that they are warm and comfortable. We follow the method of dry feeding almost entirely, as the mortality from bowel trouble is much less. For the first few days we feed only dry bread crumbs and pin-head oatmeal, giving water or fresh sweet milk to drink, in vessels that exclude both dirt and bodies of little chicks, as to get thoroughly wet while so young is almost sure death to them. We also scatter sand on the feeding boards and keep a dish of finely ground oyster shell and charcoal where they have access to it all the time.

After chicks are a week old, we feed millet seed, cracked wheat, dry bran, buckwheat and some of the prepared chick foods, also a little chopped lettuce or onion tops, or any vegetable that they seem to relish. The millet and other whole grain is to be thrown in litter to be scratched for if too early to give chicks free range.

At about the third week we begin to feed a little cooked lean meat and ground bone. This must be fed very sparingly at first, and the quantity fed increased as it seems to suit them. After chicks are a month old I feed grain in variety, wheat, oats, corn, etc., and keep up the milk for drink. Then if you provide a dry comfortable place for them to roost and to take shelter from storms, you may relax your care and allow them to hustle for themselves the greater part of the time.

To lessen labor in feeding, I place the coops containing the chicks in a circle and in the center place a light slatted coop covered with wire netting, and throw the feed for chicks in that. This is economical as well as time saving, as the hens are debarred from helping themselves from feed intended only for the growing chicks. The hens which I keep confined in coops all the time can be fed morning and evening while the chicks are eating.

In using a brooder, the chicks must be carefully watched to see that they are comfortable. Some brooders are so defective in construction that it is almost impossible to keep a proper temperature at all times, then after chicks have been well chilled or almost baked, the most dreaded ailment, bowel trouble, appears. The feed is changed to remedy this condition, but before the cause is located a great many poor "baby biddies" have "turned up their toes." With a proper regulation of heat, dry food plenty of grit and fresh water or milk to drink, the chicks are contented and thrifty, and do not have lice to contend with as do those reared with hens. However, if the hen is well dusted with good insect powder two or three times while sitting, she will be reasonably free from lice, and by going over the chicks once a week for a short time the lice will have to look for other quarters.

Little chicks should be fed often—perhaps half a dozen times a day—not too often the first two weeks, gradually decreasing number of feeds a day until at five weeks three times a day is sufficient. To feed a little at one time, but often, is a good rule for young chicks, as their digestive organs are easily overtaxed.—Commercial Poultry.

POINTERS ABOUT ROOSTS.

Have the roosts on a level. If some are higher than others, the top roost will be overcrowded, inducing restlessness and quarreling, while the lower roosts will be almost empty. A smooth, stout board, three inches wide, is the size I prefer, though small poles of sassafras are not pleasant to mites. If poles are used, I would advise getting large ones. Hens do not need to twine their toes around the roost in a house, as they do when roosting in trees.

The roosts should be strong and free of slivers for two reasons; the slivers often cause sores on the chick's feet, and are such fine harbors for mites. But for ease in removing and cleansing they should be light in weight. Through the winter the fowls remain several hours on the roost so it is best to have them as comfortable as possible. It is much easier to have smooth, strong roosts of the proper height than it is to fight mites, or to doctor injured feet, so from a selfish view it is best to use some care and time in fixing them.

Any lightweight hen wants to roost high, and can do so without injury to herself, so if your flock is lightweight, have the roosts on the high order. This will satisfy the hen, and will result in no trouble. If, however, the hens are heavy, have the roosts very low. Bumblefoot is caused principally by the chicks flying down from the roosts. With the heavy ones, if the roosts are high, the force with which they alight bruises the foot. This every-day bruising will cause the bumblefoot, stone bruise or felon on the bottom of the foot, and while it can be cured, it is often a tedious cure; then, the chicks are no profit while their feet are sore.

FEEDS FOR CHICKENS.

The question is often put to us, "What is the best food for chickens?" To this we can but reply: A variety of grains, giving about a third each of grain, green and meat food in the course of the day. When we are asked, "What do you feed," we feel with Shakespeare, "It is easier to tell twenty what were good to be done than to be one of twenty to follow our own teaching."

As a matter of fact the owner of a farm flock cannot feed his chickens economically without using what he has on the place. To buy a variety of grain is not always possible. We get good results from feeding what we grow. Possibly if we were compelled to buy everything we feed the prepared foods would give us better results, but the gain we make under general farming conditions would not pay for the increased cost of the feed.

This year we grow two mixed crops, one of barley and oats, the

other of wheat and oats. The chickens seem equally fond of either mixture, and we alternate the feeding of these grains. We also have a supply of these mixtures ground for cow feed. To the ground feed we add some corn meal and fill hoppers to which the chickens have access all the time. In other compartments of the hoppers we have dry bran, charcoal, oyster shell, and beef scrap.

We have a wire pocket in the houses which we keep filled with alfalfa hay. This hay is the last cutting and very short, making the finest of feed for the chickens. When we did not have the alfalfa we used clover hay, but the chickens prefer the alfalfa. As long as the field was green the chickens would almost live in it.

Our evening feed through the winter is corn. Whenever we have milk to spare the chickens get a panful; the rest of the time they get warm water. With this method of feeding we get about a third egg yield each day through the winter months from the large flocks and a half or better from the small. We find that the chickens which are housed the entire winter lay as well as those which are allowed to range through the day, provided the supply of food is kept up, especially the green food, and also provided that the litter is not allowed to become packed so that the hens can not scratch comfortably in it. We encourage exercise by shaking up the litter, giving fresh litter frequently, always having something to scratch for. Hens will not become over fat from eating the grains found under six or eight inches of litter. We use on our table porridge and bread made from grinding our own wheat, and sifting through an ordinary sieve. The coarser part of this wheat is saved for feed for little chicks; if we get more than we think we care to save, we scald a portion with hot water or milk, salt lightly and give to the hens for breakfast on a cold day. Sometimes we scald oats in the same way, and as a relish we parch corn in the oven for the chickens.

What one feeds is of less importance than how it is fed. If the chickens have enough to eat, and are given green and meat food as well as grain, they will pay well for their board though they may lack in a variety of grain.—Wallace's Farmer.

Pease Bros. Furniture Company of Los Angeles, are now manufacturing their own mattress under the name "Slumberland." The mattress is fully guaranteed, they prepay delivery charges to any point on the Pacific Coast, and they are shipped subject to approval. This mattress is advertised elsewhere in this issue.

THE OLD RELIABLE REMEDY FOR HORSES—USED AND ENDORSED IN OVER 100,000 STABLES.

Tuttle Elivir Co., Gentlemen:—I had occasion to use your Elixir on one of my horses last winter and I was very much pleased with the effect produced. The animal had fallen and bruised her leg severely, and considerable fever had set in. The Elixir was applied a few times and she recovered very quickly and completely.

I consider it the best remedy I ever used for bruises and cuts and for any other use where a liniment would be required.—M. L. Wright, President and Gen'l. Manager of the California Mutual Live Stock Insurance Assn., Los Angeles. Cal.

The March Century is notable for the number of its articles on public interests. The new President is given a prominent place in its pages, with a study, published anonymously, of his interesting personality; a picture, sketched by James A. Le Roy, of his character and methods as revealed by his work in the Philippines; and a first publication of two letters of Mr. Taft, one declining to be considered for the presidency of Yale, the other accepting his appointment on the Philippines Commission. In addition the reminiscences of "Rutherford B. Hayes in the White House" and the story of "Our Presidents Out of Doors" make the issue decidedly a "White House Number," as it is called.

The rapid growth of the business of Pomona Manufacturing Co. of Pomona has compelled it to increase its manufacturing plant. This concern has built new quarters for its foundry which is a new concrete building. This gives more room for the manufacturing plant which is one of the best in Southern California. If you are interested in deep-well pumps, you should write for a catalogue, which will be sent free if you mention Cultivator.

The Harvey Spring Co., Racine Junction, Wisconsin, has issued a folder setting forth the advantages of the Harvey Bolster Spring. This spring results in great saving to wagons and with many products, especially fruits, gives a saving in the load hauled. This spring certainly gives an advantage to every farmer using it. This folder will be sent on request if you mention the Cultivator. You should get one and read it carefully.

Smeltzer, Orange county, has been shipping cabbage at the rate of about a car a day.

Some contracts are being made for next year's hops on the basis of 9½ and 10 cents.

Polly Oil

February 6, 1909.

Dear Sirs:—

I have used your Poultry Tonic for a long time and think there is none so good. But you have one remedy, POLLY OIL, I do not feel you know its worth. I had one little sample bottle given me a few weeks ago. I used it on two cases of swell head and it stopped the swelling right away. I had one pullet on which the lump had stayed for over two months, her bill having grown crooked. but as she was a pet I could not have her killed, but could not drive the lump away until I got the sample of Polly Oil. It then commenced to go away, and in a few days it was nearly gone. I have cured every one since that showed any signs of such trouble. I have used all I have and do not want to be without it.

Very respectfully,
FANNIE L. E. WEBBER,
Pasadena, Cal.

If not sold by your dealer send the price, 50 cents, and we will send you a bottle, prepaid. WEST COAST MILL, Los Angeles, Cal.

WATER GLASS FOR EGG PRESERVING

Why sell eggs at 15c a dozen? Eggs kept in this water glass will keep 12 months or more and are as fresh as new laid. Sold in 25c tins for 150 eggs and $1 tins for 1200 eggs. Egg preserving baskets with cage and cover $1 each. There is only one kind of water glass suitable for this purpose and it is on sale at West Coast Seed Co., 115 West Seventh St., Los Angeles.

Croley's

High protein MEAT SCRAP.
Just what the name implies.

A Meat Scrap High in Protein

Why Not Use the Best

Manufactured by

Geo. H. Croley

Poultry Supplies

631-637 Brannan St. San Francisco, Cal.

Los Angeles Agents. Globe Mills, 925 East Third Street.

"Chicks well hatched are half raised"

CHICKS

We can furnish you strong, healthy day-old chicks from selected utility stock. No. 1 White Leghorns, $9.00 per 100; $25.00 for 300; $40.00 for 500. Special White Leghorns, $12.00 per 100; $34.00 per 300; $55.00 for 500. Brown Leghorns, $10.00 per 100. Black Minorcas, $10.00 and $12.50 per 100. R. I. Reds, $12.50 and $15.00 per 100. Barred Plymouth Rocks, $12.50 and $15.00 per 100. In lots of 50 add one cent each.

San Jose Hatchery

395 E. St. James Street., San Jose, Cal.

Henry Langenschwadt, Mgr.

$100 Cash Free to You

I sell "SUCCESS" Incubators on trial. I guarantee to refund the money after you use the machine if you do not find them to be exactly as I claim. No other company in this state will do this. Up to this date March 15th, not a single customer has asked for his money BACK either on a "SUCCESS" INCUBATOR or a "SUCCESS" Brooder. I will give you $100 cash if you prove this statement is not true. Is this a good record? Does it not prove that these machines are what we claim them to be? Does it pay you to spend from $5 to $20 more than we ask for an Incubator that will positively give you a good hatch EACH and every time. Some incubators hatch good once in a while, ours hatch EVERY TIME if the eggs are reasonably good. I make Fireless Brooders that will raise every healthy chick. I handle over 240,000 chicks yearly through the Pioneer Hatchery, I know how to BROOD them. Send for FREE catalogues and circulars.

E. E. McClanahan

112 E. Eighth Street

Los Angeles, Cal.

Incubators

A good chance to get a small machine at a big bargain price. We are overstocked with the small size Improved Pacific, 62 egg capacity. Regular price $10.50, now $7.00 till stock is reduced. Not old, second hand machines, but brand new and first-class in every respect. No better made. Hot water heating; best Sheer Regulators; everything the best. Catalogue free.

West Coast Seed Co.

115 W. 7th Street, Los Angeles

All the best POULTRY SUPPLIES and

Seeds That Grow Just Sow

Baldwin's White Leghorns

Have Won Again in the Hottest Competition at the Leading Shows on This Coast

San Jose, Nov., '08, we won ***three 1sts, best display, best pair*** and ***6 other*** prizes.

Petaluma, Dec., '08, ***three 1sts., best collection,*** $50.00 Challenge Cup for best ***Cock, Cockerel, Hen*** and ***Pullet,*** with ***5 other*** prizes.

Heaviest ***layers***
Greatest ***payers***
Any can boast.

The ***prize takers***
And ***coin makers***
Of this coast.

Our Specialty, Heavy Laying, Standard Bred White Leghorns. We hatch more (from Sept. to May), cull closer, and have more high-grade birds left than any other breeder. 3000 birds now. Stock, any size, for sale. Eggs $1.50, $3 and $5 per setting, $6 and $10 per 100, $55 per 1000. Send for price list and ***free booklet.***

1st Prize Hen San Jose and Petaluma, 08.

Frank E. Baldwin The White Leghorn Specialist

46 Washington Avenue, San Jose, Cal.

Bee Supplies

For the Pacific Coast

We are the exclusive agents for the **A. I. Root Co., Medina, Ohio.** Our hives are manufactured from selected California Sugar Pine. Branch houses at Los Angeles and Elk Grove, Cal. Write for Catalog. We also manufacture orange, fruit and packing shook, drying trays, etc. Beeswax wanted.

Madary's Planing Mill,

Fresno, California

Mercer's Weed Process Foundation

If you would be successful with your bees use Mercer's Weed Process Foundation. Absolutely the best on the market. Send me your beeswax to make up.

H. J. Mercer, 948 East Second St., Los Angeles, Cal.

Dealer in All Kinds of Beekeepers' Supplies

The Schmeiser Portable Automatic Derrick

The State is Using a Number of These Derricks on the Experimental Farm, at Davis, With Great Success.

No Guy Ropes Required

Any kind of a fork or a net may be used, whichever may be desired.

You can not afford to be without it. Will pay for itself the first season, every year after that doing your work for nothing. Write for descriptive circular and we will tell you how it can be done.

Schmeiser Mfg. Co.
Davis, California

General Agriculture

THE DURUM WHEATS.

THE durum wheats have been grown in this country in insignificant quantities for about thirty-five years, but until 1900 there was no organized effort to induce the extensive cultivation of these grains. During that year the Department of Agriculture sent a representative to the durum-wheat sections of Russia to investigate the conditions favorable for durum-wheat production.

As a result of this investigation a large number of varieties were introduced by the Department of Agriculture. They were distributed to various stations of the Great Plains area, where the conditions are very similar to those found in Russia and Algeria, from which latter country a number of varieties have also been introduced. At first these grains were received with but little favor, in spite of the fact that they produced excellent yields and exhibited remarkable rust-resistant and drought-resistant qualities. Their rust resistance is especially important. This was particularly noticeable in the rust epidemic of 1904, when so much damage was done to the common varieties. The later popularity of durum wheats in this section is largely due to their great resistance of rust in this epidemic. They are, in fact, coming to be considered as the only reliable spring varieties to grow in sections where rust is frequently prevalent. Their drought-resistant qualities are constantly being brought to notice. In Texas, Montana, California, Utah, and in many other sections where severe drought occurs they are outyielding all other spring varieties and in many instances are rivaling some of the leading winter grains. It has been found that these wheats are particularly adapted to the Dakotas. About 80 to 85 per cent of the durum wheat produced in 1907 was grown in this belt.

Growing Popularity of Durum Wheats.

The opposition to the durum wheats, especially among farmers, is rapidly disappearing; in fact, these wheats are even being grown in sections to which they are not adapted and where they should not be planted. They have been taken to Minnesota, a section wholly unsuited to their production because of the high precipitation and the excessive humidity of the atmosphere. They are preeminently grains to be grown where the summers are hot and the atmosphere dry. The farmers of Minnesota, however, have come to value the durums because of their rust resistance rather than because they are otherwise adapted to that section. In some parts of the state they are displacing Fife and Bluestem. For this reason the millers are inclined to oppose them very vigorously and in this they are fully justified. The U. S. Department of Agriculture has never recommended the growing of durum wheats in the humid regions.

The durum wheats became prominent commercially in 1903, when 6,000,000 bushels were produced. Their production has steadily increased up to the present time. The crop of 1906 was between 40,000,000 and 50,000,000 bushels; that of 1907 was even greater, notwithstanding the unfavorable crop conditions in the Dakotas. One of the striking features in favor of the durum wheat is the growing demand for it in both foreign and domestic markets.

Of the crop of 1906, some 6,000,000 to 10,000,000 bushels were consumed in the mills of Minneapolis in blending with other wheat; 20,000,000 bushels were shipped to foreign markets, some of it going to Russia, whence it was originally introduced; some 5,000,000 bushels were used for seeding the crop of 1907, and the remainder was used by small mills throughout the country. Before the harvest of the 1907 crop the 1906 yield was entirely consumed. The 1907 crop is going even more rapidly. One man, representing a foreign firm, purchased last December 1,500,000 bushels for export. This is the largest quantity ever bought for export trade at one time by one man.

The difference in price between the durum wheats and the No. 1 Northern is becoming smaller each year. Durum wheat now sells for about 2 cents more than No. 2 Red Winter on the Chicago market. The attitude of the northwestern grain journals regarding durum wheat is rapidly becoming less antagonistic, and even the millers are beginning to concede points in its favor. As the millers perfect their methods for milling these wheats they invariably recognize the merit of the durums, especially as blends with the softer varieties and as a source of semolina, or "macaroni flour." It seems certain that the durum wheats are destined to become the leading spring varieties throughout the whole arid West.

PLOWING THE ORCHARD.

(Continued from Page 309.)

furrow not to make it at all deep. We do not in the wet weather object to having a dead-furrow to hold the water away from the trunks of the trees. This dead-furrow in the center is often filled with water for several days at a time in very wet weather.

10:—No, we prefer to keep the weeds off by hand as there are no active roots in this space during the mature life of the tree. Coarse ditch sand is plentiful in the creek on the ranch and we use it at the base of the trees as it acts as a mulch and helps to keep the ground soft without much cultivation.

11:—No, except the same result may be secured in the way we like to manure the vineyards, by putting the manure in between the rows in a trench plowed and V'ed out twenty to twenty-four inches deep, filled to within eight inches of the top and then the earth thrown over the mass by the plow.

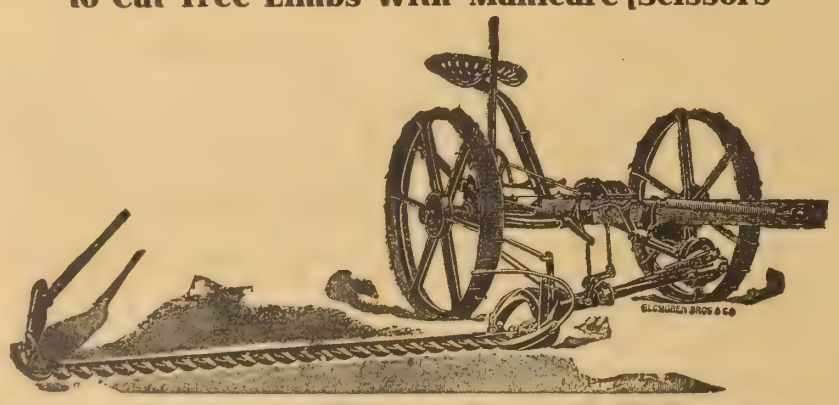
12:—The plow, while it does make plow sole and has to be used at varying depth, has not been superseded in our neighborhood. We all had it bad, this fever of cultivating with different kinds of tools and leaving the plows stand idle. We tried it with the result that the vines were less vigorous and gradually the plows came back into use. It is mighty hard to fool old Nature after all, with new tricks. To find out why the deep cultivating did not answer, we dug two pits just twelve feet apart to see what was the matter. These pits were three feet deep and about three feet square. The land that was cultivated only

Did You Ever Stop to Think

That the Lightest Looking Mower Is Very Apt to Cut Heaviest;

ALSO

That Only a Very Foolish Person Will Try to Cut Tree Limbs with Manicure Scissors



The New Standard Mower

All power in a Mower originates from the grip of the wheels on the ground,—the firmer the grip the greater the cutting power.

The 5-foot New Standard Mower weighs 825 pounds. The entire weight of the cutter bar (while cutting) is transferred through the suspension spring to the main wheels. The bar is neither pulled nor pushed,—it is carried—an exclusive Standard feature.

The power thus secured is transferred to the gearing through the mechanically perfect wheels, found only on the New Standard Mower. The gearing develops high speed without undue strain and passes the power to the knife. The knife works in our famous curved Cutter Bar,—the only frictionless knife channel made.

These are a few reasons why the New Standard Mower is the most powerful cutting mower made.

A folder giving full detailed description of the New Standard Mower and our other Haying Tools will be mailed free on application.

Newell Mathews Co.
200 North Los Angeles Street
Los Angeles, California

looked denser and was dryer and less mealy to the hand. It showed at twelve inches a denseness that was almost too hard to cut out readily. The other side of the drive where the same land was in an orchard that was plowed and harrowed in the regular way, the soil was moist and no dry streaks, and seemed mellow to the touch. Before we stopped plowing in the vineyard, both pieces had received exactly the same treatment and the same amount of manure. The two were only twelve feet apart and the difference was not noticeable before the change in way of handling in the growth of the crops. We then resumed the plowing of the vineyard and after the second year the normal conditions had come back. We again had pits open in the same spots when the soil conditions were the same as to moisture. Since then we have held by the plows.

One man in the neighborhood followed the using of the cultivators for several years longer. This was a company vineyard and then he was discharged for not securing results. The new manager went to plowing and harrowing and cultivating in the regular way and has held the position ever since. The vineyard looks altogether better and this man has held his job, so that evidently his employers are satisfied with the returns. One vineyard that was never properly cultivated until it was fifteen years old was sold very cheaply, as it was considered as only good for half a ton of raisins to the acre. The man that purchased it went to plowing and cultivating with wholesome vigor, the crops increased until it produced the second year close to two tons of raisins to the acre. The plow so far has proven the best tool; while I know it makes plow sole and is more expensive, still we have learned to handle that plow sole by plowing a little deeper the alternate years and by turning under humus to hold more even conditions of moisture, and we know this way does grow good crops. —M. E. Sherman.

COUNTY CONTROL OF TREE PLANTING ON COUNTY ROADS.

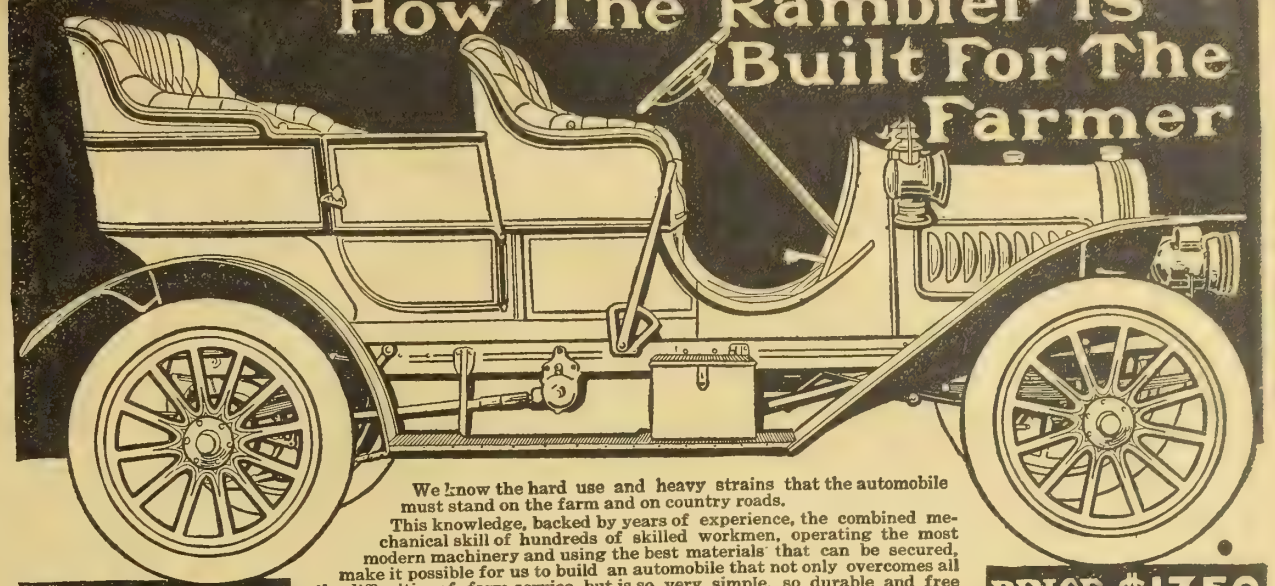
(Continued from Page 313.)

eign trees well suited for the purpose, which in a brief time would transform the general appearance of the country roads, where used. To have the country highways of California bordered with shade trees would add a distinction not yet secured by any country, properly supplementing her already distinguishing features, besides the constant pleasure they would give to travelers.

In the meantime, let neighborhood and village associations do what they can towards beautifying their immediate vicinities, by planting roadside trees, even if but a mile or two. Commercial organizations and improvement societies of our cities can well afford to give attention to beautifying the leading thoroughfares entering their towns. Redlands is already planning to plant the entire length of the street between that city and Highlands, which if properly carried out will give a splendid object lesson to other cities.

But the main object in writing this article is to direct attention to, and urge the importance and practicability of tree planting along our country roads, by the county governments.—J. H. Reed, Riverside.

How The Rambler Is Built For The Farmer



MODEL 41

PRICE $1350

We know the hard use and heavy strains that the automobile must stand on the farm and on country roads.

This knowledge, backed by years of experience, the combined mechanical skill of hundreds of skilled workmen, operating the most modern machinery and using the best materials that can be secured, make it possible for us to build an automobile that not only overcomes all the difficulties of farm service, but is so very simple, so durable and free from repairs that the cost of up-keep is below that of any other car.

How well we have built this car is best told by the service the Rambler is giving to thousands of satisfied owners.

One owner writes us:—"I spend less for oil and gasoline than the cost of feeding a horse." Another says:—"The cost of up-keep is no greater than that of the simplest piece of machinery on my farm." We have scores upon scores of such letters in the same vein, all telling the same story, all proving our claim how little it costs for the daily up-keep of a

Rambler

THE CAR OF STEADY SERVICE

We wish it were possible for you to visit the Rambler factory. It covers 15 acres of ground, and is the largest and best equipped automobile factory in the world. It is under the personal supervision of a man who has had over thirty-five years of actual manufacturing experience.

We wish you could see how the Rambler is built; see the materials which enter into its construction, how the different parts are tested, how each Rambler is tested before shipment. You would realize then why 14,000 Ramblers are in the hands of owners, and we have yet to hear of one that is worn out.

We want you to examine this Rambler; see the ease with which the luxurious 5-passenger tonneau can be removed and the torpedo deck substituted, making a stylish 2-passenger roadster of medium weight. Then see how quickly the Torpedo deck can be removed, leaving a handy utility car with which you can carry produce to market, milk to the creamery, parts of farm machinery to the blacksmith's, trunks to and from the station, bring seed and supplies back from town, and haul the thousand and one miscellaneous things that every farmer has to have—things too bulky or too heavy for his buggy and too small to require the big wagon.

We want you to know about the Rambler double opposed motor; note how it is entirely enclosed, together with the transmission gear, making the power plant a unit.

Then see how all mechanism is protected from injurious road materials by the shield of light metal that extends under the entire bottom of the car, the ease of control, the small cost of up-keep, the large wheels, the big tires, the full elliptic springs, the comfortable cushions, the highly polished durable finish, the wonderful hill climbing power, the absolute safety on steep grades, the starting and stopping without jar or jolt, the ease with which parts are reached, are but a few of the many reasons why the **Rambler is the standard car for farm use**—the choice of the American farmer—the most exacting and discriminating buyer in the world.

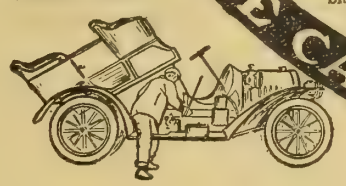
Everybody who has ever ridden in a Rambler has expressed astonishment at its power, silence, smooth running and easy riding qualities

Write today for our interesting and instructive farm folder. It tells you what Rambler owners think of their cars, why they chose the Rambler and what pleasure and profit they derive

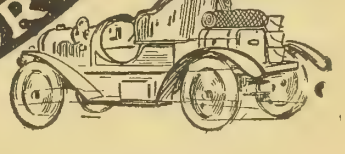
Don't fail to write today for Farm Folder 156.

Thomas B. Jeffery & Company,
Kenosha, Wisconsin.

Every working part reached from above in this Rambler Model 41.



As a Utility Car the Rambler Model 41 excells all others.

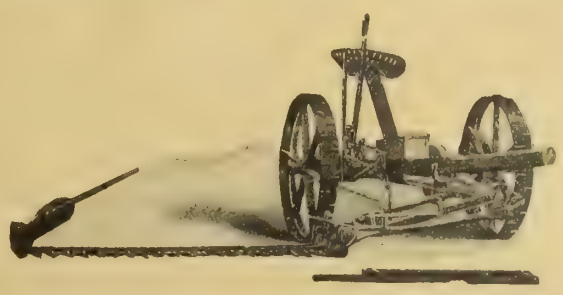


THE CAR OF STEADY SERVICE

ACME GIANT MOWER

5 and 6 Foot Cut

Not in the Trust

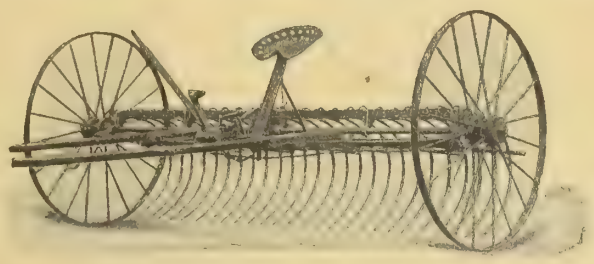


The Greatest Grass Cutting Machine on Earth

No Side Draft. No Neck Weight. No Lost Motion.

ACME LASSIE SELF DUMP HAY RAKE

10 and 12 Foot



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Improved Wheels, Teeth, Self Dumping Device, Relief Spring

We can positively save you from $5.00 to $15.00 on a mower and rake. Write us at once for particulars, catalog and prices.

We Pay the Freight

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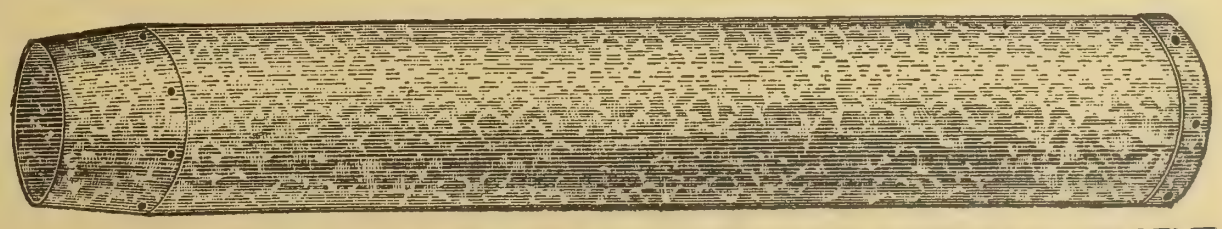

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SAVES WATER, GRADING AND TIME

The **only** way to **Irrigate Alfalfa. Cheaper** than **Flumes.** This is only **one** of our **specialties.** We make **Riveted Water Pipe** in lengths of **ten feet** from **single sheets.** Let us **prove** to you that we make **Pipe** and **Tanks right.** WRITE FOR CATALOGUE.

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Why shouldn't you know what is in your roofing so that you may be sure of your buildings' protection?

Genasco Ready Roofing

is made of Trinidad Lake Asphalt—Nature's absolute waterproofer that doesn't crack, rot, break, or leak.

Ask your dealer for Genasco, and thus make sure of economical and lasting protection for every building on the farm. Mineral and smooth surface. Guaranteed in writing and backed by our thirty-two-million-dollar organization. Look for the trade-mark; take no substitute. Write for samples and the Good Roof Guide Book

THE BARBER ASPHALT PAVING COMPANY

Largest producers of asphalt and largest manufacturers of ready roofing in the world.

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The Schandoney Equalizing Hitch

perfectly equalizes from four to forty or more animals in a team. No whip required to drive them. each must do its share. The team in this picture shows 26 Mules hitched to a 16 ft. Houser-Haines Harvester, cutting down barley in sediment soil. Guess how many pounds each animal is pulling? For further information, Catalogue, etc., write today to

Schmeiser Manufacturing Company Davis, California

"Success" Fireless Brooders

50 Chick $2.50
150 Chick $5.00

We Pay Freight

Will raise every chick. send today for free circular; tells about this wonderful brooder..

No Lamp, No Smoke, No Odor, No Danger of Fire

We pay freight. I sell on trial, if not satisfied I will refund you every cent. Order now. I can ship the day I get your order.

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112 E. 8th, Los Angeles

Snow Ball AND SISTER

Some of "Pet's" Class

Mrs. C. D. Hubbard
WRITE FOR CIRCULAR
San Fernando, Cal.

Rhode Island Reds

From Winners at Madison Square Gardens. The Greatest Utility fowl in the world. These birds won 1st prize at Oaklands Great Show and are unquestionably the finest blooded stock in Cal. Eggs—1st pen $5.00 per 15—2nd pen $3 per 15. Day old chicks 20c each. A few hens and cockerels for sale. Address

W. E. GIBSON, R. D. 13, Niles, Cal.

Mammoth Bronze Turkey Cockerels

(From pair that took first at Petaluma.)

Improve the blood of your Turkeys by introducing some of my GRAND STOCK. Price $10 each.

THE SHOW POULTRY FARM, R. 1, Santa Barbara, Cal.

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Alkali.

Please advise regarding preparing 40 acres of dark loam soil for alfalfa seeding. There are a number of alkali spots from 15 to 30 feet square. Will lime, air slaked, be of use in reclaiming? How much per acre should be used? Is gypsum better? Do not expect to irrigate this year. It is now very wet and will seed as soon as land will bear it.—W. M. M., Corcoran.

Lime would be of no value in reclaiming the alkali land. Gypsum is of value providing the alkali is of the black variety. In such case it turns the black alkali to white alkali which is much less caustic and more easily washed from the soil. The best plan of all is however to under-drain which while expensive at first, puts the land in magnificent condition for years to come. If gypsum is used apply 400 to 500 pounds per acre. We note you say you do not expect to irrigate this season, but if you anticipate irrigating later it will be well to check the land so that water may be applied when you need. In such case make the checks as far apart as possible and say about 18 inches high. Make them so broad that the machine and rake may readily pass over them without inconvenience. If you will refer to the Cultivator for January 21, the first page article, you will note an article on the effect of limes on soils in which alkali is to a certain effect treated of.

Leaks Her Milk.

I have a cow that gives from 4 to 4½ gallons, but about the middle of the afternoon the milk begins to flow and unless I take time to milk her I must lose considerable milk. I found in the July Cultivator, 1907, a remedy in a common rubber band on the teat, but I do not think that would do in this case as the teats are large and fleshy.—J. W. A., El Monte.

This cow should be milked three times a day to relieve tension on the udder. She is probably able to give much more milk than she is at present producing. The rubber band remedy has not been a great success with us. It is applied by using a visiting card under it to prevent strangulating the end of the teat. If any one has given you any other remedy I would be glad to know what it is. We always milk any cow that leaks her milk oftener, and find that the successful way of ridding her of the extra milk.—M .E. S.

Milch Goats.

Can you tell me of any one in this State who has a good milk goat for sale? Also what are the markings or points of a milk goat. There are several different kinds of goats, I know, but I do not know one kind from another. Thanking you for the many helpful articles in the Cultivator.—H. A. S., Lodi.

It is impossible to give you any satisfactory information as to the price of purchasing milch goats. The imported stock which is the heavier milk-producing strain, costs such exorbitant prices in expressage and import duty that the price is almost prohibitive. We have been told that $150 is about the lowest price for such imported stock. Of course some of this stock has been introduced and crossed by the indifferent stock and some fairly heavy milk-producers have been bred; but the demand for these has been so strong that the prices are still high. Mr. H. A. Wood, of Pasadena, also Dr. Jas. H. Hester, of Santa Barbara, have had some experience in handling this stock. It is possible they could give you more particular information. There is also, we believe, quite an extensive dairy near Hollister, but the name of the owner we cannot give you. The different varieties of goats are the Maltese, bred on the Island of Malta in the Mediterranean; the Toggenburg and the Saanen, also a Swiss goat; the Nubian from Egypt; also some others. Of these the Toggenburg is perhaps the most popular in this country.

Millet.

I lately saw something in your most valuable paper in high praise of millet as a feed for chickens. What kind is recommended and where can I get seed? What is its relative value as compared to other grains?—W. R. T., Calistoga.

The seed can be secured from the seedsmen advertising in the Cultivator. The German, the Hungarian, and the common millet are the varieties. It requires from 30 to 40 pounds per acre. Millet seed resembles oats in composition, and Henry says in his "Feeds & Feeding:" "It cannot successfully compete with Indian Corn in sections where corn is successfully grown." "It has a higher proportion of albuminous and a higher nutritive ratio than oats, but less oil. It is one of the best rations for horses, being adapted to the development of muscular strength." For little chicks we do not doubt it would be valuable.

CRIMSON WINTER RHUBARB

$1.50 a Dozen, $6.00 per 100, $40.00 per 1000

Now is a good time to plant. Pedigreed Stock.

Fruit Trees and Berry Plants of All Kinds.

J. B. Wagner Pasadena, Cal.
Rhubarb and berry specialist

Grafted Walnuts a Specialty

15,000 Trees, Grafted and Seedlings

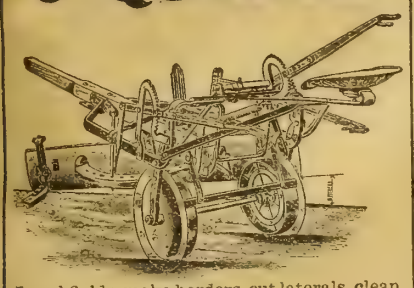
Grafted trees grafted on Northern black and California soft-shell roots. Seedlings grown from selected nuts from grafted trees selected by myself. Place your orders early to avoid the rush and get the best trees. Price 15c and up. Took first premium on nuts and trees this year. Some lemon trees still unsold. Fine lot of Kadota Fig trees.

Whittier Nursery

Established 1887 by Present Owner
CHAS H. HAMBURG **Whittier, Cal.**
Home Phone 288

THE CLIPPER!
Will cut tall grass and weeds and do all the trimming along the walks and drives. Your dealer should have them—if he has not drop us a line and we will send circulars and prices.
Clipper Lawn Mower Dixon, Illinois.

CUT DITCHES QUICKLY



Level fields, make borders, cut laterals, clean laterals, pare off hummocks, cut sage brush with a **20th CENTURY GRADER**

and "Better Roads Boomer."
Write for dandy new catalog to

Baker Mfg. Co. 731 Fisher Bldg., Chicago

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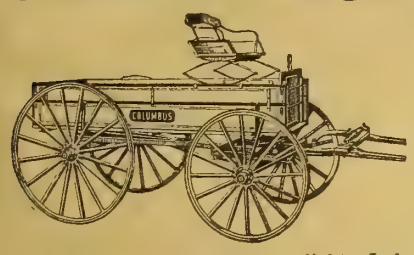

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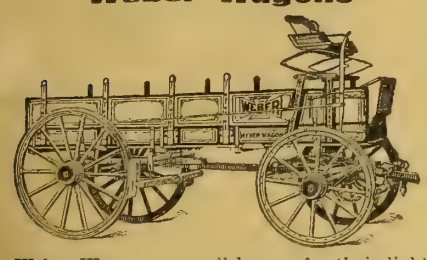

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Weber and Columbus improvements are many. In fact, no matter what part of the wagon you examine you will find something to demonstrate that every detail has been carefully observed. If your dealer cannot supply you with these goods, buy from us direct.

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SECOND HAND PIPE AND CASING

All our pipe and casing has newly cut threads with new couplings attached and dipped in asphaltum. Guaranteed good as new. Prompt delivery on carloads or less. Small orders receive same attention as large ones. All sizes of pipe, also fittings and valves.

WEISSBAUM PIPE WORKS
133-135-137 Eleventh Street, San Francisco

Orange Seed

Selected from choice groves. Can supply any quantity at reasonable prices.

K. W. Lattin

20 West 4th St., Alhambra, Cal.

School children at Santa Rosa spent Arbor Day this year planting Shasta daisies.

Overfeeding.

I have a calf one month old; was strong and healthy till a week ago, when it would lie flat out on the ground refusing to move when touched, and in afternoon it looked as if just fed; it also vomits its food many hours after feeding and will not drink its usual amount. It has been having 10 quarts fresh warm skim milk in two feeds.—M. B. M., San Diego.

Whenever a calf becomes dumpish you may safely conclude it has some indigestion. Give this calf half the amount of milk with a rennet tablet dissolved in water added to it. Gradually increase the milk; I would not, however, feed a calf of this age more than three quarts at a time. The amount of ten quarts a day is enough for a three or four months old calf. A little dry bran with salt in it in a rack at one side will be helpful after the calf is three months old.—M. E. S.

Possibly Tuberculosis.

We have a Jersey cow, eight years old, fresh last September, gives about 3½ gallons a day, milk very rich. She is never fat but is in fair condition. Occasionally the right hind quarter of her bag becomes swollen, stays so for about 24 hours, when it passes away. This has occurred about four times in the past three months. She is fed alfalfa hay in the morning, is then staked out on green barley; is always treated kindly and handled carefully. I noticed in the last Cultivator that such swellings indicated tuberculosis. How do you proceed to have a cow tested?—Subscriber, San Bernardino.

Have you ever investigated cause for this trouble? I had a cow that was troubled in this way and found that she twisted herself in the stall so that she pressed the udder against a slat that had been put in the side of the stall as a protection against the cows slipping. Examine into the surroundings and then if you are satisfied that it comes from internal causes, if you will drop a line to the University Experiment Station at Berkeley and ask for full instructions they will send them to you and also the tuberculin if you will agree to give them the records. Should you not care to do this the local veterinarian will probably test her for you for a couple of dollars.

Fungus on Lemon.

I am addressing to you a cutting of a young lemon tree from my garden. The only one I have. Yesterday as I passed by it I noticed the withered appearance of the twig and cut it off when I saw what appeared to me like a fungous growth on it. Can you inform me if it is anything serious and if so, what is the remedy? There is no other sign of the growth on the tree.—N. P. Nielsen, Haywards.

The lemon twig is affected by a fungous growth which usually propagates in the soil, although it sometimes affects vegetation above ground. In the present connection it is not a serious matter and your correspondent does not need to apprehend that it will cause any severe injury to his tree.—Ralph E. Smith.

Silos.

We are in the dairy business, and are contemplating the building of cheap durable silos. We have considered making a 20x30x100 beet silo of cement and stone in the side of a hill, so that we can deliver the silage from wagons or a chopper directly to the top. We have everything on the ranch to build such a silo, but cement. How practical do you suppose such an affair would be? Do you know of anyone who has had experience with a silo of this sort?

Would stock beets be a profitable silage to the extent of about 100 tons? We are considering the planting of several acres of such beets.

We would thank you for space enough in your paper to explain as thoroughly as you may, the value of stone silos and beet silage.—Panba Ranch Co., Temecula.

I do not understand the dimensions given, but for practical uses the diameter of the silo should not exceed 26 feet and the pits must be one and a half times as deep as they are wide at the least. The depth may be increased to advantage. A silo that is shallow rather than deep will not preserve the silage. Even in a silo of the proper depth the silage in the bottom is better than the first ten feet; owing to greater weight it is better cooked in the heating up process.

Silos are very successfully built of concrete and if you will send to the Government Dept. of Agriculture a bulletin can be secured that will give drawings and plans for the same as I could not give the detail in the paper without encroaching on too much space. I can see no special use in hauling the feed to the top when the same power that elevates the corn is used to cut it. The stone, brick and concrete silos have the advantage of being permanent structures while the wooden ones will last twenty to twenty-five years if kept in good order.

Stock beets are profitable for feeding and the tops may be siloed with good results. The roots are hilled up and fed as needed, or may be left in the ground and taken up as needed. The corn crop is cheaper with us than anything we can grow so that we do not grow beets any more, but can assure you they pay well.—M. E. S.

We think the circular silo is much to be preferred to the 20x30 shape suggested by the enquirer. A corner in a silo is most objectionable. As Mrs. Sherman notes: "Why haul the feed up the hill?" Yet if the feed is grown on the level with the top, that might be an ideal feature and save some little power in elevating it.—Ed.

Butte Valley.

Please state where Butte valley is. What is its temperature, and is it effected by frost in winter? Would the place have to be drained? If so please tell me what it would cost to drain five or ten acres? If I have my own irrigation system how strong would the engine have to be? What crops grow in the valley? Is it too cold for oranges?—B. P., Los Angeles.

Butte valley is in Siskiyou county and at an altitude which will give you frost probably eleven months out of the year. There will be no possibility of raising oranges in that section. As to draining, that would depend on immediate situation and could only be told by examination. The cost of draining depends on so many things that we can not give you any intelligent answer. The size of engine to lift irrigation water depends on the amount of water which you need and the distance to be lifted. The valley is principally given over to grazing, but it is probable that apples and some hardy fruits will do well.

Can Your Own Fruit and Vegetables Keep profits at home—We show you how.
CANNERS' SUPPLY CO., DETROIT., MICH.

Wood soled Boots and Shoes. Boots $3.25; Shoes, $2.00 O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles, Cal.

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California Grown Seeds Lead

We ship them to all parts of the world, and year by year our trade increases.

Germain's Tested Vegetable Seeds are the best to plant, always fresh and true. See us for the best varieties of tomatoes and onions.

Plant Germain's Oregon Evergreen Sweet Corn

Germain's Improved Chilian Watermelon, the most popular melon in Southern California.

We are headquarters for **Eucalyptus Seeds.**

Splendid stock of **Plants, Bulbs, Nursery Stock.**

We carry a full line of **Poultry** and **Stock Foods** and **Remedies.**

CATALOGUE SENT FREE

You should have our new 1909 catalogue and complete price list. Write for a copy.

(ESTABLISHED 1871)

Germain SEED AND PLANT CO.
Dept. B LOS ANGELES, CALIFORNIA

Bumper Crops

WILL BE GROWN FROM

MORSE SEEDS

THIS YEAR

Plenty of rain—plenty of sunshine. Now sow seeds from Morse.

Be sure the name C. C. MORSE & CO. is on the label.

Plants, trees, bushes, shrubs. Everything the garden needs.

If you haven't our new 1909 catalogue, send us your name and address at once. You get it free for the asking.

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Fancy Recleaned Utah

Alfalfa Seed

Also California Sorghum Seed.

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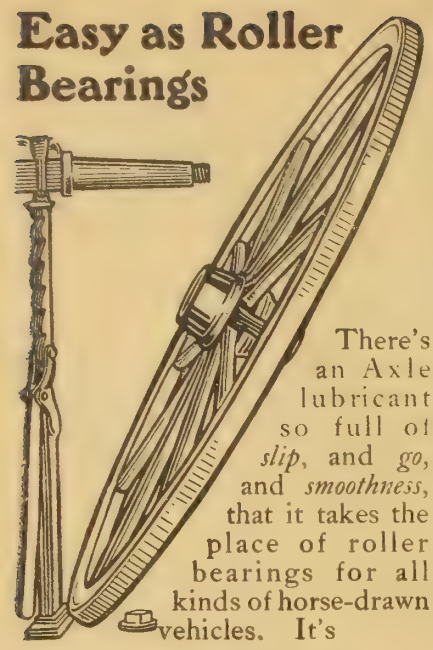
Easy as Roller Bearings



There's an Axle lubricant so full of *slip*, and *go*, and *smoothness*, that it takes the place of roller bearings for all kinds of horse-drawn vehicles. It's

MICA AXLE GREASE

And a trial of it means constant use ever after. Mica Axle Grease *won't* make an empty wagon *push* a horse up hill; but it *will* make a big load draw no end of per cent easier.

It's a friction killer and a horse saver; and it wears so well that it's hard to remember the date of last greasing.

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Made of Yucca Palm

Is cheap, durable and quickly put on the tree. It prevents Rabbits from destroying your trees. A sure protection against frost, sun-burn, grasshoppers or dry winds. Can be easily removed; will last for years.

Send for samples.

Prices

12 inch long,	$ 9.00	per 1000
14 inch long,	10.00	per 1000
16 inch long,	11.25	per 1000
18 inch long,	12.50	per 1000
24 inch long,	15.00	per 1000
30 inch long,	17.50	per 1000

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Billion $ Grass

SEED COSTS BUT 90c PER ACRE

Most wonderful grass of the century, yielding from 5 to 10 tons of hay per acre and lots of pasture besides. It simply grows, grows, grows!! Cut it today and in 4 weeks it looks for the mower again, and so on. Grows and flourishes luxuriantly everywhere, on every Farm in America.

Big seed catalog free or send **10c** in stamps and receive sample of this wonderful grass, also of Spelta, the cereal wonder. Barley, Oats, Clovers, Grasses, etc., etc., easily worth **$10.00** of any man's money to get a start, and catalog free.

Or send **14c** and we add a sample farm seed novelty never seen by you before.

JOHN A. SALZER SEED CO., LaCrosse, Wis.

Now is the Time To Plant Eucalyptus Trees

I have about 200,000 seedlings left, price $7.50 per 1000 f. o. b. Corona. Varieties, Rostrata or Red Gum, Corynocalyx or Sugar Gum, Rudis or Desert Gum, Tereticornis or Grey Gum.

Robt M. Wollitz, Corona, Cal.

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"Jubilee Year" of Page Fence

Page Fence is woven just the same today as 25 years ago. A real triple knot — not a simple twist! Page Fence is made of High Carbon Steel of double the tensile strength and elasticity of common fence wire.

Page Catalog—"Jubilee Edition"—SENT FREE!

Page Woven Wire Fence Co. Box 114X Adrian, Michigan

Orange Seed Bed.

What number of orange seed should be used to plant a bed 50 by 50? What formation of soil is best and how should the bed be prepared? Should stable manure be used? What kind and how much fertilizer while the trees are growing? What is best time to plant the seed? What kind of seed is best? Will trees do as well in sunshine as if partly shaded? Can you give name of party who can furnish seed?—H. A. M., San Bernardino.

You would need from 20 to 25 gallons of seed for the space you refer to, which would produce you about 150,000 trees. A good loam soil which is rich enough for best garden production will be all right for orange seed beds. The bed may be prepared in open ground or in flats as you may prefer. Of course if not rich enough it would be too late for this season to get it properly enriched and in condition for planting the seed. For seed bed work you do not want to do any heavy manuring after planting the seed. As a mulch, fine cow manure is probably the best. This may be sifted over the seed after planting. The seed may be plantel now or before the end of May. The kind of seed which is best to plant depends on the locality in which the orchard is to be planted, or at least it is so thought by many. If the land is low and damp the sour stock is probably the best as it is less liable to gum disease. We doubt very much however your ability to get that amount of sour stock seed this late in the season. We would suggest however, that, planting as large a quantity as you anticipate, you should secure the services of some one who understands this work as an aid at start at least. The seed bed should be protected from the direct sunshine which protection is also valuable in case any frost threatens. Seedsmen advertis-

Legal Queries

Edw. L. Payne, attorney, 301-304 Douglas Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Payne is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Right of Way for Water.

Suppose A lets B run water across his land once does this give B any right of way for ditch?

Suppose B paid A for being allowed to run water but has no deed to right of way, can B then hold ditch in future years?

Can B force A to sell him a right of way for a ditch across his land, or can the canal company compel A to let him through? Said land belonged to one party and was located by first owner, but when sold out in small tracts no ditch right was mentioned in deeds. B can get his water another way.—O., Selma.

No, it takes five years adverse use and possession to give B a title or right of way.

No, for the possession of B would be such as to recognize the rights of A, and not adverse to A.

B can not force A to sell him a right of way for a ditch across A's lands if B desires the ditch for his private use, but B or a water company or canal company might condemn a right of way across A's lands for a ditch or canal if the same is for public use, or for the purpose of supplying a neighborhood with water, or for drainage purposes, or for other uses particularly mentioned in the code.

Condemnation proceedings rest upon the right of the people or Government to take private property for public use, and must be instituted and prosecuted in the manner prescribed by the statute, and of course, it would be necessary to consult your lawyer as to your rights in the matter in a case of any such proceedings. The fact that B has an opportunity to get water onto his land without passing through the land of A, would prevent B from condemning a right of way across A's land, if other facts or circumstances existed which would otherwise entitle him to do so.—E. L. Payne.

Trees Near Line.

I have an orchard that has green timber growing on either side, some large pine trees growing close up to line that injure about two rows of my fruit trees. Can I do anything with parties owning adjoining land in regard to having trees cut down?—Subscriber, Rocklin.

You may not have the trees cut down as they belong to the adjoining owner, and you probably have no redress for the injury to your trees, for while overhanging branches are a nuisance, which may be cut down by injured owner, he has no right to cut down the tree itself, where the tree stands entirely on the adjoining owner's land.

There is a decision by the Supreme Court of California, which indicates that you might possibly have damages for the injury to your trees in an action brought for that purpose, but the point is not decided.—E. L. Payne.

Damage from Storm Water.

What is the law regarding storm water from the foothills when, in order to grade up orchard lands, it has been turned from its natural channel into the roadside? May a rancher turn such water onto his neighbor's roadside? May one county turn it into another? Should it be carried on the upper or lower side of the road? —A. M., Whittier.

"The owner of higher land has no right for his own relief, to the injury of the owner of lower land, either to divert surface or storm water upon such lower land, over which it would not naturally have flowed, nor has he the right by accumulating the surface waters upon his own lands in ditches or other artificial channels, to precipitate them upon his neighbor's land in larger quantities or in different form from that which they would have had or taken in the course of nature." Therefore, the party upon whose land the water was turned in the grading of orchard lands, as indicated in the query, might have damages for the injury resulting. Had the injured party acted in time, he might have enjoined the grading of the orchard lands.

One has no more right to turn storm water from its natural channel onto his neighbor's roadside, if it will thereby injure his neighbor, than he has to turn it directly onto his neighbor's land, and a county has no greater rights in respect to turning water from its natural channel, where it will do injury, than has an individual.

The question as to whether or not water should be carried on the upper or lower side of a road, is eliminated by the foregoing answers, as the storm water must flow in its natural channel no matter where that be, if a diversion of it will cause injury.—Edw. L. Payne.

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Of Superior Quality

A large assortment of choice Garden, Flower, Tree and Palm Seeds.

Roses, Carnations

and other Flowering Plants.

Fruit Trees

and Berry Plants, all the leading sorts.

Eucalyptus

Seed and Trees.

Ornamental Trees and Shrubs.

Catalogue mailed free upon application.

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New Crop Seed

Plant Good Seed Reap Good Crops

We carry everything in good new

Grass Field Vegetable SEEDS

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Big Leaf Jersey Kale

for your poultry.
10c per oz.

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How to put up shipments in an attractive manner. We do not dump our goods on the Eastern Commission Houses and take a chance on getting a price. No! We go right out and create a demand among the high grade dealers under a special brand, and That Brand is a Guarantee that the goods are special first class. Our men are working among the Eastern Trade all the time.

EVERY GROWER AND SHIPPER

No matter what their present arrangement may be, should write us for information, for by our plan you receive the best prices paid in the Eastern Markets.

THE PHALANX COMPANY
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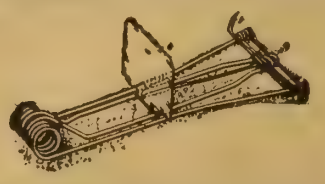
Los Angeles, Cal.

Eastern Offices, Philadelphia and New York. Members of Los Angeles Chamber of Commerce.

MACABEE GOPHER TRAP



Small, simple, sure. At all dealers. If your dealer does not handle same, send 20 cents in stamps and mention your dealer's name and get sample by mail postage paid at special rates. Manufactured by.

Z. A. MACABEE, LOS GATOS, CAL.

The California Mortgage Lifter

Great Profit from Crimson Winter Rhubarb Which is Putting It in the Money Making Class as No Other Similar Product Has Ever Been Placed

RHUBARB culture has widened its field to such an extent and has attracted so much attention from those who are ignorant of the details of its culture that many queries have come to this office asking for more complete details of its culture. Formerly growers having a spare corner of the ranch which nothing else particularly demanded, would consider it a fitting place for a few roots of rhubarb but the promise of great profits which many growers are finding have been fulfilled is increasing this interest so that instead of a corner the principal feature of some ranches has become the rhubarb garden or field as it may be called.

The Rhubarb King.

Believing the place to get the most reliable information was to go to the most reliable and best fitted source to procure that information, an interview was sought with Mr. J. B. Wagner, the rhubarb king, at his delightful home in one of the most attractive residence sections of Pasadena, the home of millionaires.

Home of Culture.

Mr. Wagner's home is a typical home of culture, being filled with musical instruments and other indications of cultured life. It is not palatial but one of those places which give one the restful feeling all true homes should.

The object of the interview was of course to touch upon other things than the home life of this man who has done so much to advance the commercial interests of California by improving new strains of Crimson Winter Rhubarb. It was in fact to secure at first hand some information as to culture and localities where greatest success may be secured by this product which has been called the "California mortgage lifter." Therefore, while we might have been interested in securing a closer insight into the life of this man, we at once proceeded to secure such information as possible regarding the cultural methods.

Location.

First, as to locality, Mr. Wagner always advises care in selecting location. As a rule he says to notice where the orange does well; there the rhubarb is at its best. There are many other sections where it has done well and paid handsome profits, but in the citrus section conditions seem to be more nearly perfect.

Soil.

In the matter of soil, Mr. Wagner says the range is exceedingly great. He would prefer a warm, sandy loam, but remarkable results which have brought great profit to the owner have been secured in heavy adobe land. Where the heavier soil is used, liberal applications of stable manure aid in putting it in better condition for the best results. It has done fairly well on a very light sandy soil, but in this case of course it must of necessity have good supply of fertility which makes more expensive culture.

Fertilizer.

Remarkable results have been secured without the expenditure of any money for fertilizer, but experiments have been tried by Mr. Wagner in which the addition of 10 loads per acre, or the expenditure of say $25 on soil of only very low fertility has brought the satisfactory, even remarkable income of between six and eight hundred dollars from the acre. Hence it is readily seen that if $25 worth of stable manure insures a crop of such remarkable profit the money is well spent if only for the feeling of security which it gives. Commercial fertilizers which are rich in nitrogen succeed fairly well, but are not so desirable as the stable manure.

Water.

Points on irrigation are hard to give because it depends entirely on soil and climatic conditions. For instance, in the Coachella valley one grower gave irrigation every three or four days during the first summer after planting. The return for this outlay of water was of course very strong plants with a big crop.

In the following year the irrigations were much less frequent—every three or four weeks—and plants still did equally well. In contrast with that, we may say that plants in Ventura county near the coast have been carried through the first season, with not more than three or at most four irrigations throughout the entire season and none whatever in after years. From this great range it will be seen that conditions in each locality must be studied before an intelligent answer can be given.

On the question of water, the last few months have given some lessons. On this point we are permitted to quote from a letter by Mr. Shoemaker, president of the Phalanx Fruit Company, to Mr. Wagner, as follows: "We have found that water adds greatly to the flavor, color, and shipping qualities. That which has been well watered will keep much longer, without ice, than that which has not been watered.

"I have just received a sample box of five weeks old rhubarb from Ventura, where it has plenty of water. It certainly looks fine; would like you to have seen it, but I believe water will do the same thing anywhere."

Culture.

The question of culture is sufficient to call for another article, which will be given later. For the present we may say, however, that this wonderful plant may be planted at almost any month of the year. In fact it has been, in various sections of California, but the best results have as a rule been had from planting from the present on through to the end of May or possibly June. While chatting with Mr. Wagner, a customer called and took away a small parcel of plants for immediate planting. These will get thoroughly rooted and be in good condition to give a fine crop next year as well as producing some fruit during the time of growth.

A word as to the commercial quantities and the efforts to introduce rhubarb on the market. Last fall the Phalanx Company was organized with head offices in the Chamber of Commerce building of Los Angeles, to ship this product to Eastern markets. The company has over 100 acres of rhubarb. This, with what is consigned to them, gives the company a good supply to ship to the Eastern trade.

The Phalanx Company have an ad in the Cultivator, so those who have rhubarb for market should write that company and secure shipping instructions.

Regarding the demand, Mr. Wagner recently remarked:

Los Angeles has become a good market; they now use about 10 cars per week during late spring and winter. No doubt it will be some time before we will be able to supply home demand, while the demand in the East will probably never be supplied owing to the fact that the area where Crimson Winter can be successfully grown is limited to certain sections in California and Arizona and Texas.

Another thing which did more to stimulate the market than any other was the organizing of the Southern California Rhubarb Growers; this organization acts in the same capacity for rhubarb growers as the Orange Exchange does for the orange growers.

Everyone interested in the cultivation or marketing of one of California's most profitable products, should detach the coupon and send to Mr. Wagner, and receive information as to prices of plants, whether they are adapted to your section or not and other interesting particulars of value to every one.

FILL OUT

Mail This Coupon Now

Any one having good land, can get credit for plants. No California product ever has or ever will pay as well as Crimson Winter Rhubarb. For full information and circulars, send this to

J. B. Wagner, Pasadena,, Cal.

NAME _____

ADDRESS _____

Classified Liner Columns

Rates 1½ cents per word per issue. No ad. accepted for less than 25 cents. Our classified columns are the clearing house for the readers of the Cultivator. Here you can insert an ad. for the small sum of 1½ cents per word per issue, and be sure that it will be read by thousands.

FARM LANDS FOR SALE.

HALF RATES FOR MARCH—FOR only 25 cents an acre and our expenses, I will locate you on good government land, rolling, rich soil, fine pasture, about 8 miles off good railroad oil town, or on some good level land for alfalfa; plenty well water, will be under canal. $2.50 a day and our expenses, if you do not take. U. S. fee 25 cents an acre. A man or woman can take 160 to 320 acres. One man refused $1,400 net the day I located him. You may do better. **If you want this land,** bring your money and **come** to Armona, California. Write me when you are coming, Box 81, Armona, or Route 2, Hanford, Cal., JOE CLARK (farmer.)

FOR SALE—ONE ACRE OR MORE
$300 TO $500 PER ACRE
One-fourth in cash, balance 1, 2 and 3 years. In the great growing Southwest. Right in line of rapid development. Water piped to each acre. Land is perfect for the production of potatoes, onions, beans, corn, alfalfa, berries and fruit. Finest place for the home. Surest advance in values. Lowest price ever placed on good land, so close to Los Angeles. Send for illustrated folder.
INGLEWOOD RANCHO
330 S. Hill St., Los Angeles, Cal.

RICH ALFALFA LAND UNDER IRRIgation. Send two-cent stamp for our Free Illustrated Booklet, "Hickman Land, Small Irrigated Farms" at head of Famous Turlock Irrigation District in "Sunny Stanislaus" County, California; sold on small cash payment, balance three to four years. L. W. JEFFERSON REALTY CO., 350 Market St., San Francisco, Cal.

35 ACRES ORANGES FOR SALE BY owner. Varieties largely late. A consistent producer. Fine house and other improvements figured in low. Exchange book open for inspection as to returns. One-third cash. Selling account of ill health. An exceptionally desirable property. No agents. Address F. L., Cultivator Office.

IMPERIAL VALLEY—BRAWLEY LOTS, Weston 10 acre oranges, melon, alfalfa tracts. I arrange daily excusions at low rates; answer your letters immediately and call when possible. Address JAMES H. SHULTS, M.D., General Sales Agt., 2100 La Salle Ave., Los Angeles, Cal.

RANCHERS, ATTENTION—OUR SPEcialty, oranges groves and ranches. If you have one to sell or exchange, list with us. We have many customers, who wish to buy and exchange for country property. Los Angeles Purchasing Co., 404 Chamber of Commerce. Los Angeles, Cal.

TULARE CITRUS BELT—WE HAVE the cheapest and best orange lands right here. If you want reliable information about this glorious country, write STRATHMORE REALTY CO., Strathmore, Tulare Co., Cal., between Lindsay and Porterville. Excursion fares from Los Angeles, Cal.

FOR SALE—S.E. ¼ SEC. 36. 23 S. 27 E. Near Ducor on S. P. in Tulare Co. First class orange land at $55 per acre on 6 years' time; no payments until the sixth year except 7 per cent interest annually, payable each year in advance. Will sell in 20 acre lots. J. E. FARNHAM, Hollywood, Cal.

FOR SALE—PALOMITAS VINEYARD 194 acres; 106 planted to choice Emperor, Malaga and Muscat vines, 3 to 5 years old Part or all. Half cash, balance on easy terms. MRS. M. E. SHERMAN, Fresno, Cal.

ORCHARD HOMES FOR SALE—FIVE acres and upwards; fine citrus and deciduous fruit lands on easy instalments and low interest. Write us today. WYATT & WILSON, Winters, Cal.

I MAKE A SPECIALTY OF ORANGE and alfalfa ranches and exchanges. 826 Main St., Room 9, Riverside, Cal. N. R. BELL.

SEED.

FOR SALE—CALIFORNIA BLACK walnut seed in sack lots. Wanted: Mayette, Franquette and Parisienne Walnut scions, also Rupestris St. George, Rip. x Cord. x Rup. 106-8, Rip. x Rup. 3306 and 3309 cuttings, grafting size. Address FANCHER CREEK NURSERIES, Fresno, Cal.

FOR SALE—SEED FROM SELECTED plants, Burbank's Crimson Winter Rhubarb $1 per quarter pound package, postpaid, $3 per pound. A. E. NELSON, El Monte, Cal.

SEEDS — ORDER YOUR SEEDS through us. Personally selected. All guaranteed. Catalog free. Department "S", COLUMBIA COMMERCIAL COMPANY, 204 East 9th Street, Los Angeles, Cal.

FOR SALE—ORANGE SEED SELECTed from choice groves, can supply any quantity at reasonable prices. K. W. LATTIN, 20 West 4th St., Alhambra, Cal.

MACHINERY.

OPPORTUNITIES—A FEW EXCEPTIONAL BARGAINS.
One 25 horse power Olds distillate or gasoline engine. One of the best on the market. Brand new four months ago. You cannot tell it from new now. Cost $450, will sell for $200 cash.
SEPARATOR.
A De Laval Improved No. 12. Capacity 450 pounds per hour. Cost $70 last year. Guaranteed to be in perfect order. $35 cash takes it.
SPRAYING OUTFIT.
A "Pomona" air cooled gas engine sprayer complete with two 20-foot lengths hose, 2 poles with nozzles, etc., ready to use. In use only a short time. A dependable machine in perfect working order. Cost $88. Sell for $40.
These are genuine bargains having been taken for debt and are offered for quick sale. Write or wire, E. C. ROCHEFORT, Pasadena, Cal.

FOR SALE, UNION GASOLINE ENgines all sizes, some rare bargains in slightly used machines . Also other machinery. See us before buying. BAILIE & BRANDT CO., Agents, 943 N. Main St., Los Angeles, Cal.

FOR SALE—RENT OR EXCHANGE, boilers and engines, gas engines, pipe and oil well casing, pumps, all sizes and makes; get our prices before you buy. A. CANNADY & CO., 691 N. Main St., Los Angeles, Cal.

FOR SALE—MEHRING MILKING MAchine with extra parts and covered pail, all in good order. WM. H. BIRD. Box 6. Compton, Cal.

FOR SALE—GASOLINE ENGINE, standard make, 16 H.P. Can be bought cheap. MACHINERY EXCHANGE, northwest corner Main and Bruno Sts., Los Angeles, Cal.

FOR SALE—50 H.P. DISTILLATE IN good running order. Can be bought at a snap. Address P. O. Box 436, Station C, Los Angeles, Cal.

FOR SALE—7½ H.P. A.C. ELECTRIC motor, two phase, in fine shape. 117 BRUNO STREET, Los Angeles, Cal.

TREES.

FOR SALE—AT VERY LOW PRICES, large palms of the following varieties, Phoenix, Canariensis, Chamrops excelsis, Chamrops humilis, Cocos australis, Cocos plumosus, Seaforthia, Dracena australis, Dracena indivisa, Musa ensete, Ficus elastica, Italian Cypress, Monterey Pine, Pinus canariensis, Camphors. Must be moved at once at about cost. Satsuma and Bartlett fruit trees, also live and cork oaks, very fine and cheap. Catalogue free, mention Cultivator. H. L. BAUER & SONS, 737 S. Spring St., Los Angeles, Cal.

FOR SALE—I HAVE RECEIVED from Ohio 300 Native Sweet Chestnut trees 8 to 12 inches, strong roots. Beautiful for ornamental purposes, and valuable for nuts. Much superior to Italian. Grow well in California. 50c each. 5 for $1.00. Prepaid. H. E. WARD, San Dimas, Cal.

THE SANTIAGO FROSTLESS NURsery still has some extra fine Eureka lemon trees, choice buds, but they are going fast. There are none better. L. F. THURSTON, Proprietor. Sunset Telephone 354 Orange. Address Santa Ana, R. D. 1.

SPECIAL PRICES TO TRADE AND planters on grafted and seedling walnuts, Elberta, Muir, Lovell, Phillip Cling, Leavy Late, Lemon Cling, Satsuma plum, lemons and apples in variety. A. R. MARSHALL'S NURSERIES. Box 64. Santa Ana, Cal.

WALNUT TREES—3 YEAR OLD Seedlings from selected grafted seed of **Placentia Perfection.** Best and cheapest trees in market. G. W. SHERWOOD. Fullerton, Cal.

AVOCADO AND CHERIMOYA PLANTS, from early bearing and prolific stock. Write to JAS. FULLERTON, Orange, Cal.

GRAPE CUTTINGS.

PRICE OF CHOICE GRAPE CUTtings and roots reduced. For Rooted Vines—Thompson Seedless, Flame Tokay, Cornichon, Red Emperor and Rose Peru, $1.50 per 100, $10 per 1,000. For cuttings of the following varieties—Thompson Seedless, Flame Tokay, Cornichon, Rose Peru, Muscat, Mission and Red Emperor, 40c per 100; $2.00 per 1,000. J. C. SMITH, Burbank, Cal.

STRONG OUT DOOR GROWN ROOTED cuttings. All kinds of plants. Send for 1, 2, 3c list. GEM NURSERY, Los Gatos, Cal.

FOR SALE—ROOTED GRAPE VINES, Concord and Agawam, 50c per dozen; $3 per 100. A. E. NELSON, El Monte, Cal.

TELEGRAPHY.

MAKE $100.00 MONTHLY—LEARN telegraphy at home. Send for particulars. COLUMBIA COMMERCIAL COMPANY, 204 East 9th St., Los Angeles, Cal.

POULTRY

FOR SALE—BLACKMAN'S BLACK and White Cochins, Black and White Cochin Bantams, win again at Breeders' Show, on 15 entries, 15 firsts and silver cup; Bantam and Pigeon Show, strong competition, every first and second in class and silver cup. California State Fair, Sacramento, 1908, 22 firsts, 12 seconds. Asiatic display, first; Bantam display first ($89 in cash.) At World's Greatest Show, World's Fair, St. Louis ($123 in cash) also New York, Boston, Chicago, Springfield, Indianapolis and Sedalia, Stock, $3 per pair and up. 1036 W. 31st St., Los Angeles, Cal.

BARRED ROCKS, RINGLET STRAIN, direct from the famous E. B. Thompson pens, New York. Have taken more prizes than any other Rocks at The Madison Square Garden Shows. For beauty, size and laying quality, unequaled. Eggs per setting $1.50 and up. Reduced rates on incubator lots. Special matings. $3.00 per setting of 15; 2 settings $5. Agent for The Potter System of Selecting the Laying Hen. Price $1.00. A. C. CISSELL, 1812 Santa Monica Ave., Los Angeles, Colegrove car to Swan street.

BUFF ORPINGTONS—BLOOD AND breeding tells. Five years careful selection for points and laying; results, first prize pullets last year and 50 per cent. egg yield during moulting season this year. Eggs, $1.00, $1.50 and $2.00. Special prices on incubator lots. E. G. WALL, 1920 Monticello Ave., Hollywood, Cal. Phone Hollywood 1943.

COLUMBIAN WYANDOTTES — WINners of more prizes than any other flock on the coast. Pen No. 1 contains ten females, the male is winner of the first and color special. Eggs $2.50 per fifteen. Will sell the pen at the real value of the male. FRANK J. IRONMONGER, Hollywood, Cal.

SILVER CAMPINES, GREAT LAYers, non-sitters, beautiful fowls, splendid foragers. Recently imported from Belgium. Eggs for hatching $3.50 per doz. Write for circulars. E. SMITH, 3610 East First St., Los Angeles, Cal.

A GOOD INCUBATOR CHEAP—I HAVE a "Petaluma" 300-egg size with all latest improvements. Used but once. Cost $40. Taken for debt. First check for $10 gets it. E. C. ROCHEFORT, Pasadena, Cal.

WHITE WYANDOTTE EGGS FROM my special bred-to-lay matings, $2.00 for fifteen; $5.00 per fifty. Express paid. A. W. HUSKINS, 713 Waterloo Street, Los Angeles, California.

WHITE ROCKS—SNOW WHITE, prize winning, bred to lay. Eggs $1.50 and $2.00 per sitting. W. E. B. SMITH, 820 Elm Ave., So. Pasadena, Cal. Phone Sunset, Main 2866.

WHITE MINORCAS (EXCLUSIVELY) —large birds, prolific layers, large white eggs, Eggs for hatching at moderate prices. L. V. PETERSON, Guerneville, Cal.

WHITE ROCK EGGS FROM MY PRIZE winners at recent Los Angeles Shows. $1.50 per 13; $3.00 per 30. J. W. WHITNEY, R. F. D. 2, Long Beach, Cal.

CHAS. E. SMITH—BREEDER OF Barred Rocks exclusively. Winners of the blue wherever shown. Eggs $3.00 per 15, stock for sale. GARDENA, Cal.

S. C. BROWN LEGHORN EGGS, $1.50 and $2.50 per 15; $5.00 and $7.00 per 100. Hens thirteen months old $1.50 each. MRS. C. H. VARY, Pomona, Cal.

"CLASSY" WHITE WYANDOTTES—won 3 1sts, cock, hen, pen, besides special cup for best Wyandotte in big Pomona Show. Eggs $2 per 15. P. J. CURRAN, Box 242, Pomona, Cal.

FOR SALE—MATED HOMER PIGEons, good, strong, healthy stock guaranteed. For prices and particulars address CLYDE W. ROHRER, Box 252, Reedley, Cal.

BLUE ANDALUSIANS, NORTHERN strain. Have bred them nine years, eggs $1.50 and $2.00 per 14; $2.50 and $3.50 per 28; $7.00 per 100, order early. L. A. WILSON, Winters, Cal.

FOR SALE—WHITE MINORCA EGGS for hatching. Day old chicks on order. Selected prize winning stock. MRS. E. BANTA, Calistoga, Cal.

PRIZE - WINNING WHITE MINORCAS. Eggs for setting, $2 for 15; $3 for 30; $6 per hundred, f.o.b. express. C. S. LANE, Santa Barbara, Cal.

FOR SALE—BABY CHICKS, ALL VArieties, 100 lots upwards. J. STANSFIELD, 3301 East 14th St., Fruitvale, Cal.

BRED TO LAY S. C. WHITE LEGhorns, strong healthy stock. Eggs $5.00 per hundred; $1.00 per 15. D. CLAYTON, Colusa, Cal.

BABY CHICKS—S. C. BROWN LEGhorns exclusively $5 per 50; $10 per 100. MRS. C. H. VARY, Pomona, Los Angeles County, Cal.

TWENTY-FIVE MAMMOTH BRONZE imported Gobblers for sale. Ten months old at $5.00; 18 months old at $7.00. J. R. SNEAD, Dixon, Cal.

HOUDAN EGGS SETTING $2.00; 100, $10.00. Fine thoganized stock. MRS. R. HEGI, Dixon, Cal.

O. L. CRANE. BREEDER OF PIT AND Cornish Indian Games. Rural No. 3, Santa Rosa, Cal.

POULTRY.

WHITE MINORCA EGGS FOR HATCHing $5.00 100. After March 15, 200 day old chicks $20.00. March 24, some prize winners. MRS. E. BANTA, Calistoga, Cal.

WHITE WYANDOTTES—EGGS FROM prize winning pen $3.00 per 15; from heavy laying hens $6.00 per 100; $4.00 per 50; $1.50 per 15. J. L. DINWIDDIE, Petaluma, Cal.

SINGLE COMB RHODE ISLAND REDS —eggs for hatching $2.00 per 15. F. D. CRAWFORD, South Dos Palos, Cal.

WHITE AND BLACK MINORCA EGGS for hatching, $1.50 for 15. Address, J. W. SILSBEE, Morganhill, Cal.

BERRY PLANTS.

STRAWBERRY PLANTS, ASSORTED, $2.00 per 1,000; Himalaya Mammoth, Raspberry and Dewberry plants $1.50 per 100; fruit trees 10 cents each. TRIBBLE BROS., Elk Grove, Cal.

WANTED—LADY THOMPSON, TEXAS, and A-1 strawberry plants, also Loganberry. State number and lowest price. None but first class plants wanted. Address, G. H. HOPKINS & SON, Burbank, Cal.

FOR SALE—BERRY PLANTS; LOgans, Giant Himalaya, Mammoth and Lucretia dewberries. Would exchange for rooted Tokay. A. P. HENNING, box 225, Cottonwood, Shasta Co., Cal.

FOR SALE—LOGAN BERRY PLANTS well rooted and very strong plants. Write me for terms. Plants ready now. Home 'Phone 2161. Z. A. WOLLAM, Riverside, Cal.

HORSES.

FOR SALE—ABOUT 200 HEAD OF work and brood mares, including young mules and horses from one year to four years of age. One full blooded Percheron Stallion four years old in May. One Jack about seven years old. Several full blooded Poll Angus Bulls and a number of full blooded Durhams. CHAS. W. HART, Farmersville, Cal.

FOR EXCHANGE—BELGIAN DRAFT Stallion for Imperial Land. Splendid pedigreed stallion. Record of get, about 80%, 6 years old, weight 2200 lbs. Price $3000. Easily worth $3500. Address F. L., Cultivator Office.

FOR SALE—GOOD RANCH TEAM, weight 1200 lbs. each, cheap. Also a good ranch and hay baling outfit. Address, C. E. GARRETT, Hynes, Cal.

TURKEYS.

WANTED—TURKEY HENS AND TURkey eggs. 25c per lb. paid for hens if delivered immediately. Address, GEO. L. T. RIVARDO, Oceanside, Cal.

HELP WANTED.

ROAD SALESMAN FOR POULTRY supplies wanted. Headquarters at San Francisco. State age, qualifications and salary desired. Address Box C, Cultivator Office.

FERTILIZERS.

NOW IS THE TIME
to fertilize for results in the coming crop.
ARMOUR'S "O.T.M.", "B.B.&P.", and "5-8-2" grow big crops and build up the soil. They have been doing it for years.
THE ARMOUR FERTILIZER WORKS, Los Angeles, Cal.

SHOPPING BY MAIL.

PURCHASE THROUGH US—WE ARE a Mail Order House. We furnish anything desired from a spool of cotton to an automobile. Send for catalog. COLUMBIA COMMERCIAL COMPANY, 204 East 9th St., Los Angeles, Cal.

ARTICHOKES.

FOR SALE — JERUSALEN ARTIchokes, the great winter hog feed. Address, FANCHER CREEK NURSERIES, Fresno, Cal.

HOGS.

REGISTERED BERKSHIRE AND POland China hogs, both sexes. C. A. STOWE, Stockton, Cal.

Have the Time of Your Life

with my Portable Billiard and Pool Tables. Send for Catalog and let me show you good, practical Tables at the price of toys. Used anywhere. No special room required. **C. RIDDERHOF**
Merchants Trust Bldg., Los Angeles

State Horticultural Commissioner Jeffrey has issued a quarantine notice putting a ban on receiving of cotton seed from that section of Texas infested with the cotton boll weevil.

HIGH PROTEIN MEATS.

Manager J. E. De Young, of the Geo. H. Croley Company of San Francisco, has arranged with the Globe Mills of Los Angeles, to act as the agency for Croley's High Protein Meats for Los Angeles. The demand from poultry people for the reliable foods of the Croley Company is increasing. The Globe people will doubtless still further enlarge the field in which these goods are used.

Household Department

MALONEY'S ST. PATRICK'S DAY HAT.

Fer three sixty-four—and in lape-year wan more—
Av the days av the long, lonesome year,
It hangs all aslant in the closet beyant,
With the sorrer caller ter cheer;
The linin' is tore and the band is all wore,
An' 'tis gray as a grandfather rat,
An' the dust settles down on the brim and the crown
Av Maloney's St. Patrick's Day hat.

It was tony and foine in the year forty-noine,
An' they called it an elegint tile;
But ye take it today, and perhaps ye moight say
'Twas a bit antiquated in style.
The brim, it is true, is a taste out av skew,
An' 'tis shedding its fur loike a cat;
An' there's spots here and there that is scraped a bit bare
On Maloney's St. Patrick's Day hat.

The dint in the roof is the place where the hoof
Av O'Brien's fool hoss put a kick;
An' that hole that looks bad is a mix-up it had
With a Donegal b'y and a brick;
Thim creases round there on the side show ye where
Big Hogan sat down on it flat.
Sure, a vet'ran, no less, like its wearer, I guess,
Is Maloney's St. Patrick's Day hat.

An' it hangs on the hook in its dusty ould nook
'Till the night of the sixteenth of March;
Thin 'tis took down and rubbed and most mortially scrubbed,
'Till it shoines loike 'twas polished with starch.
And thin, the next day, it is thrimmed up so gay
With the shamrock and green and all that,
If ye don't want to foight ye must swear 'tis all roight—
Brave Maloney's St. Patrick's Day hat.

Ah! there's years not a few since that cady was new
An' Maloney was proide av the place;
Now the hair that was red is snow-white on his head
And the wrinkles are thick on his face.
But his heart is still young, loike the brogue on his tongue,
And the p'rade wouldn't start without Pat,
Fer we think it looks grand whin it follers the band—
Ould Maloney's St. Patrick's Day hat. —Puck.

GRISETTE'S NINTH LIFE.

"CHUT!" said Mere Barbizon, shrugging her wizened little shoulders under the faded calico blouse. "Talk not to me, messieurs. I tell you Grisette must be killed entirely. Oh, but yes, entirely. Already I have given her away no less than six times. Thrice to the forester's wife, a careless one, she, who lets her come back always to me again. Thrice to Maitre Perrin up in the village yonder. Ah, the miser! One could not blame Grisette for not stopping longer in a house where there was no meat, not even on a feast day. And once I lost her, pardieu! It was in the hills the time when I went to make the little visit with my daughter. Grisette awaited me on the doorstep when I returned. La, la, she sat there licking her paws with the air of one who was always welcome. Once again she lost herself. Ah, but attendez, messieurs, she really found herself again. Of that you may be sure. It is impossible really to lose Grisette, she who eats more of my food than a man, who expects always the bonnes bouches of my table. Oui, oui, messieurs, this time it is impossible that Grisette comes back. I will no longer furnish her with comforts. If she were a dog now—but a beast of a cat, non, it is impossible."

Jack Tilton and I had run across Mere Barbizon on one of our painting trips through Normandy in early May, and now it was late June, and we still lingered under her clean, but otherwise uninviting roof, held to the place by the fascination that this particular part of Normandy always has and always will have for painter folk.

Nor were we partial to Grisette, the huge gray cat, that had—so she averred—become the bane of Mere Barbizon's existence. Once she had whisked her tail across a study of coast, which I thought particularly fine, and which I had some idea of sending to the salon, and once she had played havoc with Jack's brushes. No, we would have no reason to regret Grisette, but we wanted to see fair play. Your French peasant has a heart of flint at times, and Mere Barbizon was no exception, as we had found out on more than one occasion.

Jack, who was lazily cleaning his brushes, looked over his shoulder at this point, and said between the teeth that held his pipe: "See here, Mere Barbizon, I'll get rid of that fat rascal for you. This very night, after dark, eh? And it shan't cost you a sou."

"Tiens, Monsieur Tilton, what would you do with the cat, eh!" asked the old woman, anxiously.

"Oh, I'd drown her," answered Jack carelessly. "A good big bag, a little coaxing, and we'll have her fast enough. Then we'll row out to the nets, you and I, and drop her overboard. Adieu, Grisette! See?"

"Bien," muttered Mere Barbizon. "I go at once to find the bag."

It was growing dark when Jack, carefully carrying the bag over his shoulder and followed by Mere Barbizon and myself, an amused onlooker, marched down to the beach and manned a little skiff with his motley crew. "Sit there," he called to Mere Barbizon, "where you can watch to see that Grisette plays no more tricks on you."

Silently we pulled out upon the silent water, gray now as a dove's wing and growing grayer with the advancing dark. Now and then a sigh broke from Mere Barbizon, but whether at the beauty of the night or as preliminary to the sad rite about to be performed, it was impossible to tell. Her wrinkled chin was huddled in her hands, her eyes were fixed on the bag at her feet. If she had not been ashamed to show emotion over a creature that she herself had condemned to death I think she would have given poor Grisette at least a farewell pat.

Presently Jack stopped rowing and pulled in his oars. "The time and the place," he said, solemnly uncovering. "If you have words to say to the about-to-be-departed, Mere Barbizon, say them now."

"Tiens! What have I to say" murmured Mere Barbizon. "Has she not always had the best? I have no reproaches, I, for one who has eaten the very roof from my head, the floor from my feet. Mechante! Let her go,

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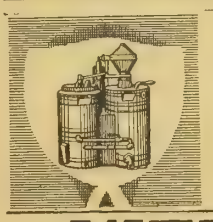

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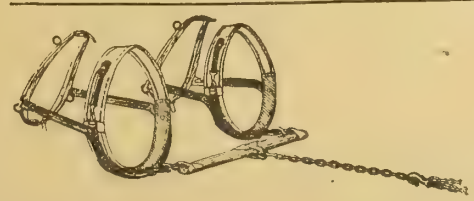

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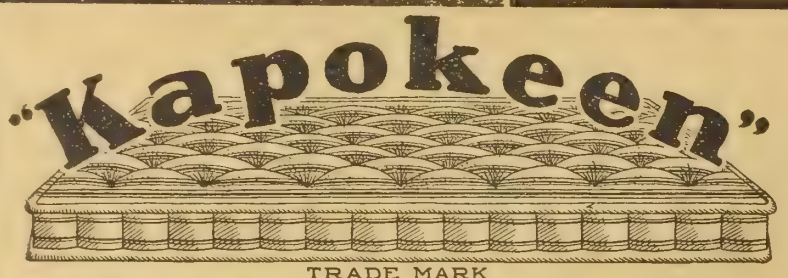

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messieurs. I shall not weep." But her voice broke nevertheless, for at the last words Jack was standing up with the bag in his hands. He dropped it heavily over the boat's side and it slid from sight in a moment.

It was quite dark when we beached the boat and turned up the narrow little paved way that led to the cottage; but not too dark to see even a darker shadow rise from the step, stretch to the very tip of its inky tail and walk majestically down to meet us.

"Mere de Dieu!" cried the old woman, crossing herself. "We have drowned her, and behold, she resurrects herself!"

"Eight times she has been lost, given away, killed off," broke in Jack, sadly. "Eight times. Mere Barbizon, it is plain to see that Grisette is now entering upon her ninth and last life."

"Mere de Dieu!" chattered the old woman again. "Behold, messieurs, a miracle, is it not? This time assuredly Grisette shall die as Monsieur le bon Dieu wishes," and still crossing herself, she hurried away for the favorite tid-bit.

"What was in the bag?" I asked Jack.

"Stones," he answered, cheerfully.

About the House

Citron.

Regarding the preserving of citron which appeared in this department recently, Mr. C. E. Rumsey of Riverside writes:

"In household department this is replied to—but only partially. It is too much work for housekeepers to put up dried citron, but it makes delicious preserves. Cut it in small slices—leaving skin on each slice and soak it a while in hot water to take the bitterness out—then cook in syrup pound for pound and you have a most delicious highly flavored preserve. Any ginger or lemon changes the flavor. If the soaking is just enough to take out the bitter and leave all the flavor that you get when you scratch the skin of fresh fruit, it will be something new to most people. I think the highest flavor is before the fruit turns too yellow, but it is good even then. The bitterness varies with its age, and it is best to experiment about soaking. Do not cut slices very thick.

If you want halves like dried citron, it must be cooked in five per cent syrup, then ten per cent, then stronger, or it will not "cook in." If citron for cake is wanted, take some of these slices out of syrup and dry a little. It is as good as that bought, and far easier to prepare."

A COUNTRY CLUB.

Some time ago I chanced to be a guest at a club meeting which was called a domestic science demonstration. Every woman had work of some kind, embroidery or fine stitchery, buttonholes, or darning, and all freely compared notes as to methods and prices. Towards five o'clock three of the women slipped away and prepared the supper. Every one had contributed something, so the three did not have so very much to do to get it on the table in hot and appetizing form. I remember we had chicken pie, mashed potatoes and coffee, besides relishes of various kinds. Each woman present afterward answered a sort of club roll call by giving something from her experience

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as housekeeper, some easier way of doing a little daily task, some prized recipe, some "trick of the trade" in short. No one was keeping a note-book although it seemed to me that a little bride who was a member would have gladly done so from her frantic efforts to get exactly all the directions of the older housewives.

At half past six the women went home. I asked how their husbands liked this arrangement and they said they bribed them to good-nature when forced to eat a cold supper occasionally by giving them a big club dinner every three months. Several of these women drove three and five miles to attend. They all said the club meant a great deal to them and they wondered why they had gone so long with no outing except to church and occasionally to a neighbor's. Now there was always something to look forward to and the expectation stimulated them so it was a pleasure to work a little harder and so make time for the fortnightly holiday.

I wish I could make the pleasures of that afternoon vivid enough to other women so that they would arrange to have these joys of club life, of companionship, exchange of ideas, of mutual improvement and individual pleasure, too. It is such a simple matter to start such a club that I wish those of the Cultivator readers who do not have something of the sort already would ask half a dozen of the congenial women who live within a few miles of each other to meet together some afternoon and try it. You will find the easiest thing about it is to enlarge the membership later on.—C. S. M.

BUTCHERING TIME RECIPES.

Mrs. J. R. King of Gridley, has heretofore furnished some excellent hints to Cultivator readers, and now sends the following Butchering Time Hints:

Brains.

For a breakfast dish, add one cup of chopped, parboiled brains to a four-egg omelet; or to scrambled eggs; or to creamed potatoes.

Mock Oysters.

Take parboiled brains, cut in small pieces, dip in egg and cracker dust and fry till brown. Serve with sliced lemons.

Horseradish Sauce.

One-half cup of thick sour cream mixed thoroughly with one dessert spoonful of evaporated horseradish. Cover and let stand ten minutes, then add a tablespoonful of vinegar.

Meat Jelly.

Not every country cook realizes that the liquor from boiled pigs feet may be strained and set away for use in the place of gelatine in vegetable aspics. Take the desired quantity of the jelly when it is set and add seasoning. Heat and pour into small moulds decorated with slices of hard boiled egg or little red radishes. Let stand over night, and then turn out on lettuce leaves. Makes a decorative dish for the Sunday dinner table.

Crackling Cornbread.

Sift one teaspoonful of soda with half cup of flour into one pint sour milk. Add salt to taste and one cup of finely chopped cracklings, with sufficient cornmeal to make a thin batter. Bake in well greased gem pans, or as thin pone.

Dutch Apple Cake.

When moulding the bread for the pans, reserve a pint of the light dough. Add half cup of sugar, lard size of egg, and knead well. Spread in well greased pan in a flat thin loaf about one and a half inches thick. Cover the top with pared slices of tart cooking apples—be sure they are a good baking kind. Sprinkle generously with sugar, cinnamon and dots of butter. Let rise and bake carefully as the sugar is likely to cause the loaf to burn. Serve cold with pork chops and coffee for a fine breakfast, or hot with a bowl of whipped cream for a hearty dinner dessert.

Lye Hominy.

Take one quart of best white flint corn. This will make over two quarts of hominy. Put on to boil with plenty of water to which is added two heaping tablespoonfuls of powdered lye. Let boil till the dark flake at the base of each kernel is eaten loose, and the corn is somewhat softened. Be sure this part of the process is well done. Then wash in running water till the dark flakes all float off leaving the corn clean. This requires several barrels of water. Then boil in several waters until the lye is all washed out of the corn, and so continue until the hominy is thoroughly cooked. This will keep some time in cool weather, and is liked nicely browned in bacon drippings.—Mrs. King.

WHAT THE EMMANUEL MOVEMENT REALLY IS.

"What is this idea that has aroused a storm of opposition and approval from one end of the country to the other?" says Woman's Home Companion for March, and then proceeds to answer its own question completely and effectively. The movement, started by Doctor Worcester in Emmanuel Church, Boston, has spread, until now it embraces seventy-five churches. It is brought out plainly in this article that, while the mind's influence over the body was demonstrated centuries ago, the Emmanuel Movement is an absolute departure, because it is a combination of religion and medicine—the physician and the minister working hand in hand to relieve the sufferings of mankind. Every step of the movement has been undertaken under the auspices of the physician. Its great value to the church is brought out clearly. In this March issue, Dr. William B. Parker says, in part:

"Its significance to the church is hard to overestimate. It means turning the minds of men back to the church for practical help and succor. To the teacher, the student, the reader, the thinker, it means having a new topic added to his interests, a new region opened to development. It is comparable to the popular discovery of psychology twenty years ago, when that became the most interesting subject of reading in the world. It means clearing away mist and confusion from a subject of great importance and letting in new light upon the working of our minds. It means strengthening each man's confidence in his ability to help himself and his fellows. To the clergyman it has given an effective argument for the power of the spirit, the efficacy of prayer and the presence of God. To the medical profession it has done perhaps the greatest service in checking, if not curing, the materialism which was so general in its ranks."

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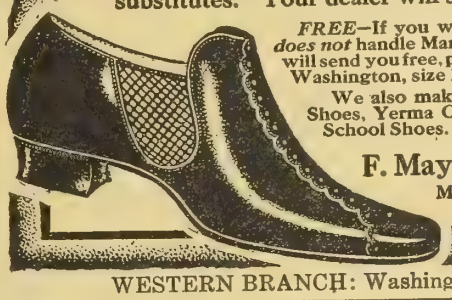

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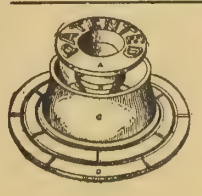

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Los Angeles Markets

LOS ANGELES, March 17, 1909.

Butter.

The green feed has finally had its influence and supplies of butter have greatly increased which with the help of the bears has caused a heavy slump in all grades of butter.

Produce Exchange wholesale quotations are as follows with actual selling price to the trade 2½c advance on Extras.

Creamery ex per roll	57½
Firsts	55
Eastern Creamery Ex	55
Cooking	25
"Butterine"	16@20

Cheese.

Southern California Anchor	17
Northern fresh	17
Anchor, Young America	18
Longhorn	22
Eastern singles	17
Cheddars	17
Swiss	20
Imported Swiss	30
Daisy	17½@18
Limburger	21
Oregon triplets	18
Twin	17

Eggs and Poultry.

Eggs stand exactly as last week with no market feature. Receipts are heavy and the supply meets demand at this writing.

Eggs local candled	22
Eggs case count buying price	20

Dealers pay for live stock.

Hens per pound	15@16
Young roosters per pound	18@20
Fryers per lb	23
Broilers per lb	25
Roasters	18@20
Old roosters	8
Turkeys	18@23
Geese	15
Ducks	15
Squabs	1.25@1.75

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs from 175 to 200 pounds	6½@6¾
Prime steers	4¾@5
Heifers	4@4½
Calves per pound	5
Sheep ewes per head	3.75@4.00
Lambs per head	3.00@3.75
Wethers	4.50@5.00

Potatoes.

Wholesale prices are:

Sweets per ctl	1.75
New per lb	5@7
Early Rose local	1.50@2.75
Early Rose northern	2.50@2.75
Burbanks local	2.50
Lompocs	2.50
Highland fancy	2.00@2.25
Highland choice	1.70
Salinas	2.50
Idaho's	1.75@2.00
Oregon Burbanks	2.25
Nevada's and Utah's	1.75@2.00
Colorado's	1.75@2.00
Sweets choice	1.00

Onions.

Wholesale quotations:

Australian Brown northern	2.00@2.50
Australian Brown local	2.50
Danvers	2.00@2.50
Silverskins	2.50
Oregons	2.50
Nevada's	2.75
Utah's	2.50
Red Globe	2.00@2.50
Garlic	10@12

Vegetables.

Artichokes per doz northern	90
Artichokes locals	50@65
Asparagus green	12½
Asparagus per lb white	9@11
Beets per sk	1.25
Bell peppers per lb	30@45
Beans string	15@25
Beans Limas per lb	8@10
Brussels sprouts per lb	15
Cabbage per sk	1.75
Chili per lb	25
Celery per crate	3.25@4.00
Chili per lb	18@25
Chili dried	9@10
Chicory per doz	50
Cucumbers per box hot house	75@2.50
Cauliflower per crate	3.00@3.50
Carrots per sk	1.25
Green onions per doz bunches	15@25
Horseradish per lb	12
Lettuce per crate	1.50@1.75
Lettuce choice	50@75
Mushrooms per lb	35
Oyster plant	50
Peas per lb	8@12
Parsley doz	20
Parsnips	35@40
Rhubarb	75@90
Rhubarb Northern per box	1.75@2.25
Radishes per doz	15@20
Summer squash per box	1.00@1.25
Spinach per doz	20@25
Turnips sack	1.00
Tomatoes crate	1.75@2.00

Citrus Fruits.

Navels fy	2.00@2.50
Navels ch	1.25@1.50
Tangerines halves	1.60
Grapefruit seedless	3.00
Grapefruit seedlings	2.25
Lemons fy	1.50@2.00
Lemons ch	1.00@1.50
Limes half box	1.50@2.00

Fresh Fruits.

Wholesale prices on the market are:

Baldwins 4 tier	1.35
Bellflowers	1.15@1.25
Newton Pippins	1.25
Red Pearmains	1.25@1.35
W W Pearmains	1.50
Spitzenberg	2.50
Jonathans	1.75
Grapes Red Emperors	1.50@1.75
Guavas per lb	6@8
Cornichons	1.25
Guavas	6
Loquats per lb	15@20
Malagas imported per keg	14.00
Pears box	1.75@2.00
Pomegranates per box	1.75
Raspberries	40
Strawberries fy	12
Strawberries ch	8

Dried Fruits.

Wholesale prices are:

Apricots	8@10
Evap. apples fy per lb	7½@8
Figs loose white	5
Figs blk	5
Peaches in boxes	7½
Peaches sacks	6@7
Pears	9
Plums pitted	8@9
Nectarines	7½@9
Prunes 30's to 40's boxed	8
Prunes 40's to 50's	7½
Prunes 50's to 60's	7

Beans Dried.

Wholesale prices are:

Limas per ctl	4.50
Pink No. 1	3.25
Lady Washington	5.00
Small white	5.75
Black eyes	3.75@4.00
Garvanzas	4.00
Lentils California	7.00
Lentils German	8.00
Bayou	3.50

Nuts.

Almonds IXL per lb	14@15
Ne Plus Uutra	14
Pecans polished	16@17
Peanuts Virginia	6½@7
Peanuts California	5½@6
Walnuts No 1	11@12
Chestnuts	8@8½

Honey.

Wholesale quotations:

Extracted water white	8
Extracted Light Amber	6½@7
Comb W W	16
Comb white	15
Beeswax	30

Hay.

Prices paid to producers f. o. b. Los Angeles are as follows:

Barley No 1	21.00@23.00
Barley No 2	18.00@20.00
Alfalfa northern per ton	14.00@15.00
Alfalfa local	15.00@18.00
Tame Oat No 1	22.00@24.00
Wheat No 1	18.00@21.00
Wheat No 2	18.00@20.00

Grains.

Wholesale selling price f. o. b., Los Angeles.

Wheat new per ctl	2.00
Kaffir corn	1.80
Corn Eastern sacked	1.75
White oats	1.90
Seed Rye	1.80

Feed Stuff.

Wholesale selling price f. o. b., Los Angeles:

Cracked corn	1.80
Shorts	1.80
Bran	1.65
Oil cake meal	2.50
Feed meal	1.85
Rolled barley	1.55

San Francisco Markets

SAN FRANCISCO, March 17, 1909.

Butter.

Butter has been compelled to undergo an almost daily decline and now stands at 4 cents under last week's quotations. At present a stronger tone prevails and the tendency favors the producer.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras per lb	34
California firsts	33
California seconds	32

Cheese.

California flats fy	15
Firsts	14
Cal Young American fy	15
Firsts	15
Seconds	11½
Young American Oregon fy	16½
Eastern N. Y. Cheddars fy	17½
Oregon flat fy	14½

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

Eggs and Poultry.

Eggs not in best demand but hold the same prices as last week.

Official quotations of the S. F. Wholesale Dairy & Produce Ex. are:

Fresh ranch extras	23
Eggs first per doz	22½
Eggs second	21½
Eggs thirds	20½
Hens per doz	5.00@7.00
Hens extra	7.00@10.00
Young roosters	8.00@9.00
Old roosters	4.50@5.50
Fryers per doz	7.00@8.00
Broilers per doz	5.00@6.50
Geese per pair	2.00@2.50
Goslings per pair	1.75@2.00
Ducks young	6.00@8.00
Live Turkeys	17@19
Dressed Turkeys	18@22
Pigeons young	2.00@3.00

Live Stock.

San Francisco prices gross weight:

Steers No 1	5¼@5½
Do second quality	4½@5
No 1 cows and heifers	4@4¼
Second quality	3½
Hogs 100 to 140	6¾
Hogs 140 to 250	7
Rough heavy	4½@5
Calves per lb	4@5½
Lambs yearlings	5½@6
Wethers No 1	5¾@6
Ewes No 1	5@5½

Potatoes.

Wholesale market quotations:

River white fy sacks	1.25@1.50
Early Rose	1.85@2.00
River Burbanks	1.35@1.50
Salinas Burbanks	1.85@2.00
Lompoc Burbank	1.75@1.90
Sweets per crate	1.75
Oregons	1.75@1.90
New potatoes	4

Vegetables.

Wholesale quotations:

Asparagus per lb	9@10
Bell peppers per lb	25
Brussels sprouts per lb	3@5
Cabbage sk	1.50
Cauliflower doz	65@75
Carrots per sk	65@75
Celery per doz	50@60
Cucumbers per doz	1.25@1.75
Chili peppers per lb	20@25
Egg plant per lb	30
Green peas per lb	8@12½
Mushrooms per lb	12½@25
Marrowfat squash per ton	20.00@25.00
Squash cream per box	50@65
Onions green per box	65@85
Rhubarb per box for bay	1.25@1.75
Rhubarb, Southern per box	1.00@1.25
String beans	10@12½
Tomatoes box Mexicans	1.00@1.50
Wax Beans	10@12½
Garlick new	9@12½

Onions.

Onions Oregons	1.85@2.00
New green per box	75@1.00

Citrus Fruits.

Navels fy	2.25@2.50
Tangerines per crate	1.00@1.50
Mandarins	75@1.00
Grapefruit seedless	2.00@3.25
Grapefruit seedlings	1.00@2.00
Lemons ch	1.50@2.00
Lemons fy	2.00@2.75
Limes	7.50@9.00
Limes Cal sm box	1.00@1.25

Fresh Fruits.

Bellflowers	85@1.10
Bellflowers No 2	50@85
Spitzenberg	1.25@2.00
Newton Pippins	1.25@1.60
Ben Davis	1.25@1.50
Winter Nellis	1.25@1.50
Other Kinds	75@1.00
Strawberries L. A. per crate	1.50

Dried Fruits.

Prunes 4-size basis	2½@3
Santa Clara	3¼@3¾

½c premium for larger sizes

Apricots per lb; Choice 8½; fancy 7@10.

Peaches—Choice	4; fancy 6½
Apples evap	6@7
Pears	4@8
Figs	2½@4
Nectarines	5@6
Pitted Plums	7@8

RAISINS—1908 crop, f. o. b.: Clusters and Layers, 20-lb bxs—Imperial Clusters, 6-crown, $2; Dehesa Clusters, 5-crown, $1.75; Fancy Clusters, 4-crown, $1.40; London Layers, 3--crown, $1.15; do, 2-crown, $1.05. Seeded, 25-lb bxs—Fancy bulk per lb, 5¼c; Choice bulk, 5c. Loose Muscatels 50-lb bxs—Standard, 4-crown, 4c; do, 3-crown, 3¼c; do, 2-crown, 2¾c; Seedless, 3½c. Seedless Sultanas—Unbleached, 4¼c. Thompson Seedless—Unbleached, 4¾c. Dried Grapes, 2½c.

Nuts.

Walnuts S S No 1	8@12½
Walnuts No 2	6
No 1 Standard	8½
No 2 Standard	4½@6
Almonds Nonp	11½
Almonds IXL	10½@11
Ne Plus Ultra	9½
Drakes	8½@9
Chestnuts	9½@14
Peanuts Cal	5½@6

Beans Dried.

Limas	3.75
Pink	2.60@2.65
Small white	5.25
Large white	4.25
Black eyes	2.90@3.00
Red Kidneys	3.50@3.75
Garvanzas	3.00@4.00
Bayo	3.35
Horse beans	1.75@2.00
Cranberry	2.25@3.40

Hops.

Hops 1908 crop	6@8
Old crop	1@3

Honey.

White comb	12@14
Light Amber	8@11
Exracted W W	7@8
Extracted light amber	5½@6
Beeswax No 1 per lb	28@30
Beeswax No 2 per lb	23@25

Hay.

1909 crop contracted for at 10@11½.

Scott & Magner say business locally in San Francisco is excellent and picking up. The demand for hay is good and arrivals are taken care of just as fast as they come in. The interior demand is not quite as strong as it has been, owing to the increase in the pasturage as the good weather has improved the green food.

A careful canvass of the situation seems to indicate that the market will not reach any higher point, and that there is a sufficient demand on hand to carry us through until the new crop begins to come in. All grades of hay sell apparently equally well, with the exception of the poorer grades of alfalfa and stock hay.

Alfalfa continues to sell readily, but there is an apparent weakness in the alfalfa market, and a feeling that the demand will drop off now very suddenly, as the users are able to take the green grass instead.

The general range of prices on today's market is as follows:

Choice wheat hay per ton	23.00@26.00
No 1 wheat or wheat & oat	21.00@24.00
No 2 wheat or wheat & oat	17.00@20.00
Choice tame oat	22.00@24.00
Other tame oat	20.00@23.00
Wild oat	19.00@22.00
Stock hay	11.50@14.00
Alfalfa	16.00@18.50
Straw per bale	60@80

Grains.

Wheat No 1	1.90@1.95
Barley	1.42@1.47½
Corn small	1.80@1.85
Oats white	1.85@2.00
Oats gray	1.80@1.90
Rye new crop	1.80@1.85
Corn Egyptain	1.60@1.65
Alfalfa seed, Cal	16@18
Alfalfa seed, Utah	18@19
Mustard yellow	6.00

Feed Stuff.

Bran per ton	19.00@30.00
Feed cornmeal per ton	37.00@38.00
Cracked corn per ton	38.00@39.00
Rolled barley per ton	30.00@31.00
Oil cake meal per ton	38.50@40.00
Cocoanut cake per ton	25.00@26.00
Middlings	33,00@35.00
Shorts	31.00@32.50

Citrus Market

LOS ANGELES, March 17, 1909.

Oranges are going forward rapidly but as noted last week at prices not as satisfactory as a few weeks since. No promise of immediate betterment appears, though it is hoped that as soon as warmer weather comes in the East and push carts can get out that improvement may be made.

Lemons are moving forward and at satisfactory prices.

Shipments.

Total shipment to date 12,144 cars of which 10,391 cars were oranges and 1,753 lemons.

NEW YORK, March 15.—Fifty-one carloads of oranges and three carloads of lemons sold. Navels in good demand when of good quality, but ordinary stock is dull. Market easier and lower.

NAVELS—	Avearge.
Titus Ranch, San Marino G P A	2.40
El Toreador do	2.20
Flamingo Cal Cit Union	1.85
La Mesa Riv Ft Ex	2.40
Golden Rule do	2.30
Alta Cresta AH Ft Ex	2.75
Robusta do	2.45
Red Shield ACG Ft Ex	2.05
Green Crown do	1.65
Golden Orange AH Ft Ex	1.50
Homer QC Ft Ex	2.45
Family do	2.20
Gold Buckle RH Ft Ex	2.50
Lochinvar do	2.40
Blue Globe Riv Ft Ex	2.65
Red Globe do	2.35
La Mesa do	2.35
Mt. Baldy do	2.20
Castle do	2.05
Crocus SB Ft Ex	2.20
Homer QC Ft Ex	2.45
Family do	2.25
Alhambra ST Ft Ex	2.30
Blue Globe Riv Ft Ex	2.50
Red Globe do	2.30
Royal Knight RH Ft Ex	2.20
Tiger SB Ft Ex	1.90
Floral do	2.05

Cream Separators, all sizes, all prices. O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

Red C Covina Ft Ex 2.45
Queen Bee QC Ft Ex 2.30
Pet SA Ft Ex 2.10
Greyhound do 2.00
Quail OK Ft Ex 2.20
Iris DM Ft Ex 2.50
Violet do 2.20
Fiesta Riv Ft Ex 2.20
Orchard Run 2.40
Signal Stewart Ft Co 2.15
Solano do 2.10
Clover Red O Assn 2.00
A-One E Peycke Co 2.00
NAVELENCIAS—
Ata Cresta AH Ft Ex 2.75
Robusta do 2.55
BLOODS (BOXES)—
Palm Tree AH Ft Ex 2.10
Alhambra ST Ft Ex 2.30
Queen Bee QC Ft Ex 2.50
Royal do 2.30
Uncle Sam Riv Ft Ex 2.45
Fiesta do 2.25
TANGERINES (HALVES)—
Blue Seal 1.40
Golden Orange 1.30
Palm Tree 95
Bear 1.65
Quail 1.10

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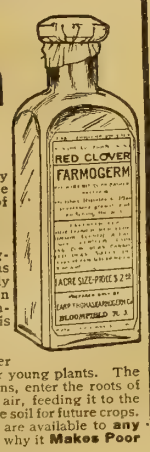

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Let us show you the **sure** way to supply your soil with enough nitrates to produce several bumper crops at the low cost of $2.00 an acre, and with practically

No Extra Work

You can use Farmogerm with any legume—Alfalfa, all the Clovers, all Peas and Beans, etc. It is put up in specially sealed bottles, **guaranteed** to contain enough bacteria of strong vitality to inoculate the seed or soil specified. It is

Ready For Use

when you get it. Just mix with water and moisten seed or spray seed bed or young plants. The bacteria multiply rapidly by the millions, enter the roots of the plants, draw nitrogen from the air, feeding it to the growing crop or storing still more in the soil for future crops. All the nitrates they store in the soil are available to **any kind** of crop you plant next. That's why it **Makes Poor Soil, Good Soil.**

Send for proofs or prove it yourself by making a

Box Test For 10c

When you **know** what Farmogerm will do, you will use lots of it. That's why we offer a trial for 10 cents—enough to make a test in boxes in your house before planting season. In regular sizes, $2.00 an acre: Garden Size, 50 cents.

Write For Free Book No. 37. which gives full information. Or send 10 cents for trial size, or more for larger amount, mentioning crop you want it for. For sale by leading seed houses.

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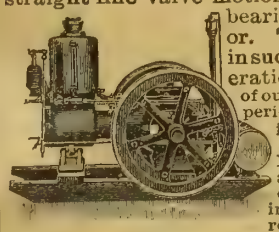

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Seven sizes: 1½ to 16 H. P. Stationary and portable.

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SAN FRANCISCO - LOS ANGELES - PORTLAND - SEATTLE

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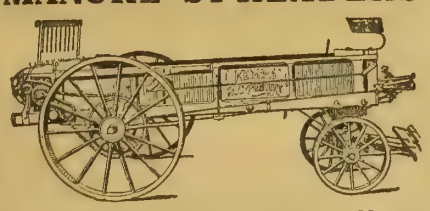

Ranchers and orchardists interested to Manure Spreaders will receive valuable information and catalogues by addressing us on this subject. We carry these spreaders in stock ready for immediate delivery.

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If you want to sell property which you own in the U. S. or Canada, such as a **FARM,** town property or business, send 25c at once for our new successful plan whereby you may secure cash buyer for your property direct without paying any commission to anyone. If you want to buy property of any kind in any locality, write us stating what and where you wish to buy, and we will send you FREE our selected list of choice bargains for sale direct by the owners with no commission added.

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FREE 12 Page Catalogue, of all kinds of raw furs, cotton, tanning horse and cattle hides for robes, coats, harness and lace leather. With 90 trappers aids and tricks. LARGEST DEALERS in the U. S. Write us before selling elsewhere. It will pay U.

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Blue Globe 1.20
Tiger 1.15
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Bear special 1.35
Quail special 1.10
Lion Head 1.15
LEMONS—
Naralimo Sparr Ft Co 2.15
Circus do 1.90
Independent Growers' 2.65
Independent do 2.25
Homer QC Ft Ex 2.45
Camel do 2.10

CINCINNATI, March 15.—Weather cool. Market is weak. Four cars navels, one car lemons and two cars Florida oranges sold. There are six cars on track.

NAVELS—	Average.
Log Cabin Loveless F C Escondido	1.85
Palomar do	1.95
Cougar Covina Ft Ex Covina	1.75
Pico St Ft Ex Whittier	1.50
Conqueror Xc Ind Ft Co	2.15
LEMONS—	
Greyhound SA Ft Ex San Dimas	2.10

ST. LOUIS, March 15.—Ten cars sold. Weather favorable. Market is weak. Twenty cars navels and two cars lemons on track.

NAVELS—	Average.
Fiesta Riverside Ft Ex Pachappa	2.15
Yankee Doodle A Ft Ex Highgrove	1.95
Lochinvar AH F Ex E Highland	2.35
Belt do	2.15
Searchlight SS Ft Ex Orange	2.00
El Modena SS F Ex El Modena	1.95
Orchard National Orange Co	2.30
Standard do	2.15
Conqueror Independent Ft Co	1.80
Citrus Belle do	1.60
LEMONS—	
Loma Limoneira Co	2.00
Club ST Ft Ex Colegrove	2.25
Coral SB Ft Ex Yerke's Spur	1.90

BOSTON, March 15.—Thirty-one cars sold. Weather favorable.

NAVELS—	Average.
Pine Cone SB Ft Ex Highands	2.45
Sunside S Paula C F A S Paula	1.80
Quality St Ft Ex Nordhoff	2.20
Golden Orange AH Ft Ex Arlgtn	2.30
Alta Cresta AH Ft Ex Pachappa S	2.60
Robusta do	2.45
Hobo do	1.45
Quail OK Ft Ex	2.15
Queen Bee QC Ft Ex Corona	2.30
Royal do	2.20
Laurel do	2.50
Lily do	2.30
Lochinvar RH Ft Ex E Highlands	2.30
Royal Knight RH Ft Ex Highlds	2.20
Blue Globe Riverside Ft Ex	2.40
Red Globe do	2.20
Zebra TCC Ft Ex Lindsay	1.85
Full Value do	1.75
Rey ST Ft Ex Fernando	2.45
Tunnel do	2.30
George Washington Riv Ft Ex Riv	2.35
Martha Washington do	2.20
Elephant Or OG Cash Assn	2.75
Orchard Or National O Co	2.75
Rose Xg Red O Assn	2.45
Trophy Xf Cal Cit Union	2.40
Independent Fy Growers' Ft Co	2.35
Standard do	2.25
TANGERINES, (HALVES)—	
Orchard Or National O Co	1.25
Lion Head Xf I L Lyon Sons	1.05
Sugar Loaf Ft Ex	1.15
Rey ST Ft Ex Fernando	1.30
Squirrel AH Ft Ex Arlington	1.00
Beak OK Ft Ex	1.60
SEEDLINGS—	
Zebra TCC Ft Ex Lindsay	1.85
LEMONS—	
Old America	1.85
Big R SB Ft Ex Rialto	2.20
Yacht do	1.75

PITTSBURG, March 15.—Seventeen cars sold, sixteen on track.

NAVELS—	Average.
Orchard National Orange Co	2.60
Standard do	2.30
Conqueror Independent Ft Co	2.10
Queen fancy	1.60
Top Sparr Ft Co	1.65
Circus do	1.60
Titus Ranch San Marino G P A	2.35
A-1 E Peycke Co	2.05
Deal do	1.80
Aurora do	1.90
Deal do	1.70
Gold Leaf RH Ft Ex Redlands	1.95
Pointer ACG Ft Ex Glendora	2.05
Green Crown ACG Ft Ex Azusa	1.90
Red Globe Riv Ft Ex Riv	2.15
California Orange do	2.00
Violet DM Ft Ex Monrovia	2.20
Jasmine do	2.10
Braeside Riv Ft Ex Riverside	2.10
Fancy do	2.20
Canoe SA Ft Ex Pomona	1.95
Greyhound SA Ft Ex N Pomona	2.20
Morning Glory do	2.05
LEMONS—	
Circus Spar Ft Co	1.50
Senorita do	1.10
Whittier ST Ft Ex Whittier	2.15
Pico do	1.90

PHILADELPHIA, March 15.—Fourteen cars navels, two mixed cars, one car seedlings and one car lemons sold.

NAVELS—	Average.
Native Sons King Ft Co	2.52
Native Sons do	2.38
Rialto Girl, Growers Ft Co	2.32
Rialto Girl do	2.29
A-1 E Peycke Co	2.31
Conqueror Independent Ft Co	2.10
Lone Palm McGowan & Willard	1.65
Beach do	1.61
Planet SS Ft Ex Orange	2.13
Sugar Loaf Riv Ft Ev Highgrove	2.24
Highgrove do	2.14
Red C Covina Ft Ex Covina	2.50
Cougar do	2.21
Blue Globe Riv Ft Ex Riverside	2.39
Red Globe do	2.31
Crocus SB Ft Ex Y Spur	2.40
Orchard Run SA Ft Ex Pomona	2.30
Canoe do	2.25
Humming Bird Riv Ft Ex Riverside	2.33
Riverside Orange Riv F Ex Riv	2.31
Orchard Run SA Ft Ex Pomona	2.31
Pointer ACG Ft Ex Glendora	2.28
Pomona SA Ft Ex Pomona	2.32
BLOODS (HALVES)—	
Stag ACG Ft Ex Ex Glendora	1.43
Native Sons Kind Ft Co (boxes)	2.50
SEEDLINGS—	
A-1 E Peycke Co	98
TANGERINES (HALVES)—	
Fancy	1.31
Stag ACG Ex Glendora	1.39
GRAPEFRUIT—	
Stag ACG Ft Ex Glendora	1.40

CLEVELAND, March 15.—Weather cool.

NAVELS—	Average.
Canna, S. B. Ft Ex Yerkes Spur	2.10
Gold Buckle RH Ft Ex E Highlds	2.85
Lochinvar do	2.35
Braeside Riv Ft Ex Riverside	2.10
Gavilan do	2.40
Golden Rule Riv Ft Ex Riverside	2.10
Castle do	1.85
Mt Baldy do	2.00
Carmencita St Fe Ex Fullerton	2.10
Colombo do	1.85
Red Globe Riv Ft Ex Riverside	2.30
Swan Riv Ft Ex Riverside	1.95
Cal Orange do	2.00
Queen QC Ft Ex Corona	2.05
Robin Fy Spence Ft Co	1.65
Wreath do	1.60
Red Skin	1.85
MALTA BLOODS—	
Queen QC Ft Ex Corona	2.35

A HINT WORTH HEEDING.

Many of our readers know, by reputation at least, Mr. Geo. T. Powell of Ghent, N. Y., who is President of the Agricultural Experts Association. It appears that in 1907 Mr. Powell made a practical test of Farmogerm, the nitrogen gathering bacteria culture, that has attracted much attention of late. In 1908 Mr. Powell reported his experience as follows:

"I planted Red Clover last year, treated with Farmogerm, and it was greatly benefited. This year I planted corn on the same land, and on adjoining land. The corn on the land where the inoculated clover was grown was much better and matured earlier."

All reports show that. It is used by simply mixing with water and moistening seed, spraying over soil or young plants. It comes in a specially sealed bottle and keeps for months. An instructive book about soil inoculation and Farmogerm particularly may be had free by writing to the Earp-Thomas Farmogerm Co., Bloomfield, N. J., and requesting a copy of their free Book No. 37.

DEMONSTRATION TRAIN—INSTITUTE ON WHEELS.

(Continued from Page 314.)

hall or church, as was the case in Pomona, and a regular farmers institute held. Either Prof. Clarke or Commissioner Jeffrey presided. Mr. Graham of the railroad company usually presented the matter of the institute train, why the railroad people considered it wise to lend this encouragement to the farmer. He showed that the farmer's interest was the interest of the railroad in the production of large crops.

Pres. Benj. Ide Wheeler of the State University usually followed, and his address was always genial and one of the most interesting of the session.

Prof. Babcock spoke on methods of combating plant diseases, laying special stress on the advisability of breeding resistant and immune varieties instead of making direct attack on the disease itself. This method has been followed with the melon blight and the walnut blight.

Prof. Loughridge spoke of the needs of California soils, from which we will quote in a later Cultivator, as we will of the talk of Dr. Haring on Sanitary and Certified Milk. Commissioner Jeffrey and Mr. Ehrhorn spoke of the work accomplished by the State Commission and of the necessity of ever increasing watchfulness to prevent the entrance of new pests to our state.

The most regrettable feature of the trip has been the lack of attendance in some of the towns visited. The perfect weather and the necessity of cover crops being turned under, together with other duties which come at this time of the year have made life so strenuous for the farmers that many could not break away from the plow to visit the train. Besides, many have not known of it, owing to the short time allowed for the announcement after the dates were definitely fixed. But with it all there will be a great uplift to the farmers who have been able to visit the cars and doubtless there will be greatly increased production as a result of this service given to the farmers of California by the big corporation, the University and the Commission.

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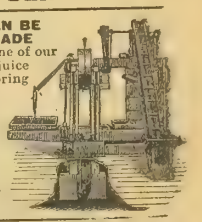

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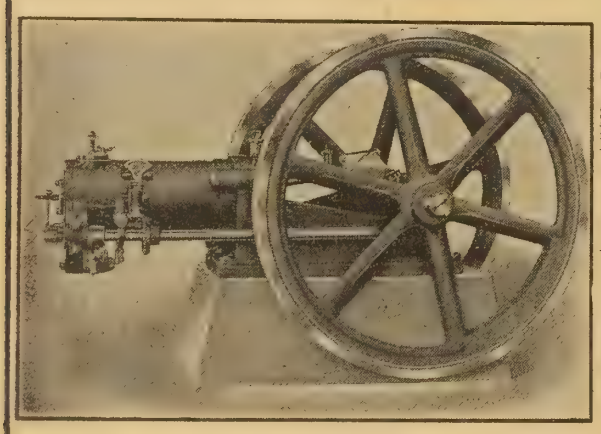

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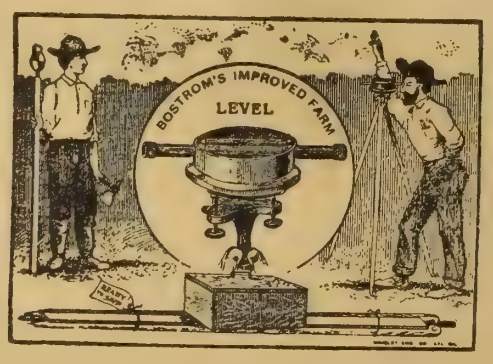

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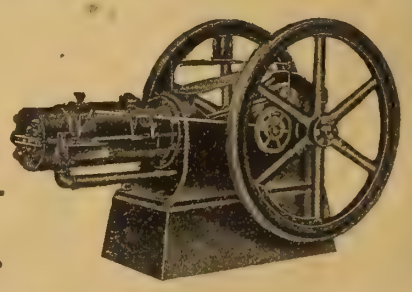

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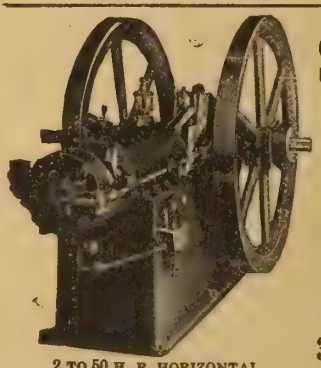

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California Cultivator

Published Weekly — One Dollar a Year

Los Angeles — March 25, 1909 — San Francisco

Orange Groves and Water of Covina

Eldorado Ranch of Forty Acres Averaging $12 per Tree, Property of J. H. Adams. Stream of 796 Miner's Inches

Courtesy of Covina Argus.

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COMMON "bucket bowl" separators have a heavy "bucket bowl" set heavy end up on top of a spindle which is held up by several bearings. The weight is **above** the bearings. Such bowls constantly try to tip sidewise. If they did not want to tip, why have bearings to hold them up? This tipping wears the bearings, allows the bowl to shake and eventually wracks the machine, causing expensive repairs or the purchase of a new machine. There is no way to prevent the "shakes" in common "bucket bowl" machines.

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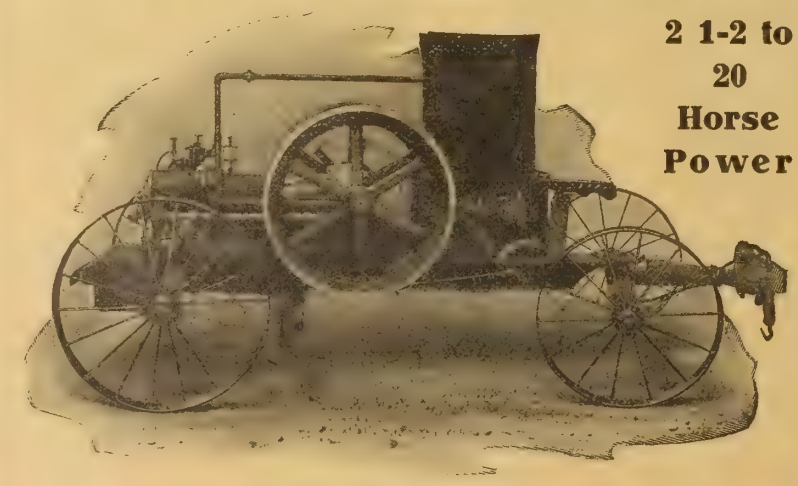

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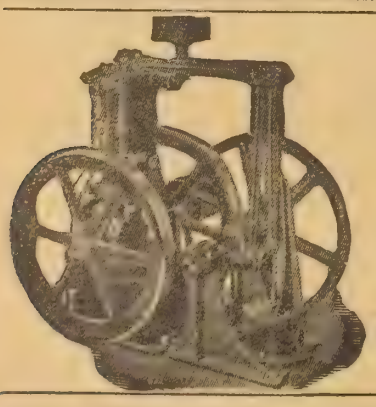

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Vol. XXXII—No. 12 Los Angeles, California, Thursday, March 25, 1909 Subscription $1 a Year

The Irrigation of Our Great Valleys

Some Observations on the Water Supply of the Sacramento and San Joaquin Valleys.

Written by F. W. ROEDING of Irrigation Investigations, U. S. Dept. of Agriculture and Read at the Davis Institute.

THE great central plains of California, otherwise known as the Sacramento and San Joaquin valleys, with a length of about 350 miles and an average breadth of 45 miles, contain 10,000,000 acres of deep alluvial soil, with a climate unsurpassed in its adaptibility to diversified agriculture. It is here, unquestionably, that the state will see its greatest development. That progress has been slow as compared with other sections of the state, may be attributed to several causes, the principal one dating back to the days of the Mexican Grants, which were the forerunners of the large grain ranches, whose vast areas devoted to the growing of wheat have been the subject of authors and poets and the marvel of visitors from all sections. These grants, numbering fifty-four and containing about 1,700,000 acres, many of which are still undivided, became the nucleus of grain farming on a gigantic scale. The ownership of such immense areas by few individuals is recognized as a detriment to development and is primarily the cause of the lack of progress in bringing about the growing of more valuable crops throughout this region and their more rapid settlement.

Although in isolated places, orchards, vineyards and alfalfa could be grown without the aid of irrigation, it was early recognized that the artificial application of water to the soil throughout the hot, rainless summers was absolutely necessary in producing crops outside of grain. The cost of securing an irrigation system to individuals owning these large ranches was prohibitive, while with wheat at a good price and a virgin soil, they were able to make good return on their investments. That the continuous cropping of the soil to the same plant would gradually exhaust its fertility was never considered.

The Awakening.

The San Joaquin valley first felt the effects of this exhaustive method of farming, due to lighter soils and a smaller rainfall than its northern neighbor, and we therefore find irrigated agriculture well established and rapidly developing in this region, while grain farming, although practised to a large extent, has seen its best days. In the Sacramento valley, however, the cereals are still produced extensively, but the poor price and the decrease in crops are generally turning the attention of the grain farmer to his more prosperous neighbor, whose land is under ditch. That grain farming will always be a feature of both valleys cannot be doubted, but it will be on smaller areas than heretofore, and under more scientific methods, both of rotation and seed selection—the former in connection with summer crops such as sugar beets under irrigation.

It is needless to state the increase in value of lands under irrigation, or the returns which are to be secured from these; the facts are too well known. The question then arises: Can sufficient water be secured from the streams draining this region to irrigate it? In considering this question it is necessary to divide the two great valleys and consider each separately.

The San Joaquin Valley.

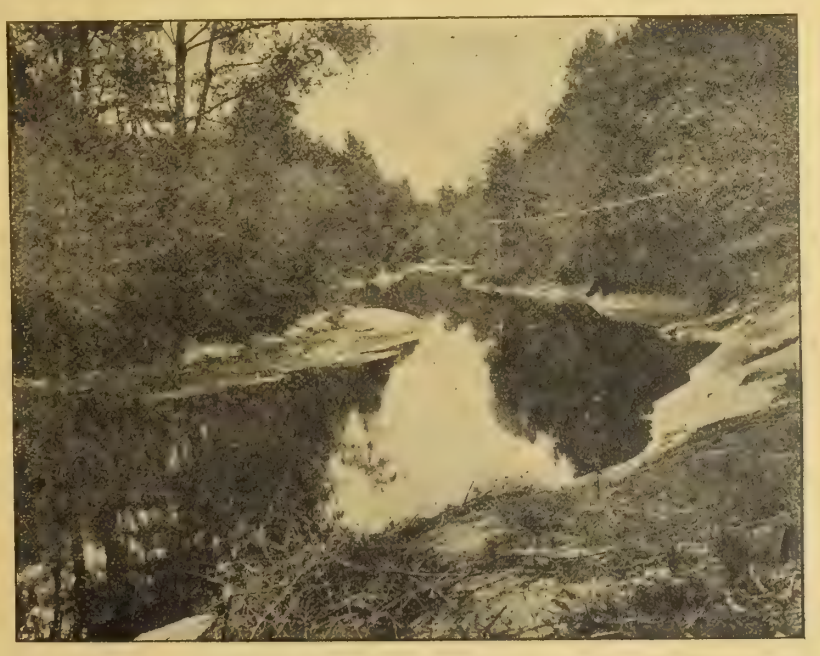
This valley, whose northern boundary is considered on a line passing east and west through Lodi, contains 70 per cent of the land included in the boundaries of the great central plains. Of this, approximately one and a quarter million acres is swamp and overflow land, a large proportion of which has been reclaimed. This land can then be eliminated from our consideration, as here drainage alone is the feature of its reclamation. There are also about one and a quarter million acres which are and can be irrigated. Of this area about one-third lies west of the trough of the Valley, and there are no streams in the Coast Range whose flow could be relied upon for irrigation, even during the rainy season with complete storage. The development of this region will therefore depend largely on pumping, except that portion close to the San Joaquin river, which is at present largely under ditches. That pumping is feasible is evidenced by several plants on the higher lands.

Water for gravity irrigation comes therefore entirely from the Sierras, and the average annual flow of all the streams may be placed in round numbers at 15,000 cubic feet per second. Placing the duty at one cubic foot per second to each 160 acres, and not considering the present status of our water laws or litigations which would arise from any subsequent diversions from these streams, this amount of flow would be sufficient to irrigate about two and one-half million acres, or in other words, double the present area under irrigation. This acreage could also be augmented by the prevention of waste through seepage and evaporation and better methods of distribution, but as the two former would mean a tremendous outlay for ditch linings and piping, they cannot now be considered, although eventually it may pay to follow the system adopted in Southern California. Pumping for irrigation is already largely used throughout the upper portion of the Valley and aside from the increased cost of installation and maintenance is entirely successful.

The Sacramento Valley.

Here we find conditions far more favorable for gravity ditches than in the San Joaquin valley. With an area of about 3,000,000 acres, one-fourth of which is swamp land, we have streams flowing throughout the year from the Coast Range as well as from the Sierras. Stony, Cache and Putah creeks with proper storage can take care of the greater part of the land west of the Sacramento River. We also find that the tributary watershed has an average flow of about 35,000 second feet, or sufficient to irrigate the entire valley without particularly affecting navigation on the Sacramento River. It is therefore to be expected that when the benefits of irrigated agriculture are more fully realized, the Sacramento valley will awake to its opportunities and become a community of small farmers with an endless variety of high grade crops.

In conclusion, there is nothing to prevent the early settlement of all the good lands throughout the great central plains, and that this settlement is going on and increasing is largely due to the energy and enterprise of the various communities interested.



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With the Citrus Growers

CITRUS ORCHARD WORK IN ARIZONA.

The following is written by J. Elliot Coit of the Arizona Experiment Station:

Cultivation.

Clean and thorough cultivation in the summer and a leguminous cover crop during the winter, is unquestionably the best management for Arizona orange groves. Thorough tillage not only puts the soil into condition to take irrigating water more readily, but checks evaporation from the soil surface. Cultivation also secures aeration of the soil, with consequent access of oxygen to plant roots; and it promotes the action of those soil bacteria which render plant food available. But clean culture the whole year round as practiced by some is not wise, for, especially in the hot, dry climate of the Southwest, the humus is by that means oxidized and exhausted from the soil.

One of the chief troubles with Arizona soils is their deficiency in humus and it is necessary that we improve the humus content of our soils if we wish an orange grove to be permanently successful. This can best be done by growing some leguminous cover crop, such as sour clover, during the winter months and turning it under in the spring. The seed of this clover may be secured at little cost. It should be broadcasted in late September or early October at the rate of about fifty pounds of seed to the acre. It will make some growth in the fall and remain pretty much at a standstill during the coldest weather. With the first warm days of spring it makes an enormous growth and produces from fifteen to twenty-five tons of green vegetable matter to the acre, which when turned under decays and gradually assumes the character of humus. A note of warning should be given here. In sowing sour clover seed which has been bought at flouring mills, one is liable to get seed which contains some Johnson grass, and a close watch should be kept during the summer for this and other weeds scattered with the sour clover. Johnson grass should be kept out by pulling the seedlings before they are permanently rooted.

Some growers use two cover crops a year, one of sour clover in the winter, and one of grass and weeds during July and August. This plan is a good one so long as the summer cover crop is allowed to occupy the ground only during the season of summer rains and is thoroughly disked in by the middle of September. A summer cover of cow peas would be even better than one of grass, for they would add to the soil a large quantity of that much needed element, nitrogen. This may be added directly to the soil by the application of nitrate of soda or sulphate of ammonia, but since these fertilizers are very expensive, the growing of leguminous cover crops which supply both humus and nitrogen is to be preferred.

Irrigation.

It is of course impossible to maintain an orange grove anywhere in this arid country without a dependable supply of irrigating water. The orange grower who derives his water from a pumping plant has a decided advantage over the man who is dependent upon the ordinary canal. The orange grove which is sandwiched in between alfalfa ranches must take its water in a large head for a few hours only. This necessitates a hurried irrigation which gives no time for deep soaking.

For best results, the water should be conducted in a head ditch or flume along the upper side of the grove and should be allowed to flow in very small streams into deep furrows along the tree rows. Sometimes several days may be required for the water to reach the lower ends of the rows. This method allows the water time to soak in deeply and reach all the lower roots, encouraging their growth. If these furrows are always run straight down the rows in the same way, there is danger that the water continually rising and evaporating about the bases of the trees may in time cause at these points a concentration of alkali sufficient to injure or destroy a portion of the root systems of the trees. This very undesirable condition may be remedied by throwing up borders on each side of the tree rows and thoroughly flooding them. Water sufficient to thoroughly soak the ground and redistribute the salts should be applied at this time. It should be borne in mind that the amount of salts contained in the ordinary citrus soils of this region is not sufficient to injure the trees so long as it is distributed throughout the soil. It is only when, by poor methods of irrigation, soluble salts are concentrated in certain parts of the soil that they become a menace.

The check system is more thorough than the furrow system and effectually prevents the rise of alkali, but it entails more labor and there is more danger that the water will come in contact with the bark of the trunk, causing gum disease. It is much better to give the grove a thorough and deep soaking once in three weeks than to run the water hurriedly through shallow furrows every eight days, as is so often done in Salt River valley.

Pruning.

Orange trees as a rule require much less pruning than stone fruits, but this does not necessarily mean that such pruning as must be done is unimportant or may be entrusted to inexperienced or careless hands. The most painstaking pruning should be done at the time of planting. At this time the tree should be severely headed back to about twenty inches. This will force it to branch out low and form its main framework near the ground.

In former years the trees were headed some five or six feet from the ground, leaving the trunk bare. It has been found much more desirable to head low and prune so that the branches may sweep the ground. This protects the trunk from the rays of the sun and also to some extent from cold. The fruit is much more easily harvested from low headed trees and the branches shade and mulch the soil.

After the young tree is once well headed and shaped, it is only necessary to do light annual pruning, when all dead wood should be removed and the inside branches somewhat thinned

out. A thick canopy of leaves should be maintained, for it is the common observation in Arizona groves that the most fancy fruit grows in the shade. The sun is so intensely hot that there is a tendency for those oranges which are fully exposed to bake and blister.

Often rapid growing sprouts will break out from the trunk and push their way up through the top of the tree. These should not all be removed but some should be left to renew the top of the tree, the older and weaker branches being taken out from time to time. The main idea in orange pruning should be slow but systematic renewal.

If the trees have been slightly injured by the cold, they should be left alone until the injured twigs have become dry, when they may be broken out. Small trees are much more susceptible to cold than large ones, and in case they are badly frozen and the trunks killed they should be cut off near the ground, thus promoting the growth of new sprouts of which all but the strongest should be cut away. If this rises from the root it should be budded when it attains proper size.

HAWAIIAN PINES IN THE UNITED STATES.

Hawaiian pineapple growers have arrived at an agreement that includes a most important plan for a comprehensive effort to increase the consumption of canned pines in the United States.

This plan is one of the results of the combination of the pineapple growers into a marketing organization somewhat after the lines of the Sugar Factory Company, which has been accomplished, all but the actual execution of the papers.

It has been apparent for some time that the production of pineapples in these islands was increasing much faster than the market for them was, and that sooner or later a condition would be reached where there would be an over-production with the consequent demoralization of the market and loss to the producers. The panic in the United States a year ago accentuated this fact and brought home to the growers that something must be done to increase the market or there would be a smash in the business of production, just as there has been in the past at some time, in almost every line of California fruits. It was clear that 80,000,000 of people could furnish a market for a very much larger production of pineapples than has as yet been reached or is likely to be reached for some time to come. But it was also clear that they would not furnish that market unless something was done to increase the use of canned pineapples among them. Some work of this kind has been done by some of the pineapple canneries, but it has not been comprehensive in its scope, no one concern, naturally, feeling like spending its money in a general campaign of education out of which its competitors were likely to get as much benefit as itself. It was seen that combination to this end of advertising and education was the only equitable and efficient way, and finally combination to that end has been secured.

A booklet is to be prepared showing in how many different ways canned pineapple can be used to make appetizing dishes, ices and drinks. These are to be circulated largely through the wholesale and retail dealers who handle Hawaiian canned pineapples. It is expected to prove a means by which they can increase their sales.

In addition to all these, demonstrators are to be sent through the cities and principal towns to demonstrate the methods of using canned pineapples in culinary operations and as a table fruit.

The agreement to carry on this work is at present for a year, and $50,000 has been appropriated for that purpose. To raise this amount the growers have agreed to contribute in proportion to their pack, the total pro rata per case being 13 cents, of which 2 cents per case has already been called for.—Fruitman's Guide .

THE ORANGE.

Where did the orange originate? De Candolle says the Burmese peninsula and Southern China was probably its original home. From there it reached India, and later, Western Asia and Europe. Arabia had them in the twelfth century and the tree followed the tide of Mohammedan conquest through Africa and Spain. It was cultivated in Italy in the sixteenth century. Spanish colonists brought it to the West Indies and Spanish buccaneers planted it in Florida, though the wild or bitter orange has been known here ever since Florida history began, and there are many who regarded it as indigenous to the peninsula. The present extensive list of budded varieties is the result of careful work on the part of botanists and nurserymen who have probably improved the flavor at the expense of its frost resisting qualities.—Florida Produce News.

Cannery employees at Gridley observed their annual spring picnic. This has become an important feature every year in that community.

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Buy direct from the biggest spreader factory in the world—My price has made it—Save dealer, jobber and catalog house profit. No such price as I make on this high grade spreader has ever been made before in all manure spreader history. Here's the secret and reason: I make you a price on one based on a 25,000 quantity and pay the freight right to your station. You only pay for actual material, labor and one small profit, based on this enormous quantity on a

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Dormant buds, Navel and Valencia.

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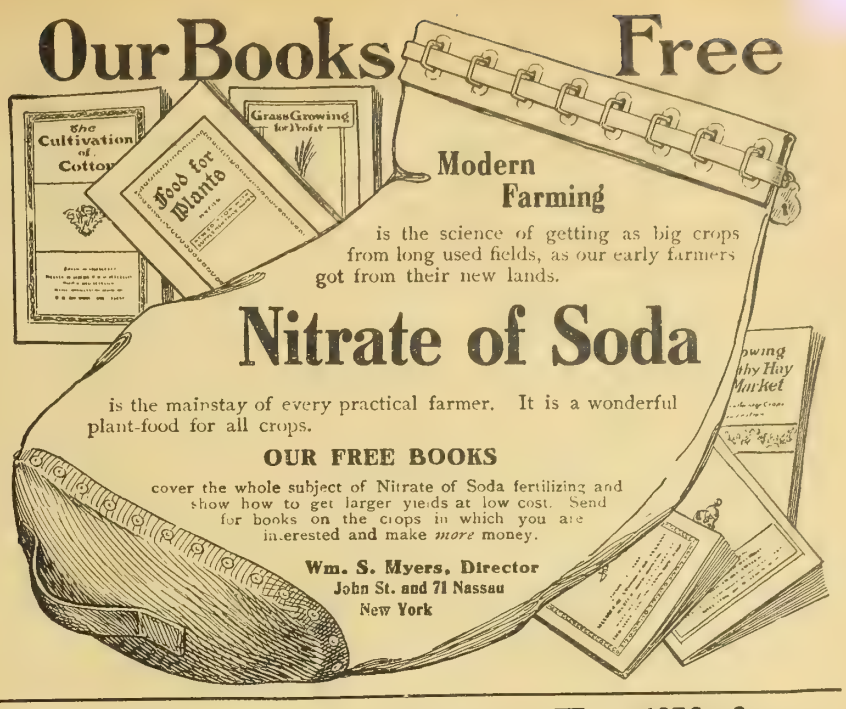

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John St. and 71 Nassau
New York

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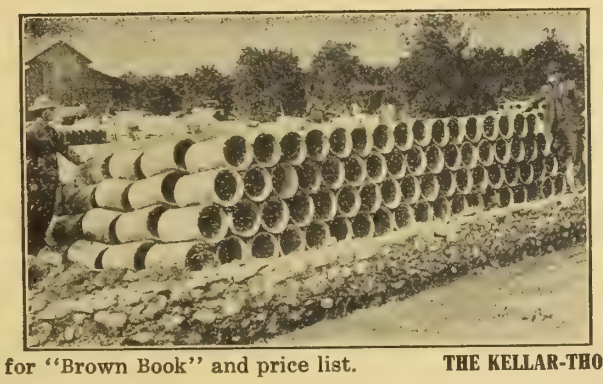

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made by four men from 10 bbls. of cement in 9 hours—280 two-foot joints, or 560 feet. This pipe was made with the

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An equal amount can not be made with any other tools in the same period of time. Write for "Brown Book" and price list.

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Will not injure trees. A band 5 inches wide and 1-16-inch thick cannot be crossed by any climbing insect pest. Remains sticky five to ten times as long as any other known substance. You can test it at slight expense, as no apparatus is required. Used by the carload in New England against the Gypsy and Brown-Tail moths. In California it preserves prune orchards from the Canker Worm. Wherever the Gypsy or Brown-tail Moths, Tussock Moths, Fall or Spring Canker Worm or Web Worm appear TREE TANGLEFOOT is of great value, and should be used when the caterpillars begin to crawl w hilheyare very young.

Price, 1-lb. cans, 30c; 3-lb. cans, 85c; 10-lb. cans, $2.65; 20-lb. cans, $4.80. The only safe and effective banding preparation. Send for testimonials.

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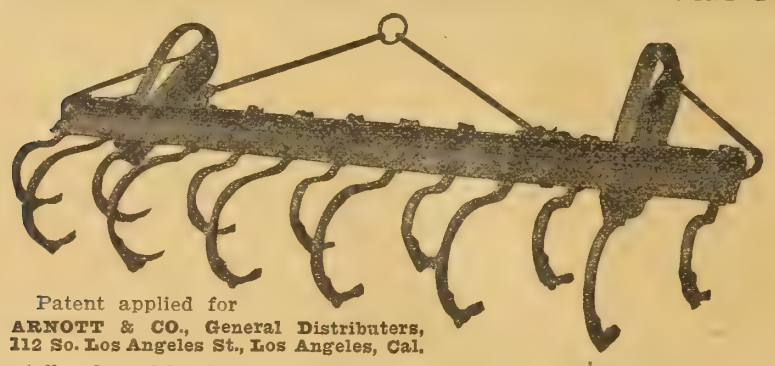

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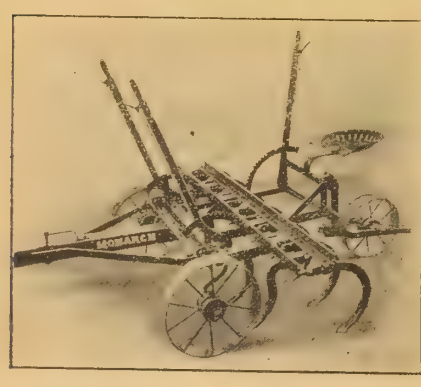

Is designed for heavy work. Has great clearance (17 in.) between front and rear standards, which permits the working of trashy or lumpy ground, and lightens draught. While designed more especially for field use, it is now becoming a favorite among orchardists where deep cultivation is desired. By the arrangement of levers it can be carried level or deeper on one side if desired. Write

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All the Varieties No. 1 Trees

San Fernando Nursery Co.
San Fernando, California

When writing advertisers, mention Cultivator.

Deciduous Fruit Culture

By J. W. Mills

CORE ROT OF THE JONATHAN APPLE.

"A YEAR ago specimens of Idaho Jonathans were received at the Colorado Agricultural College for inspection," writes W. Paddock. To all outward appearances these apples were sound, but when cut in two there were varying amounts of discolored tissue, from slight discolorations to those specimens where nearly the entire apple was involved. To all appearances the specimens had been slightly frozen. This year we have received complaints of a similar nature from various sources in regard to this variety.

It seems that this trouble has been noted in Idaho for several years, and in Bulletin No. 54, of the Idaho Experiment Station, by Professor Judson, issued in 1906, we find the following:

'Much of the complaint recently lodged against the Jonathan because of rotting at the core is doubtless attributed to late picking. Unless this trouble is corrected, the sale of this valuable variety is sure to be hurt. The purchaser is completely deceived by the perfect appearance of the fruit, not a sign of decay being visible until it is cut open, when the flesh for some distance about the core is discovered to be brown, radiating in narrow rays toward the skin, which, however, it seldom reaches. It is worse than a worm hole, for that can be cut out. A box containing even a few of this sort of apples makes the consumer distrustful of the variety, while half or more sickens even the most enthusiastic friend of 'Brother Jonathan.'

'To get an idea of the effect of early and late picking upon this trouble, I requested Mr. C. C. Eiffe, of Payette, in the fall of 1904, to pick a box a week for several weeks, beginning as soon as the seeds turned, and keep notes on the appearance of the core rot in storage. His results are confirmed by the experience of several growers in that valley, and are not open to serious question. One box was picked September 11th, a second a week later, and a third one morning in October after a heavy frost. In January the September boxes were found to be keeping equally well, the ratio of sound apples to decayed being six to one; whereas the October box showed a precisely inverse ratio—six rotten to one sound. In May, long after the late-gathered apples were gone, a considerable number of the early-gathered still remained juicy and in good condition. There is probably no other winter apple for which prompt picking is so important as the Jonathan.'

The season of 1908 was peculiar, and various causes were responsible for the apples being under size. Because of the small size of the fruit the growers naturally deferred picking as long as possible with the hope of increasing their output of the fancy grade; and in many instances, at least, the apples were eating ripe before they were gathered. Judging from the Idaho experience, it is probable that the trouble with the Colorado Jonathan this year is due to this course. If the apples are picked promptly as soon as in condition, it is likely that this trouble will entirely disappear. At any rate, we are certain that there is no fungus involved and that the condition is one which the growers may readily control. The Jonathan apple is too good a variety and has too good a reputation for us to allow anything to happen to it. We believe that it lies with the growers to correct this fault; and when once their attention has been called to it, there will probably be little complaint of a similar nature in the future."

ON THE GROUNDS OF J. H. ADAMS, COVINA.

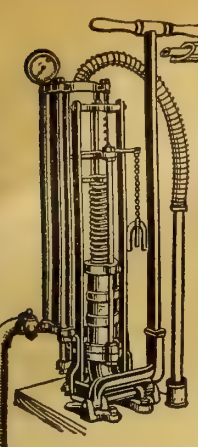
WASTE IN SULPHURING VINES.

Sulphuring of vines is usually sulphur and effort well expended. However we note the following by Prof. F. T. Bioletti as to that work last year, spring of '08:

A great deal of sulphur and labor have been and are being wasted in treating vines for mildew this year, especially in the interior.

A year like this, with a long hot, dry spring and early summer is so unfavorable to the growth and spread of mildew that in many districts there would be done of this disease even if sulphuring were neglected completely.

Throughout the great central val-



This is the Pump

that can be operated continuously at high pressure without the muscle-racking, exhausting, "man killing" exertion required for ordinary pumps. High pressure spraying means more and better fruit—and consequently more money for the grower.

Bean Magic Spray Pumps

are different from other pumps. They run smoothly and easily without clogging, and one man keeps up high pressure for two lines of hose. And they **save one-third the labor.** The Bean patent spring does it. The operator does half the work at each stroke of the handle, and works against but half the pressure indicated on the gauge. A trial quickly removes all doubt.

Our illustrated catalog No. 21 describes ten sizes of handpumps, and contains much valuable spray information, and formulas. Catalog No. 18 describes Power Sprayers. Both books sent free. Write for our special offer; state number of acres and kind of fruit.

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Our **Hydrated Lime Department** is constantly gathering practical and scientific data on use of **Hydrated Lime** as soil **Fertilizer, Dust spray, Etc.** which is at your disposal. References furnished showing great **Efficiency** and **Economy** in its uses. Correspondence solicited. Write for sample and prices to

The Holmes Lime Co.
Incorporated
Mutual Savings Bank Building, San Francisco

Nursery Stock

Colorado Grown Trees

Because your order gets our personal attention, whether evergreen, or forest, ornamental or fruit tree; whether small fruit, shrub or rose bush, we guarantee it to be grown in Colorado; healthful, well-rooted, true to name. We give premiums to clubmakers. We pay freight on $10 orders. Agents wanted. Send for free catalog today to

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Walnut Trees

Grafted or grown from carefully selected seed. Postal gets prices.

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Gypsum will make available the plant food in your soil and bring good returns through small investment.

Wonderful Soil Corrector

Write for prices in car lots.

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Raspberries, Surprise, Superlative, Kansas Blackcap, 75c doz.
Blackberries, Mammoth and Rathburn, 75c doz.
Phenomenal Berry, London Red, Golden Queen, 75c doz.
Cuthbert, Gardena and Lucretia Dewberry, Logan, 50c doz.
Asparagus Roots, Barrs, Palmetto, Columbia, 1 yr., 30c doz.
Walnuts, Fruit Trees, Flowers.
Pioneer Nursery, Monrovia, Cal.

ley, except where summer irrigation is practiced or where the vines are growing along irrigating ditches or in the shade of trees or buildings, one sulphuring should be sufficient to control the mildew perfectly this season, and in many vineyards it would be quite safe to omit sulphuring this year.

Much sulphuring is being done owing to a mistaken idea of what mildew is. Vines with curled, yellowish leaves or poor growth may be suffering from drouth, sunburn, wind, vine hoppers, little leaf, and sulphuring will be quite thrown away on them. Go into the lowest shadiest part of your vineyard, where the vines are growing vigorously and examine the lower parts of the new canes. If any mildew is present now it will be there. If none is there the rest of your vineyard is safe so long as this hot, dry weather continues.

Another way in which sulphur is

AN IMPERIAL VALLEY THREE YEAR OLD TREE.

being wasted is by the use of cans and sacks for applying the sulphur. This will be made clear by the record of two vineyards which I have.

Vineyard A was sulphured by shaking the sulphur out of cloth bags. One sack of sulphur (100 pounds was used to 7½ acres. The cost of sulphur was $26 for 100 acres and the work was badly done.

Vineyard B was sulphured with a good machine, and only one-quarter sack was used to 7½ acres, costing $6.50 for 100 acres. No mildew so far has appeared in either of the vineyards.

BORDEAUX AND EAU CELESTE.

These formulas are given often and as often called for again, so we reprint. This is the formula recommended by the State Horticultural Commissioner:

Bordeaux.

Copper sulphate (blue stone) 8 pounds.
Quicklime ..... 10 pounds.
Water ..... 50 gallons.

Dissolve the copper sulphate (blue stone) in a barrel containing ten or twelve gallons of water. Slake the quicklime and thin it to a creamy whitewash. Pour the whitewash very slowly through a wire screen into the copper solution. Stir the mixture thoroughly and add enough water to make fifty gallons in all. Stir occasionally while applying as a spray to the trees.

In the preparation of the Bordeaux mixture it is necessary that the ingredients should be mixed in a wooden vessel. If an iron one is used the copper will go to the iron and the effect of the spray is largely neutralized. Apply the wash cold and as soon after it is prepared as possible. Never allow it to stand over night.

This is a remedy for curl leaf of peach, shot-hole, fungus, peach blight, pear and apple scab.

Eau Celeste.

For powdery mildew and rust on roses and other plants:

Sulphate of copper (blue stone) 2 lbs.
Ammonia ..... 3 pints
Water ..... 50 gals.

Dissolve the copper sulphate in a gallon of hot water and add the ammonia, after which the mixture is to be diluted for use.

SMUT EXPLOSIONS.

Gas generated by heat from black oil, a by-product of petroleum, used as a lubricant on bearings, and not smut in wheat, as generally believed, is the sole cause of explosions in threshing machines. The use of lard, castor or china-nut oil eliminates all danger of fire or explosion, no matter how much smut there is in the grain.

That is the theory advanced by Silas Privett of Colfax, Wash., a thresherman of 25 years' experience in the northwest, who has operated 10 years in the Palouse wheat belt, south of Spokane, where 27 machines were destroyed in a single season, a few years ago. Mr. Privett believes he has made a discovery which will result in the saving of thousands of dollars a year to farmers and threshermen in the United States and Canada where smut is prevalent.

Explaining his theory Mr. Privett said that black oil produces explosions in the same manner they are created in a gas or gasoline engine. The heat generated by the bearings of the rapidly revolving machinery, upon which the petroleum product flows constantly while in operation, generates a gas, and when a spark, caused by the passing of a hard substance through the machinery or the striking of the cylinder teeth against the teeth in the concave, comes into contact with this gas, an explosion results. He added:

"I have been studying this problem for years, but said nothing about it until after I had made a thorough investigation. As a result I am more convinced than ever that the majority of these fires, if not all of them, can be directly traced to the use of black oil.

"I began operating a threshing machine when I was 15 years of age and continued in the business for 25 consecutive years, and I do not believe that there is a man today in the country who has threshed any smuttier wheat than I have, yet I have never had an explosion, neither have I ever used anything but castor, lard or china-nut oil.

"I have also noticed that while there have been from 10 to 25 fires every fall in Whitman county, supposed to have originated from smut there are three or four threshing outfits which have threshed through the same kind of grain season after season without any fires. I also know that the men having charge of these machines will not allow anything but castor or lard oil to be used."

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Get your trees in the ground as soon as possible.

Season Advancing

and the rapidly decreasing stocks make it advisable for you to place your order at once.

Bedrock Prices Now

We have the largest and finest stock on the coast. Our trees are all true to name, strong and thrifty, and are properly prepared for shipping so they reach their destination in perfect condition.

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Bartlett, Doyenne du Comice and Glou Morceau, the three great commercial pears, 10,000 Imported French Pear seedlings for immediate shipment. Write for prices.

Peaches and Apricots

Special prices on our Royal and Blenheim Apricots uo Myrobolan root and on the following varieties of peaches: Elberta, Lovell, McDevitt, Cling, Muir, Phillips, Runyons Orange and Sellers Orange Clings, Susquehanna, Tuscan Cling and Wheatland.

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We are offering big inducements on all the leading table, raisin and wine grapes. Write for our Surplus List No. 2. We will make it worth your while to figure with us.

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Send us your orders and let us make a selection of roses for you. We will fill your orders with first class plants, our selection, for $1.80 per dozen.

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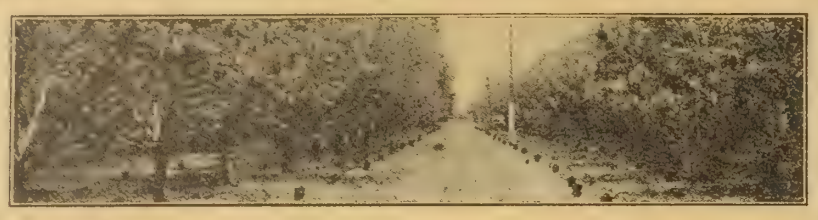

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Box 545 **Covina, Cal.**

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75 varieties of ***Sweet Peas*** Separate Colors, 5c per Pkt. 15 Leading Varieties, post paid, 50c. 4 Varieties, that bloom in 45 days, 25c. This is the best time to plant.

Onion Seed First Quality Yellow Danvers and Australian Brown for Main Crop. Germination over 95% by test. Per lb $1.75.

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Eucalyptus All the Leading Varieties in seed @ 15c per package, (Six of the leading varieties, E. Rostrata, E. Leucoxylon, E. Rudis, E. Globulus, E. Corynocalyx, and E. Tereticornis for 50c, with cultural directions). 500,000 Plants, all varieties. State your wants and get prices. Send 10c for large packet each of our new ***Cabbage Head Lettuce, King of May*** and ***Brown Dutch***, earliest and finest flavor.

MORRIS & SNOW SEED CO. **425 So. Main Street Los Angeles, Cal.**

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ROSE BUSHES, ORNAMENTAL, SHADE AND STREET TREES.

We publish a price list, a descriptive catalogue. and a special Eucalyptus pamphlet.

Orange County Nursery & Land Co.

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Riverside Branch, Cor. Market and 7th, Sts.
Corcoran Branch, Whitely Ave.

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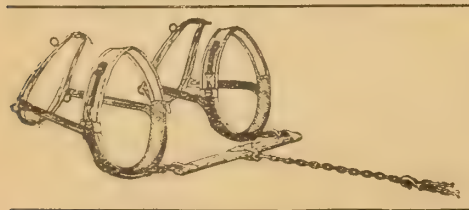

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To increase your crop in quantity and quality you must fertilize. The Tom Lewis fertilizer insures big crops for everything that grows. The best and cheapest fertilizer made. It is the farmers' money maker. No trouble to use. Big crops are sure to follow. This fertilizer produces 6 to 10 pounds of grapes to the bunch. For catalogue and prices write

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Small Fruits and Vegetables

EASY TO GROW ASPARAGUS PLANTS.

ASPARAGUS plants can be easily grown from the seed in one or two years' time. If you are in no hurry this is the best plan, but or course if you wish to get a bed started in a short time, it is better to buy the plants of some seedman or nurseryman, as you can thus save a year or two in time. Plant the seed very early in the spring, the earlier the better, in rows of a foot apart. As the seed is slow to sprout it is a good plan to mix in a few radish seed, as they will come up early and make the row and you can tend and keep the weeds down while you are waiting for the asparagus to come up.

The little asparagus plants are very small at first and you should look carefully in weeding or you will pull them up. As soon as the asparagus shows, take out the radishes or they will crowd it out.

Keep well tended and free from weeds, in fact tend just like you would a bed of onions from seed. The plants grow all summer and can be dug in the fall and stored in the cellar or left in the ground till spring.

Early in the spring take up the plants and set them where they are wanted, first putting the bed in the best of condition. Spade it up very deep and work it up fine. It is a good plan to work in a lot of well-rotted manure to make the soil loose and rich. A tolerably moist place is good, but that is not important. Better choose the place that will be most convenient and fix the ground to suit. You can't make it too rich.

Mark out the rows from two to four feet apart and set the plants two or three to the foot in row. Set about four inches deep just about like you would raspberry plants. Cover all over with dirt. The plants are easy to live and if they are covered with dirt they are almost sure to come well.

Keep well tended the first season like you would potatoes. Hoe or cultivate just as suits you best. In the fall cover all over with manure deep enough so that weeds can not come up through it. If any weeds show through in the spring put on more manure. Keep this up every season and you will have no more trouble with the bed. The asparagus will come through any amount of manure. You can begin cutting the second season and from then on the bed will be better every year for a long time and is a permanent affair.—Southern Cultivator.

SAUERKRAUT.

Sauerkraut is easily made, and the home-made article is much better than that offered by grocers. Slice the cabbage with some one of the various vegetable cutters. Pound down in a jar; a wooden potato masher answers for this work. Sprinkle salt on each layer as you put it in. A heaping tablespoonful of salt will be enough for each gallon after it is pounded down; it should be pounded until it looks watery and well bruised. When the jar is full cover with a cloth and lay a plate or wooden cover on it and press down with a heavy stone or weight of some kind. The brine ought to rise on it in about three days, and if it does not, a little very weak brine should be poured over it. 'Tis well to set it out doors until the fermentation is over, as the odor at that time is strong and to most people very unpleasant. It takes several weeks for it to get fit for use, the time varying in accordance with the temperature at which it is kept. It is best to take off cloth and weight and wash them occasionally, as mould will form on them.

Cultivate the sweet potato land frequently to destroy weeds and grass, and fit the soil for the plants. The first setting of plants should be ready by the middle of the month, and the sooner they are removed from the bed the sooner the second setting will come on. If the plants cannot be set out when large enough, they should be pulled off, the tops sheared, and then heeled in to make room for the next setting.

SEED FROM SMALL POTATOES.

It is probably not a good plan to save seed from the small potatoes year after year. But when the crop is cut short by dry weather the result in potatoes will make a good crop the following year if given any chance. In one dry year we raised no potatoes larger than a walnut and from that down to a marble. We planted this seed the next year and it was much like planting peas. But the crop we raised was the best we have ever grown in the West, the season being a very favorable one. This year we had our seed picked out from the best we had, but these lacked three rows of planting the piece. These three rows were planted with the culls from the bin; at digging time this fall no difference could be noticed either in yield or quality between these rows and the others. There are hills among potatoes that produce a great many little ones and no large ones; the danger lies in selecting small seed when many of this kind are present in the field. The small potato taken from a hill of large ones will grow just as good potatoes as the large ones will. If some weather condition made the whole crop small we should not hesitate to use them for seed.—Nebraska Farm Journal.

UDO.

Udo is scarcely known at all as yet. It is a favorite in Japan. It is a shrub that grows during the summer shoulder high. It is another continuous performance plant like asparagus. When cold weather comes it should be cut down to the ground and a bank of earth one and a half or two feet high pulled over it. Later when the weather comes very cold as in a climate where they have hard freezes to contend with, the earth should be covered with manure or other mulch. This plant grows all winter, and in January the delicate shoots can be cut off and like celery, eaten raw; further, they furnish an exceedingly pleasing dish served very much as asparagus is handled with or without a white sauce. It reminds one of the heart of celery. It has a flavor that is distinctly spicy and seems to please all palates.—Green's Fruit Raising.

Quite extensive plantings of peanuts have been made at Beaumont.

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Balled in moss and leaf mould. Need less water and can be planted later. Uniform size and being balled have fine roots. Fine to grow. Boxes of 100, sample lot, in flats and protected tops, only $1.60. Try them and you will use no other. Write for circular and special prices on large lots.

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Now is the Time
To Plant
Eucalyptus Trees

I have about 200,000 seedlings left, price $7.50 per 1000 f. o. b. Corona. Varieties, Rostrata or Red Gum, Corynocalyx or Sugar Gum, Rudis or Desert Gum, Tereticornis or Grey Gum.

Robt M. Wollitz, Corona, Cal.

The Ornamental Garden

PLANTING OF FLOWER SEEDS.

IN making the garden bed for outdoor sowing of seed, the amateur can save much time and trouble by understanding clearly just what the principle is.

In the first place, remember that almost all the seeds of our common garden flowers are extremely tiny. To put these minute things into rough earth, full of little clods and stones, is like dropping them into a lot of miniature subterranean caves, where they are neither covered properly nor will they get nourishment. The earth into which they go should be so fine that no amount of crumbling between the fingers will make it any finer. If it can be sieved, that is the best thing to do.

But while the seeds need perfectly powdered earth to do their best, they do not need much of it. A few inches in depth is all that indoor seed boxes ever have. Consequently it is by no means necessary to work over the whole garden bed to make it a good seed bed.

On the other hand, however, as the flowers that come up are to stay where they grow, it is extremely necessary that the entire bed be prepared as it should be to provide the proper nourishment and foothold for the plants after their roots begin to go deeper than the upper seedbed.

Therefore the right way to go about making a bed for seeding down flowers is to remove about half a foot or even a little less of the top soil if it is very rich and black earth. If not, get an equal quantity of earth that is good, pass it through a fine sieve if possible, or else rake it and pick it over till it is perfectly fine. Pile it alongside of the bed.

Then go at the latter. Dig it deep, mixing the upper soil well with the lower. Unless the earth is very rich indeed, put some fine well-rotted manure in and turn it under. Rake it all thoroughly, removing all large stones and hard material, and everything that will prevent the earth from forming a good root bed. After the bed has been thoroughly raked and smoothed, trample it down well until it is packed solid. Then rake again thoroughly, because while you want the earth to be well packed, as rain and weather would pack it in time, you still do not want it hard and solid.

After this second raking, cover evenly with the very fine earth for the reception of the seeds. Most of the flower seeds will not need to be dug under. It will be best to scatter them lightly on the ground and then press them in firmly with a flat board. Scatter fine earth, crumbled between the fingers, over them and the work is done.

HOME GROUNDS.

Every home builder, however poor and humble, owes it to his wife and children that he should supply them with every luxury and comfort within his reasonable ability, says a writer in an Eastern Exchange. Every man can have a garden and some fruits. They are cheap luxuries, and within the easy reach of all, requiring only a small investment and a little labor. These, with a fixed determination to make the pursuit of comfort and happiness his first aim and money making an after consideration. This is according to nature's law and order, and is right and God-ordained.

There are thousands of children even on farms who grow to manhood and womanhood and never know the luxury of plucking and eating fruits, ripe, luscious and fresh from the tree and vine. Is it any wonder that your thoughtless boys are tempted to raid your neighbor's orchard or melon patch? Parents are responsible for the vices of their children in more ways than they usually consider. I may further say that the addition of an orchard to any farm, either small or large, adds another opportunity for practical industry, and a desirable avenue for remunerative occupation with educative and refining influences. Whatever makes home more beautiful, more enticing, is not only a blessing to its occupants, but to all who look upon it. In no calling is the habit of quick and accurate observation of greater importance than in home making, home building; and in no place can the beautiful in nature be so blended as in the use of horticultural environments.

THE BACK YARD.

Give your back yard garden a chance to prove what can be accomplished there. Start in early to plan for the arrangement of the little garden spot, choosing the flowers which seem best adapted to it, and when danger of frosts is over, prepare the ground for the reception of seeds. If the space is large, have it dug for you, though if possible, take the time outdoors and accomplish the work yourself. You will enjoy it, and it will pay you a thousand times in health and strength. Do not try elaborate designs, for it will mean enlarged expense, besides taking more time, and the chances are ten to one that it will disappoint you after all. Instead make the flower arrangements as simple as possible, blending two or three pretty flowers and vines, and giving them plenty of room to grow and spread themselves. This will aid in counterbalancing the disadvantages of shade and poor soil. Give your back yard garden a fair chance, and see if it does not repay all your care of it, by filling your summer days with brightness.

Roses in the front yard may not be a quick money crop but they pay big in keeping alive and developing the love of beauty that God has planted in the heart of every man or woman worthy of the name.

Farmers Union at Pendleton, Oregon, has headquarters at that city and one of the features is a beautifully furnished rest room for the farmers wives when they come to town.

The Schmidt Lithographing Company, carrying an advertisement on another page of the Cultivator, appeals to the growers, packers and shippers of citrus and deciduous fruit, and anything in the way of box labels can be secured from this firm on the most reasonable terms. They will be glad to send you a sample booklet of box labels, which will be mailed free on request. Address them either at their San Francisco Office, 2nd and Bryant St., or Los Angeles Office, Henne Bldg., Mr. H. E. Lenz, Manager.

We take pleasure in recommending them to the readers of the Cultivator.

New Crop Seed
Plant Good Seed Reap Good Crops

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Grass Field Vegetable SEEDS

Don't fail to plant our celebrated

Big Leaf Jersey Kale

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The Seed House OF THE Great Southwest

Just received, one carload of **Eastern-grown Seed Corn,** and our **Colorado-grown Cantaloupe seed.** We have three strains, the **Eden Gem, Netted Rock,** and **Solid Net.** All of these have been tried, and proved more satisfactory than any other strains of the **Rocky Ford.** Dealers and Associations are requested to write for special prices.

Our carload of **Corn** consists of the several varieties best suited to the different sections of the Southwest. See page 112 of our catalog for description, and write for prices on large quantities.

Aggeler & Musser Seed Co.
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300,000 Eucalyptus

Fruit Trees
Shade Trees
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And everything that you need for your ranch or garden. Send for free catalogue

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Records and Supplies, $10.00 orders delivered at your nearest railroad station upon receipt of full retail price. Write for catalog.
Peter Bacigalupi & Sons, 941 Market St. San Francisc

The following is a report of the

California Mutual Live Stock Insurance Association

of the amount of insurance in force in each county in the state. This is done for the purpose of showing to our policy holders the large amount of insurance we are carrying and the way the insurance is scattered throughout the state. One can readily see that a vast numer of farmers and stockmen are joining this Association, which insures all kind of live stock against death from disease, fire, lightning or accident which may necessitate the death of an animal. The best farmers and stockmen are becoming aware of the fact that they cannot afford to be without insurance where the rate is so low and the insurance furnished at actual cost to the policy holders.

Counties	Amt. of Insurance	Counties	Amt. of Insurance
Alameda	$ 5,024.00	Total For'd	$649,939.00
Butte	15,455.00	Sacramento	20,416.00
Calaveras	1,400.00	San Bernardino	12,920.00
Contra Costa	28,790.00	San Diego	41,755.00
Colusa	17,800.00	Santa Barbara	6,560.00
Eldorado	1,700.00	Santa Clara	9,295.00
Fresno	120,366.00	Santa Cruz	21,425.00
Glenn	9,650.00	San Francisco	12,109.00
Humboldt	50,812.00	San Joaquin	51,604.00
Imperial	32,390.00	San Mateo	3,950.00
Kern	30,610.00	San Luis Obispo	41,783.00
King	6,270.00	Shasta	6,975.00
Lake	4,300.00	Siskiyou	12,800.00
Los Angeles	129,549.00	Solano	58,514.00
Madera	28,165.00	Sonoma	80,461.00
Marin	30,075.00	Stanislaus	118,665.00
Mendocino	29,935.00	Riverside	5,080.00
Merced	42,921.00	Sutter	34,649.00
Monterey	26,474.00	Tehama	39,630.00
Napa	11,410.00	Tulare	13,255.00
Nevada	3,800.00	Ventura	49,767.00
Orange	3,550.00	Yolo	32,625.00
Placer	19,493.00	Yuba	14,470.00
	$649,939.00	Total	$1,338,647.00

This Association has already paid to its different members 486 claims, all of which have been paid promptly and without unnecessary red tape, as is so customary with the old line companies.

This is the only Association of its kind in the state authorized to do business under the state law.

We respectfully refer you to

National Bank of California.....Los Angeles
Security Savings Bank.....Los Angeles
Bank of Germany.....Oakland
Oakland Bank of Savings.....Oakland

Or any reliable bank in the State.

For further information relative to the workings of this Association address

California Mutual Live Stock
Insurance Association
270-71-72 Bacon Building, Oakland, California
M. L. Wright,
President and General Manager

THREE FAMOUS OLD TREES.

There is a tree in Cheapside, London, which may literally be described as the most expensive of its kind on earth.

If $5-gold-pieces filled the entire trunk and $5-bills fluttered in the place of its leaves, it would not buy the ground it occupies, for the land on which it stands is worth $4,500,000 an acre. The tree has stood on the spot for 200 years.

There have been several hard fought law suits over this plot of ground, the fight having been carried even to the House of Lords, but so far, the lawyers have never been able to break through the legal enactments which preserve the tree.

Two great oak trees in the garden at the White House are known as the "Peace Oaks." They were planted, previous to the Civil War by John J. Crittenden and James B. Beck of Kentucky. These men, who were representing the State of Kentucky in the United States Senate, attempted to defer the war by means of a peace conference. Their failure was symbolized by planting two acorns from which grew these carefully guarded trees.

Two small seedling oaks—"Peace Trees," sprouted from acorns, the fruit of the "Peace Oaks," have recently been sent from the botanical gardens in Washington to be planted in one of the public parks in Kentucky.—American Farm World.

FLORAL PROGRESS.

If our grandmothers could come back and study a modern flower garden they would be surprised beyond measure. The change in the size, forms and colors of the common annuals would puzzle and delight them. To see this change you have only to compare an illustrated catalog of 1909 with an old one of 1885.

Floral forms have proved very mobile under the skilful manipulations of the plant breeder, and it is almost possible for him with patient perseverance to produce any desired change in shape, color, and size of plant. What is especially striking is the delicate, and fanciful markings, and mixture of colors, in such families as the phlox, pansy and petunia.

Many flowers once so small as to be of little value have advanced in size and consequent importance. Others considered coarse have been refined. Some without perfume twenty years ago, have acquired that attraction.

The amateur flower lover who undertakes a flower garden has much pleasure and some surprises in store. But just a hint from experience: There is more success and consequent pleasure, with half a dozen varieties of easy culture than with a lot of new and strange plants, which may really need expert care to do well.

HOW THEY GOT THEIR NAMES.

Fuchsias were so called because they were discovered by Leonard Fuchs.

Dahlias were named for Andre Dahl, who brought them from Peru.

The camellia was named from a missionary named Kamel, who brought some magnificent specimens of the flower to France from Japan. He called it the rose of Japan, but his friends changed it in his honor.

Magnolias were so called because Professor Magnol de Montpellier first brought the beautiful tree to France from America and Asia.

Anemones mean trembling with the wind—hence their name.

Lavender received its name because the Romans put the delicate flowers into the water where they washed, to perfume their hands, lavare being the Latin word, to wash.—Farm World.

San Joaquin county is to vote upon a proposition of bonding the county for $1,800,000 for the purpose of building good roads.

Wood soled Boots and Shoes. Boots $3.25; Shoes, $2.00 O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles, Cal.

For Mehring Foot-Power Milking Machines see O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles, Cal.

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We do not dump our goods on the eastern commission houses and take a chance on getting a price. No! We go right out and create a demand among the high grade dealers under a special brand. Our representatives are working among the eastern trade all the time. Every grower and shipper should write us for information about our methods of introducing CALIFORNIA Products under a guaranteed label.

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Is told in our new book on Citrus Culture, embracing every phase of the subject from the seedling plant to the final disposition of the fruit in the Eastern market. The largest and best book on the subject ever printed—60,000 words, 100 illustrations. You will want a copy, which we will send you for the small sum of 25 cents. Remember we are the largest growers of orange and lemon trees in the world.
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Write NOW for prices.
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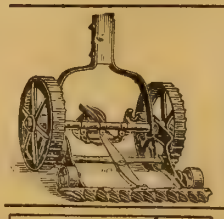
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$1.50 a dozen, $6.00 per 100, $40.00 per 1000. Now is a good time to plant. Pedigreed Stock. Fruit Trees and Berry Plants of all kinds.
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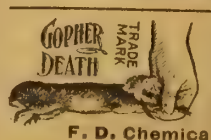

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Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

By Mrs. Minna E. Sherman

PIGS ONCE MORE.

THE pigs that are to be retained in the yards for breeders should have light weight, metal tags put into the right ears. It is, also desirable to know them apart. The simplest system of numbering I have been able to devise, is to begin by calling the sows A-B-C-D-E- and so on. When sow A has a litter and it is desirable to save some of them, the tags are stamped to read as follows: A-1-09 for the first one, A-2-09 for the second and so on. This shows at once that this young sow is the daughter of sow A and the first litter of '09. The second litter of pigs are marked, A-21-09. Should there happen to be a third litter, these would be marked A-31-09. The next generation's numbering reads, A1-1-10. That is sow A, sow number 1, daughter No. 1, born in 1910. When the sows are registered the herd book number may appear on the upper side of the same tag. The die and tags of a soft steel are bought and the stamping done at home as the tags are needed. The keeping of the number right in the ears of the stock is really the only way to follow the breeding carefully, for whenever you see any marked goodness or anything undesirable croping out, if the stock is marked it can be increased by line breeding, or it may be bred away from, by a distinct out cross.

Growing Stock.

The young sows should be placed in a field of good alfalfa, to encourage them to grow strong and thrifty rather than to make fat. The brood sows should not be "hog fat" to make good mothers. The pigs intended for dressing for pork are the ones to feed the wastes of the horse and cow mangers, while the milk and kitchen slops are given to the sows, nursing pigs and to the little just weaned ones. The little pigs of thirty pounds or so make good sausages, and a demand for farm made "little pigs" sausages can be readily built up. Crops are grown specially for the pigs to harvest. At least six, two or three acre yards should be fenced up for the pigs. The fences made of hog tight wire fencing, strung on live willow posts, make the pig lots wood producing plots. These willow posts, placed six feet apart and pollarded every third year to six feet in height, will produce a large amount of fire wood cheaply, for they are cut when the size to split only once and this can be done for about a dollar a cord. Half of the lots are sown at once to alfalfa leaving three to handle the pigs during the winter season. When the spring time is in the land, the sows are put on one alfalfa field while the growing stock is put into another. The third alfalfa field is left to cut some hay for their winter feeding. The other three fields are plowed and sown to cereals, or if the season is too late they are sown in part to corn, part to peas and part to pumpkins. Any of these crops can be harvested by the hogs in the fall before they are turned off to the pork barrel.

Winter.

Alfalfa does not stand pig-feeding well in the winter time. No matter how carefully they have rings put into their noses, they trample it to death. The crop best for winter and fall sowing seems to be green peas, and when these tops are fed off, the roots are left to furnish the next summer corn crops with nitrogen. Plant with Indian corn or sorghum; the hogs relish either kind, and soon learn to harvest it for themselves.

The sows that eat their pigs probably do so from want of proper food. I have noticed it rarely happens if a sow is on green feed. It seems to be the result of feverishness rather than of malice at first. This sow however should be turned into the pork department at once and not kept to repeat the same cruelty next season. These old sows make a great quantity of lard and if a fat cow is dressed at the same time, and the beef tallow added to the lard it will make it go much further in cooking. It makes a nicer biscuit than all lard.

Feeding the Sows.

After the sow farrows, give her plenty of water, but no food during the first day. The next day give her bran mixed with skim milk, feeding her the first week on bran, slops and alfalfa, either cut green or on alfalfa hay. After that she may be allowed her liberty and given all the slop she will eat as well as all the green cut stuff or green hay. Sunshine is good for the sow and good for the wee piggies. The sows that have large strong litters should be kept and the others put in the pork string at once.

The old formula should be kept at hand to make them thrifty. Much of the "kidney worm" that affects little pigs will be controlled if the old sow can have free access to the following mixture. Eight pounds of wood ashes, 4 pounds of salt, 1 pound of black antimony, 1 pound of copperas, 1 pound of sulphur, ¼ of a pound of saltpetre, 1 pound of charcoal. This kidney worm is characterized by the young animals coughing and acting as though their hind parts were stiff, and at the end or before death they curl back the lips and turn the noses to one side. When they are very sick catch the little chaps and give them a teaspoonful of copperas water and also add some to the sow's slop.

Litters.

The use of a small foot board is important if the sows are penned up with their little pigs, or they will crush them. We, however, have our sows at large and when they begin to carry litter to make a nest, they are allowed to select their own spot and when they are settled, the light roof boards are put over the portable frame work and the sow has a shelter from the rains with her bed on the clean ground. The trouble with any sort of houses in constant use is to keep them clean. They will grow foul in spite of spraying and white wash. The ground becomes contaminated and if we can keep the sows on ground that is not shut away from the rain and sun except for the brief while that she is using it for a nest, the gain in sanitary cleanliness is great. —M. E. Sherman.

No Discarded or Abandoned Inventions of its Beaten Competitors are used in

THE IMPROVED

UNITED STATES SEPARATORS

THE UNITED STATES SEPARATORS ARE IN A CLASS BY THEMSELVES

The United States use inventions of their own **exclusively.**

The United States do not utilize any type of separator ever developed by their **"Would-be Competitors."**

These **"Would-be Competitors"** claim the earth, but "word claims" do not give them the title.

These **"Would-be Competitors"** claim that Dr. DeLaval was the inventor of "the first practical continuous flow centrifugal Cream Separator," his application being filed "July 31, 1879, Patent issued, No. 247,804, Oct. 4, 1881." This statement is not true as shown by the records in the Patent Office. Messrs. **Houston & Thomson** (who afterward became famous in the electrical line) **were the first** to be awarded a patent on such an apparatus. Application filed Oct. 29, 1877. Patent issued April 5, 1881, No. 239,659.

This Houston & Thomson Separator was also of the "Bevel Gear" type and was for either hand or power, therefore the claim of our **"Would-be Competitors"** on this point is not correct.

"These are the Rock-of-Gibraltar-like facts against which mere "word claims" by **Would-be Competitors** fade away like the mist of night before the rays of the morning sun."

We could enumerate a lot of things these **"Would-be Competitors"** claim, that are not in accordance with the facts or the records, "that fade away like the mists of night before the rays of the morning sun" of truth, but this is sufficient on this point for the present, we think, to convince all thoughtful readers that "word claims" do not have any weight in face of the facts.

These same **"Would-be Competitors"** claim their Separator is the Standard Cream Separator of the World, but they are not entitled to that "word claim," as the records show that the **United States Separator** beat them in the greatest contests ever held by any **National or International Exposition.**

In other advertisements they claim that "99½ per cent, of all expert creamery men, butter manufacturers, and real separator authorities living today use **DeLaval Separators** exclusively for they have learned by experience that the **DeLaval** is the only separator that will save all the cream all the time under all conditions."

Now every reader of intelligence knows that is another "word claim" and is not true, because a very large percentage of the leading breeders, separator authorities, creamerymen and dairymen, use and recommend the **United States Separator** because it proved in the great contest with the **DeLaval** and others, that it excelled everything in fifty (50) consecutive runs lasting over one month on ten different breeds of cows; also in every day use it has maintained its superiority.

Please read the following letter and see for yourselves if this looks as though the "99½ per cent word claim" is correct.

Poughkeepsie, N. Y., May 27, 1908.

In 1899 we introduced farm separators in our cream gathering system. Although we are within six miles of the DeLaval Separator's main works where all of their Separators are made, our patrons, after thorough investigation, preferred and purchased the U S.. Separators. There are about three U. S. Separators to every one of the DeLaval Separators used. Since we have started we have steadily increased our output. We get good prices for our butter, and feel proud of the record.

LaGRANGE CREAMERY,
H. R. HOYT, President.

Just think of it, **Three United States Separators to every one** of the **DeLaval** right under the shadow of their factory. **Why?** Because the United States is superior to all others in every feature of separator practicability. It is **made stronger, runs easier, wears longer, skims closer.**

Send for Catalogue No. 20.

VERMONT FARM MACHINE CO.

BELLOWS FALLS, VT.

Warehouses in every dairy section of the United States and Canada.

Prompt Delivery Assured California Customers from Stockton warehouse. No delays. Address all letters to Bellows Falls, Vt.

The Latest—Just Out

Perfection and Simplicity Combined

A perfect sewing device to mend harness, shoes, tents, awnings, saddles, suit cases, buggy tops, dash boards or any heavy material. Send $1.25 for sample. Free catalog. Agents wanted.

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LARGEST VEHICLE FACTORY IN THE WORLD

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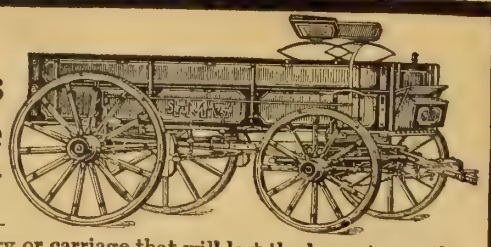
Means Genuine Economy



The first cost of a vehicle or a set of harness is one thing—the yearly cost is another. You want the farm wagon or buggy or carriage that will last the longest, run the easiest, require fewest repairs and, while costing no more in the beginning, will *cost a great deal less in the end.* That's the only *genuine economy.* The Studebaker Bros. Mfg. Co. have built up the largest vehicle and harness business in the world—*solely by saving money* for its customers. If you are looking for a *real* bargain—one that will give you *years* of satisfaction—

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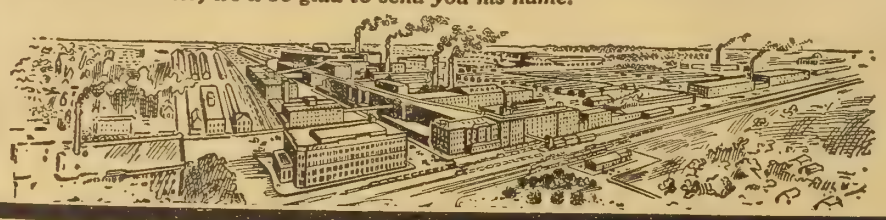

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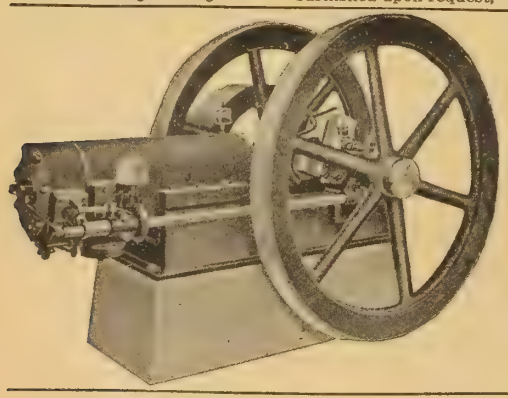

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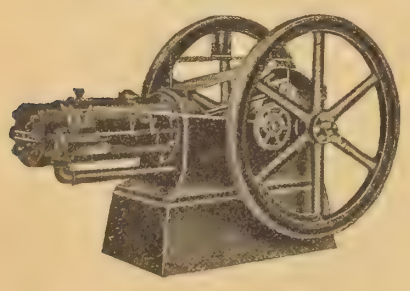

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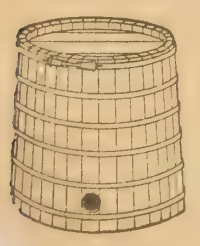

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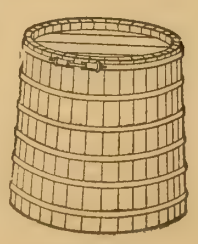

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that make a horse Wheeze, Roar, have Thick Wind, or Choke-down, can be removed with

ABSORBINE

or any Bunch or Swelling **No blister, no hair gone,** and horse kept at work. $2.00 per bottle, delivered. **Book 3 D free.**
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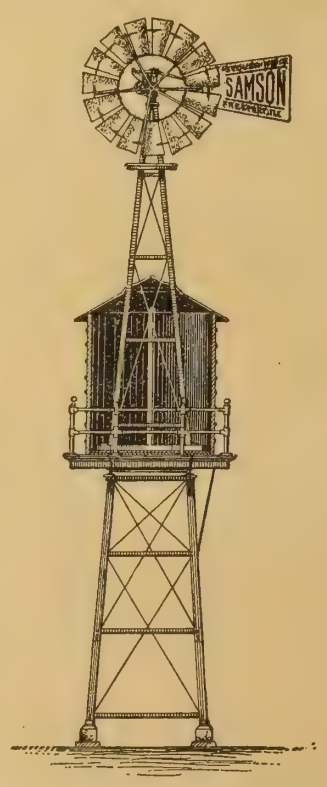
Have double gears, removable bearings and center lift, which double the life of the mill. They will last longer, pump more water and give better satisfaction than any other WIND MILL.



This is an up-to-date Sub-structure, Tank and Wind Mill outfit complete; substantial, economical and attractive. We build all kinds. Write us or our general agents for full information and prices, description &c., before purchasing.

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FEEDING SUGAR BEET PULP.

IN bulletin No. 90 of the Utah Experiment Station there are some interesting statements regarding the feeding value of beet pulp. It is shown that at the Colorado Station five milk cows were fed 24 pounds of beet pulp for six weeks in addition to hay and grain.. Then for five weeks 12 pounds of sugar beets were substituted for the beet pulp. The average weekly gain on beet pulp was 62 pounds and on sugar beets one-fifth pound. The average weekly milk yield on beet pulp was 131 pounds and on sugar beets 127.4. Over three times as much profit was derived from feeding 24 pounds of beet pulp per day at $1.00 per ton than from feeding 12 pounds of sugar beets at $4.00 per ton. The experiment indicated that with butter at only 20 cents per pound the sugar beet pulp fed in such quantities was worth $2.61 per ton.

At the Michigan Experiment Station beet pulp added to a mixed ration of hay and grain increased the milk flow. The California Experiment Station reports most favorably on pulp as a cow feed. When 20 to 80 pounds of pulp were fed per day there was a saving of four to 14 pounds of hay. The pulp had a most beneficial effect on the milk yield. Most of the cows were decreasing in milk flow at the time the pulp feed began after which there was an increase. A good flow was maintained through the whole period of pulp feeding but there was a considerable decrease after its close. The pulp did not effect the percentage of fat in the milk.

At the Utah Experiment Station the cows there have been fed on sugar beet pulp for some considerable time. The pulp has never yet affected the quality of the milk unfavorably, but has exercised a most healthful effect on the cows and served to increase the milk flow. With these facts in mind it seems that the Utah farmer can do no better than to obtain the sugar beet pulp from the factories, keep a number of dairy cows, and return the fertility already spoken of to the farm.

Experiments conducted in the feeding of the beet pulp to steers, sheep and hogs, have proven no less satisfactory. At the Logan sugar factory Mr. Hans Larsen has fed thousands of sheep and steers for shipment to the Pacific coast. He has found pulp very profitable feed and he values it at $2.50 per ton. His operations have been found successful. He feeds Lucerne pulp regularly twice a day in open yards and only such quantities are given as will be eaten up in a few hours.

The farmers in a great many localities in this state could do no better than to devote their entire attention to this line of farming. A farmer who owns 20 acres of good beet land, 20 acres of good alfalfa land with a few acres of pasture with about 15 to 20 head of cows is an independent man with a constant income of $150 to $200 per month every month of the year. The keeping of the cows on the farm will serve to keep up the fertility of his land and thus he can hand the farm down to his sons in as good condition as far as fertility is concerned as when he took it in its virgin state.

Since the sugar beet factories are pretty well established in various localities of the state we regard the matter of most vital importance that of

Creamery Supplies

Cream Separators — Milk Cans
Combined Churns — Milk Bottles
Babcock Testers — Brushes
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PASTEURIZERS

Creamery and Dairy Supplies and Machinery of all Styles and Sizes

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CUTTER'S
Anthrax and Blackleg VACCINES

Are given the preference by 80% of California stockmen because they give better results than others do.

Write for prices, testimonials and our NEW booklet on Anthrax and Blackleg

The Cutter Laboratory
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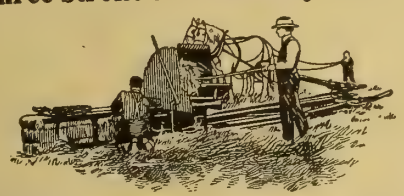

Two men can run it. All steel and iron. Smooth bales. Easy draft. Satisfaction guaranteed. Free trial. Ask for Catalogue 28.

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Frank A. Meacham, Proprietor.
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We Have For Sale a Number of Registered Young Bulls and Heifers **$100**

All our stock comes from the celebrated herd formerly owned by the Pierce Land and Stock Co., the premium herd of Holstein Friesians in California. **Oakwoods Stock Farm Co., Lathrop, Cal**

The Whiting Jersey Stock Farm Company

Is making the very best strains of blood fresh from the island of Jersey a specialty.
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Hay For Sale. Buy your hay in car lots. Special attention given to supplying alfalfa to dairies.
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Thoroughbred Poland China Swine
Black Minoras and Barred Rock Poultry
High Grade Stock of Best Strains.
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My Berkshires took 9 First, 6 Second and 4 Third Prizes and both Gold Medals. 50 Head For Sale.
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Registered A. J. C. C. Jerseys

St. Lambert and Flying Fox Blood. Margery Golden's Fox heads the Herd. Young stock for sale. GUY H. MILLER, Prop., R. 3, Modesto, Cal.

Geo. C. Roeding, Fresno, Cal., breeder of
Thoroughbred Holstein Bulls and Heifers
Thoroughbred Berkshire Bears and Sows

When writing advertisers, mention Cultivator

returning the sugar beet pulp to the farm and feeding it to dairy cows. We have talked over this matter considerably with farmers during the summer and find they simply have not taken the time to haul it away. If they can be brought to realize that it is worth several times its cost to them then we see no reason why its use could not be more general. It is certainly a well established fact that beet pulp is an excellent substitute for part of the hay and grain for milk cows and we look forward to its more extensive use.—The Deseret Farmer.

COLD CEMENT FLOORS.

Thoughtful, observing men have noted that cold, uncovered cement floors are not a good thing for cows. They have noted, too, that it is about impossible to keep bedding so spread over a cement floor that the cow will not bring her udder in contact with the cement sometimes when lying down. It is for this reason that the plan of covering the cement floor where the cows lie with boards, is so generally recommended.

Mr. L. E. Scott of Stanley, Wis., made the following experiment to determine the difference in temperature of plank and cement floors.

"I once took two basins of water at a temperature of ninety-eight degrees F. and covered top and sides with four thicknesses of cloth to prevent radiation except from the bottom. I put a dairy thermometer in each, placed one upon a plank in a stable and put the other by the side of it upon cement. In fifteen minutes there was a difference of six degrees and in an hour and a quarter the one on the cement was thirteen degrees colder than the one on the plank."

The udder is the seat of an enormous amount of blood circulation. We can easily imagine what the effect will be to bring that udder in contact for an hour, perhaps, with the cold cement. If we check the circulation of blood we are apt to bring on congestion, and garget, and other troubles ensue. Then, besides, it must lessen the flow of milk just in proportion as we check the circulation of the blood. The cow and her right conditions constitute a mighty deep subject. Yet there are plenty of farmers who think that their lack of knowledge is a better guide on this subject than the wisest intelligence.—Hoard's Dairyman.

SOUND AND WELL FORMED.

One of the most gratifying features of the horse business is found in the careful study that has been given to the selection of horses by buyers and patrons. A distinctly higher standard has been established. Many horses of the type and quality that were being sold a few years ago are quickly being rejected now. Many of the unsoundnesses and defects that were passed not long since are now under severe discrimination. Breeders have learned that size is not the only consideration. The very large horse of either sex is likely to prove disappointing as a breeder. Size without quality is certain to prove disastrous. —Prof. Curtis, Iowa.

A good time to buy brood sows is when they are about six months of age. Select sows that are of uniform type, of good breeding, and buy from a reliable breeder.

Feed the brood sow lightly for the first few days after farrowing. Give her all the sweet milk or warm water she will take.

TRADE IN YOUR INFERIOR SEPARATORS

15,000 American users of poor or worn-out separators traded them in last year on account of new

De Laval Cream Separators

and there are doubtless many more owners of such machines who will be glad to know that while such old machines have no actual value the DE LAVAL Company continues to make liberal "trade" allowances for them because of the opportunity such exchanges afford for the most practical illustration possible of the difference between good and poor separators and putting a stop to the sale of others like them in the same neighborhood. Nobody is injured through the re-sale of these old machines as they are simply broken-up and "scrapped" for their old metal value.

Then there are many thousands of DE LAVAL users who should know that they may exchange their out-of-date machines of from 10 to 25 years ago for the much improved, closer skimming, easier running and larger capacity machines of today.

Write in a description of your old machine—name, size and serial number—or see your DE LAVAL agent.

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107 First Street PORTLAND, OREG.
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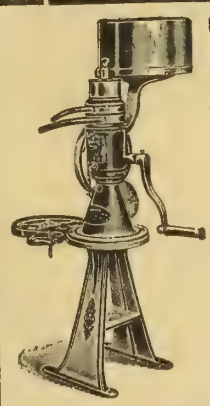

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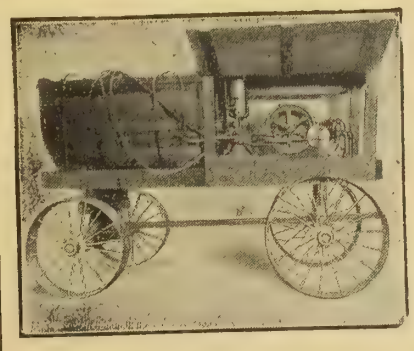
(Signed) MRS. M. MONROE, Vancouver, Wash.
You will be just as well pleased if you will try an Empire.

Empire Cream Separator Co.
No. 85 North Sixth Street, Portland, Oregon



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FREE TRIP TO SEE THIS HAY PRESS AT WORK

LOS ANGELES AND RETURN AT OUR EXPENSE

WE PAY YOU TO INSPECT THESE HAY PRESSES.

Instead of paying a salesman's fare to show you a small model of a hay press, we will pay your fare to Los Angeles and return, not exceeding $15.00, to examine our California Special New Century, full circle, all steel, self feed Hay Press and all others on sale there. It makes no difference which hay press you buy, we pay your railroad fare just the same.

When you see for yourself how this machine has been built expressly for heavy baling on the coast, how strong it is, how easy it is on horses, what smooth bales it turns out, you will understand why we make such an offer. It has 7-in step-over, pull power, high baling chamber, positive plunger rebound; it stands up to its work, no taking off of wheels. Has record of 39 tons per day. We will ship you one to try. If you don't want it we will pay freight both ways. Write now.

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Locate Lameness

Relieve and cure all the common ailments which handicap, blemish and decrease value of your horses.

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does these things. Has done it in hundreds of cases for many years. Write for the proofs and FREE VETERINARY BOOK. If your dealer cannot supply you, we'll ship by express. Don't experiment. Use Tuttle's Remedies.

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Willis A. Shaw, Los Angeles, Cal. Agent.

IT'S PENNY WISE

Policy to set out a good tree, costing good money, and then let the sun burn the bark or the rabbits gnaw it, when for $1 an acre you can get Yucca Tree Protectors that are practically indestructible. Write for free sample of the wrap. Yucca Manufacturing Company, 1380 Willow street, Los Angeles.

California Cultivator

ESTABLISHED 1889

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Thursday March 25, 1909

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Contents

ORANGE GROVES AND WATER OF COVINA, Cover.

IRRIGATION OF OUR GREAT VALLEY, 339.

WITH THE CITRUS GROWERS.—Citrus Orchard Word in Arizona; Hawaiian Pines in the United States; The Orange, 340, 341.

DECIDUOUS.—Core Rot of the Jonathan Apple; Waste in Sulphuring Vines; Bordeaux and Eau Celeste; Smut Explosions, 342, 343.

SMALL FRUITS AND VEGETABLES.—Easy to Grow Asparagus; Sauerkraut; Seed from Small Potatoes; Udo, 344.

THE ORNAMENTAL GARDEN.—Planting of Flower Seed; Home Grounds; The Back Yard; Three Famous Old Trees; Floral Progress; How They Got Their Name, 345, 346.

LIVE STOCK AND DAIRY.—Pigs Once More; Feeding Sugar Beet Pulp; Cold Cement Floors, 347, 348, 349.

EDITORIAL.—Parcels Post; Blossom Festival; Best Foot Foremost; Lower Water Rates; Worth Considering; Farm Names; Wool Tariff; Portola, 350.

AGRICULTURAL NOTES OF THE PACIFIC COAST.—Northern, Central, Southern, the Coast, 351.

POULRY.—Method of Poultry Raising; The Sex of Eggs; Brooders and Houses; Swell Head; Turkey Eggs; Control of Sex; Pointers on Geese; Charcoal for Fowls; Table Poultry; Benfits of Trap Nests, 352, 353, 354, 355, 356.

GENERAL AGRICULTURE.—Cement on the Farm; Value of Cotton Seed Meal; Educational Butter Scoring Contest, 357, 358.

QUERIES AND REPLIES.—Geological Survey; Alfalfa in the Orchard; Imperial Valley; Spraying for Fungus; White Beans; Walnut Dieback; Melon Seed; Cabbage Aphis; Protecting Apricots from Frost; Pruning Eucalypts; Roselle Jelly, 358, 359, 360.

VETERINARY.—Capped Hock, 360.

BEES AND THEIR CARE.—Some Misapprehensions Corrected, 361, 362.

HOUSEHOLD.—The Gospel of Labor; She Knew a Way; About the House; The Art of Folding Napkins; Housekeeping on the Businesslike Basis; Ironing Day Hints; Cleaning Velvet, 363, 364, 365.

PRODUCE MARKET.—Los Angeles Markets; San Francisco Markets; Citrus Markets, 366, 367.

PARCELS POST.

The visit of Mr. F. C. Beach, editor of the Scientific American and president of the Postal Progress League, is attracting attention more than ever to this movement which it is hoped will lead to increased postal facilities which will place the American producer on a par with his brother in Europe, in the one particular at least, that he may be granted the privilege of shipping his lighter and more compact products through the mail. Practically all of Europe has this privilege and in fact some nations have made arrangements with express companies in this country, so that parcels of several pounds weight are sent by post from those countries to San Francisco or Los Angeles at a less rate than it is possible for an American to send a similar article to a neighboring town.

It is astounding that such a condition has been permitted to exist as long as it has, but the grip of the express companies upon our legislators, combined with unreasoning prejudice of small shop-keepers the country over, holds back this step in advance.

Amongst the advantages which the League in California mentions as possible with the securing of Parcels Post, we may be permitted to quote the following:

As there are at present, at least 40,000 more postoffices than express offices in the United States, those sending packages will have a more complete service.

The farmer can send his produce in small quantities direct to the consumer at small cost and better profit.

The store-keeper will be enabled to replenish his stock more frequently and quickly, not having to meet expensive express charges. Not being obliged to keep on hand large quantities of goods, he can have a greater variety.

Delivery of goods to purchaser will be greatly facilitated, and in many cases with more economy than by private wagons, especially in suburban and rural districts.

Parcels Post presents so many advantages that in countries where it has become an established institution, so general is the satisfaction given that any one who would advocate its abolition would be regarded as insane.

BLOSSOM FESTIVAL.

The people of Saratoga are keeping open house this week, to all their friends, on the hillsides of that beautiful little suburb of the city of San Jose. The writer well remembers an experience at one of these blossom festivals a few years ago and with much pleasure. The hills were covered with prune trees, which with their blossoms, made them as white as the driven snow. This with the background of green, as the hills rose to the mountains beyond, gave a picture never to be forgotten.

This custom of observing a day which commemorates some feature or event of a community is worthy of more general observation in other towns of this state. There are but very few which observe such a day, but we may mention Lodi with its Grape Festival, Pasadena with her Tournament of Roses, Los Angeles with her Fiesta, Escondido also with a grape day, Cloverdale with her citrus fair, which is more in the nature of a festival or neighborhood gathering, likewise the Tulare Citrus Fair, which is becoming a great feature.

Let this list be extended, as in fact there are some other sections observing these festival days, but greater numbers, especially in fruit growing districts, should honor their products in this way. It is good advertising; it creates good fellowship, and increases the pride of the people of the community.

BEST FOOT FOREMOST.

We note in Sacramento valley papers, reference to the planting of orange trees on railroad grounds and near, where tourists passing through on cars will observe them. There can be no question, the orange is a most attractive fruit to the Easterner and we believe that which will secure the attention of the visitor to our state and make a favorable impression should be used in every way possible. Not only the planting of orange trees but the parking and beautifying of grounds near depots will be a most valuable asset to the community.

Too often visitors to a town, lands in the most objectionable section. We recall several places in this state where Chinatown with warehouses and other unsightly features are in the immediate foreground as one alights from the train. An attractive approach to any community needs a little thought and attention; but once the proper conditions are secured, the expense is an extremely small factor.

Plant orange trees, but do not stop there. Plant everything which will add to attractiveness and plant it in such a way that it will be attractive and not a mere jumble of planted things.

LOWER WATER RATES.

The steamship war is on and we are promised lower rates on many products which can be shipped by water from California to eastern points via the Isthmus. This will be an advantage to those shipping to Atlantic Coast points. We trust it will stimulate the dried fruit market so that the present supply may be reduced where it will do the consumer the most good.

WORTH CONSIDERING.

We have seen the statement that "were American officials as wide awake to the importance of rural highways as the officials of France, the gain to the American farmers would exceed a quarter billion dollars annually."

Of course "a quarter of a billion" means nothing to most of us. That is, its immensity is such that we can not conceive of it. But if our readers will divide it up into their own conception of a little fortune, it will be seen that in that amount of money possible to be saved are several thousand independent fortunes.

To be sure the saving of that vast sum will cost the investment of other great sums of money and of effort.

But this effort should be made. It is a crying need. The percentage of improved roads in the United States was but 7.14 of the total mileage, or that approximately only 150,000 miles of the total mileage of 2,150,000 has been in any degree improved.

Nations of the old world wonder why we are so far behind in this important public improvement.

It is especially worthy of note at this time that from the very dawn of civilization the nations which have ruled the world have lead all others in road building and road maintenance. If the links in this historic chain are to bind the United States to Egypt, Babylon, Carthage, Rome and France, a few hundred thousand miles of perfect highways must be laid without delay.

The time for an awakening is here, and the quicker the awakening occurs, the greater the benefit the farmer will enjoy.

FARM NAMES.

We are in receipt of a communication from Assemblyman Lawrence H. Wilson, of the Sixteenth District, in which he encloses bill which has been enacted and signed by the Governor and will take effect May 9th. This bill provides that "any person may adopt a name for any farm or estate owned or leased by him, and register it in the manner provided for the registration of trade marks. Such registration shall have the same effect as the registration of a trade mark. Any person selling or marketing the products grown on any particular farm or estate may use the name of such farm or estate as a trade mark on such products, in the same manner as provided for other trade marks in Section 3196 of this code, and subject to the same rights and duties as provided in this article."

All our farmers should take renewed interest in the naming of their farms, especially as there will be allowed but one farm in the State, as we understand it, to secure this trade mark privilege, of the same name.

WOOL TARIFF.

A live stock association located at Chicago sends a post card stating, "We have reliable information a strong effort is being made by respective interests to reduce duties on wool and hides." We have also heard from other sources that wool especially will not be interfered with in any way by the tariff revision. What the grounds for the statement on this post card are we are not informed but it is well for wool and live stock people to be awake to the situation and know whether a fight should be made to protect the industry by inducing Congress to let the present tax remain. The card states "a change in the present tariff would check the flow of immigration to the country," a strong point to be considered by the nation at large.

PORTOLA FESTIVAL.

We have received from the Executive Committee of the Portola Festival, to be held in San Francisco October 19-23, a statement that work has begun on the plans for a festival in honor of Gaspar de Portola. Portola was the first Spanish governor of the state of California and the discoverer of San Francisco bay. It is expected this festival will attract many people to the state and educate many in its early history.

Agricultural Notes of the Pacific Coast

Northern California

Humboldt county is appealing for a good roads movement.

Farmers at Oroville are petitioning for more farm telephones.

Heavy planting of potatoes is the order of the day at Live Oak, Sutter county.

Maple Creek in Humboldt county is showing less salmon running in the creek than usual.

Tehama county farmers rushed their late plowing and much spring barley has been seeded.

The olive oil and pickled olive industry of Corning is one of the leading features of that section.

The potato famine which was promised to materialize a few weeks ago is not so serious as was anticipated.

Vernon, Sutter county, was visited by a severe wind storm a few days since, doing little damage however.

The Cow Testing Association under process of formation at Ferndale held a meeting recently at which constitution and by-laws were adopted .

Extensive plowing is being done in fields which were overflowed during the earlier storms in District No. 70, below Yuba City, Sutter county.

The annual report of the Western Yolo Consolidated Creamery and Ice Company shows an annual production of nearly 23,000 pounds of butter.

The "peacherine," which is a new fruit introduced by a fruit grower near Stockton, is claimed to be selling well for this season's planting.

A bill passed by the State Senate has placed a tax limit of 2 cents a head upon migratory sheep. The present law authorizes a license of 5 cents.

A. E. Bourke claims he has the largest order for newly-hatched chicks ever given to one breeder. The order is for 15,000 White Leghorns to be shipped from Petaluma.

A proposition to irrigate the lands on the east side of the Ukiah valley in Mendocino county will greatly increase the productiveness of about 3000 acres of land.

George Shima, the Japanese "potato king," has recently secured a lease on 4300 acres of land along the San Joaquin river. He pays a rental of $19 per acre per year.

The suggestion is made that the railway yards through the Sacramento valley be planted to orange trees, so as to impress the tourist with the possibilities of the country as a citrus producer.

The Sacramento Drainage District, which at one time borrowed $25,000 of the state and later succeeded in having a law passed disorganizing the district, will now be compelled to pay the $25,000 which was borrowed.

The State Fair Association has arranged with the Oregon State Fair and the fair at Portland, one at Seattle and one at Boise, Idaho, to arrange the fairs so as to make a circuit of dates which will not conflict.

The weather forecaster at Sacramento has received reports from the snow regions of the mountain districts showing more snow at the head waters of the Yuba, American, and Feather rivers than there has been for years.

Central California

Salinas, Monterey county, is planting extensively of alfalfa this season.

Schools at Kern City observed Arbor Day by planting trees in the school grounds.

One of the most progressive farmers near Salinas is improving moist land by drainage.

Madera has the newest Local of the Farmers Union recently organized. P. C. Thede is president.

The Sunflower Creamery near Poplar, Tulare county, made 245,000 pounds of butter last year.

Visalia has a nervy thief who takes plants and trees which have been planted in orchard or yard.

An apple grower near Porterville is hauling some exceptionally fine apples and shipping to valley points.

Forest rangers from General Grant Park report great depth of snow in many portions of the park yet.

Lindsay still has a few oranges going forward, though the greater part of the crop is already marketed.

Hay growers near Salinas have disposed of large quantities of hay during the last few weeks of high prices.

An extensive planting of eucalyptus will be made on a tract of land near Madera. Five varieties will be planted.

Swarms of flies are making life miserable for farmers and stockmen between Knights Ferry and La Grange.

A co-operative creamery is the latest move at Kerman and it is hoped its early establishment will be accomplished.

The County Live Stock Inspector of Tulare county is placing large placards on the farms infested with Texas fever tick.

Investigations made by agents of the California Canners Company go to show that the coming crop will be exceptionally large.

The State Senate has refused to pass the Stuckenbruck bill which called for the removal of the protection from the meadow lark.

Some blossoming peach trees through the valley have been touched by late frosts and it is feared the crop will be materially shortened.

A bill recently passed by the Legislature transfers much rich land in what is known as the Laguna de Tache from Fresno to Kings county.

The fruit packing interests of this state have determined to make a fight against excessive freight rates and if necessary will use steamers by way of Panama.

At a recent meeting of the San Jose Grange an extensive discussion of the dust spray was entered into. The feeling prevailed that as yet the results are uncertain.

The Kern County Land Company has arranged for an exhibit at the coming state fair which will be in charge of a special agent qualified to explain the merits of that country.

Saratoga, Santa Clara county, is making great preparations for its blossom festival which will be given when prune blossoms are at their fullest, which probably will be either this week or next.

Southern California

Santa Ana has a live Farmers' Club.

Mecca is making a fine display of home grown dates.

Inglewood poultry people held a poultry show last week.

Choice citrus groves are in keen demand at Arlington, a suburb of Riverside.

The silk industry is being attempted on quite a large scale at Riverside.

A Bee keeper near San Fernando reports the bees doing exceedingly well.

Redlands claims the most perfectly fitted orange packing house in the country.

Arroyo Grande, San Luis Obispo county, is making a campaign for better roads.

Two thousand acres of land are all ready for planting to cotton in Imperial valley.

The Imperial County aDirymens Association is a prosperous co-operative organization.

has passed resolutions instructing the board of directors to oppose its passage as far as possible.

Antelope valley feels that the grain crop of the coming season is assured from present appearances.

The output of wool from Imperial valley during the past year is estimated at about 175,000 pounds.

The latest estimates on sugar beets planted at Oxnard are that it will aggregate not far from 17,000 acres.

A shipment of cotton seed from Texas has been destroyed because of coming from weevil infested sections.

Work has been begun on an irrigating ditch to convey water to lands in the Santiago canyon, Orange county.

California Development Company is planning for handling greater water supply for Imperial irrigators than ever before.

The Sierra Madre mountains are reported to be stocked with ice and snow to an extent greater than for many years.

Imperial valley is shipping from 40 to 50 crates of asparagus to Eastern markets daily. These are commanding about $12 per crate.

The directors of the Imperial Valley Milk Company have sold nearly all the stock necessary for the construction of a milk depot.

One cabbage grower at Coachella took a flyer in cabbage this year and as a result of three acres planted has bought 20 acres of land.

Articles of incorporation of the Santa Ana Dairy Farm have been filed in Orange county, for the purpose of supplying milk to the city trade.

The latest method of showing kindness to horses is the establishing of a farm home for decrepit horses to be located near the city of Pasadena.

Santa Ana valley irrigators are in arms over the possible passage of the Black bill in the State Legislature. The Santa Ana Valley Irrigation Company

Shipping of vegetables has dropped off somewhat at the Wanda, Orange county packing house, but shipping of citrus fruits has greatly increased. It is reported that spring peas will be shipped about April 10.

The Coast

Next year's Dry Farming Congress will be held at Billings, Montana, in November.

The dry farmers of Colorado have promise of one of the most successful seasons.

White Salmon valley in Washington boasts of having a parsnip five feet and ten inches long.

Apple growers near Dayton, Washington, find themselves compelled to spray at least once each year.

A bill has been introduced into the Arizona Assembly making a new county out of parts of Yuma, Maricopa, and Yavapai.

The people at Yuma are giving theatre benefits and otherwise endeavoring to raise the money for the Laguna Dam celebration.

The State of Utah is making a proposition to the territory of Arizona to purchase that part of Arizona lying north of the Grand Canyon.

Farmers in Washington are making an appeal to the Legislature to increase the appropriation for the Agricultural College of that state.

A large delegation of Colorado sugar beet growers appeared before the Ways and Means Committee to urge the retention of protection on sugar.

The grange which boasts of the largest charter membership on the coast is located at Scio, Oregon. It started with a charter containing 204 names.

An interesting and practical meeting of fruit growers was held by the Spokane County Horticultural Society at Spokane recently, the principal feature being a practical discussion of pruning of fruit trees.

The Agricultural Demonstration Train now touring western Oregon has a fully equipped chicken house and yard on board, or rather a flat car is given over to the chicken ranch and made a part of the exhibit.

The Farmers Demonstration Train in Washington has a novelty in that its speakers' platform is arranged on a flat car while over the flat car are arranged apple trees which are used to demonstrate the principls of pruning.

Experiments made at the station near Phoenix, Arizona, in the breeding of Tunis lambs are proving quite successful. The flesh of these lambs is very white and is said to have a gamey flavor which makes the mutton in good demand.

A circuit of wool sales has been arranged for the principal wool buying points of Eastern Oregon as follows: Pendleton, May 24-June 4; Heppener, May 27-June 18; Baker, June 5-22; Enterprise, June 25. It is claimed the price will average at least 25 per cent. better than last year.

At the short course for fruit growers at the State College at Pullman, Washington, this winter, the most instructive feature was demonstration trips into field and orchard. For instance, an article on pruning was followed by a visit to nearby orchards and a misshapen tree was taken in hand by experts and its pruning demonstrated before the attendants at the school.

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watches the temperature in your machine **Day** and **Night** and if for any reason it changes the instrument will call you by **Automatically** ringing the warning bell. Bells may be located at any place, such as in the Barn, the feed house and in the Dwelling. Price Complete $5. Satisfaction Guaranteed. Address nearest Agent, or

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Eggs—$1.50 per 15, $7.00 per 100 and $60.00 per 1000.

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Profit in the Poultry Yard

By Mrs. Frank Metcalf

We solicit short articles of a practical nature from the fancier and utility breeder, giving their experience with poultry. All inquiries pertaining to feed, management, disease and its prevention will be answered through these columns.

METHOD OF POULTRY RAISING.

(Continued from last Week.)

IT won't do to grease the hen while sitting, as a drop of grease will kill the unhatched chick double quick, as a neighbor of mine once found. She found her sitting hens were lousy and doused the nests, eggs and all with kerosene. Of course none hatched.

Care for the Little Ones.

Bowel trouble is another great cause of chicks dying, and is due to many causes. Sour food is one, and much of the feed we buy has been over-heated in the bin. Never feed to chicks anything that has a musty smell, neither feed them moldy bread. Over-feeding often causes bowel trouble, but where they have food before them all the time there is little danger of their over-eating. It is when they get very hungry and eat too much, the trouble starts.

If they droop, don't eat, and die after a few days, open one, and if the trouble was due to too rich food or too much of it, the liver will have little yellow spots on it and be enlarged, and dark-colored.

Raw eggs, mashed up shells and all, mixed with bran and meal, are far better than hard-boiled eggs for baby chicks, and will sometimes correct bowel trouble. Why not, when we use them for calves?

Lice.

For body lice on old birds, President Bryant of the American Poultry Association once gave me a pointer. We were attending the meeting at Rochester, N. Y., and I was about to buy an evil-smelling louse powder offered there. He called me aside and said "Don't put that stuff on your chickens and have your coops smelling like a disinfecting shop, but get two ounces of sweet oil and one ounce of oil of sassafras and put both into a machine oil can. Apply a few drops under each wing, on the head and around the vent and the birds will smell like a posy garden and not a louse can stand it."

Well, we all know that good perfume will keep moths out of clothing just as well as mothballs, so why not? And back east we always got sassafras poles for hen roosts when we could. Perhaps eucalyptus poles would be equally as effective. I sometimes make a strong tobacco tea and give my birds all a bath. I am sure it paid well, but shall try a bath of eucalyptus leaf tea some day.

Don'ts.

When I was a young girl, I once attended a lecture on physiognomy, and the lecturer pointed me out as having the typical nose of a scold. I didn't like this a bit, but have never been able to trade off the nose, so cannot finish this without a few don'ts.

Don't hatch out a lot of helpless little chicks, and then let them suffer for care. This is done so much, that if the ghosts of the poor little ones that have died for the want of food or water or warmth should arise before us, we couldn't see daylight. I have sinned myself, and know how other cares conflict with the care of chicks, to say nothing of an occasional pleasure. Why, one evening we had company to tea, and I lingered a little too long, and found one brooder lot bunched and 15 dead. Another time a piano agent came along as I was putting them up for the night and I listened to him just a minute or two, and lost a dozen while my back was turned, so quickly will the mischief be done.

Children and Chickens.

Don't try to raise too many chickens while you have little children needing your care. There is where so many of us sin. If motherhood was better cared for there would be less talk of race degeneration, but a man who wouldn't work a fine brood mare, will be blind to the results of his wife's hard work upon what should be more sacred, his own begotten child, and the woman works on, sometimes unnecessarily, sometimes, God help her, because she must.

A woman I know one day went out to feed her chickens and left two little children alone in the house. When she returned she found the three-months-old baby in convulsions because the elder one had poured carbolic acid all over its face, thinking she was giving it medicine. All the chickens in the world couldn't console that mother for her baby's death.

Sweeten the Ground.

Don't raise your chicks on the same ground two years in succession without plowing up. Change them to fresh ground often while growing if possible. A piece of ground can be gardened a few months and be in fine shape for chicks. Don't envy the breeders of fancy poultry and think their big prices are all profit, for their expenses are many. If you buy a sitting of fancy eggs, don't expect every one to hatch a prize winner, for it can't be done.

Don't let discouragement sour you. Mrs. Wiggs said she prayed that she might never get sour, whatever came; so let us cultivate cheerfulness and remember the motto: "Blessed are they who expect nothing, for they shall not be disappointed." It's a splendid motto to set a hen by.

THE SEX OF EGGS.

Time after time the question as to whether it is possible or not to either determine or ascertain the sex of a fertile egg crops up, and time after time the ebullition subsides again without getting any "forrader," so to speak, and we are fain to acknowledge,—at least, the majority of us are,—that it is not possible to say with any degree of certainty what sex of chicken any certain egg will bring forth.

I find that generally there are more cockerels in the early hatches than in the late ones, and this is as far as my own knowledge carries me upon the subject; but as the matter itself has important bearings, if only it could be mastered even in a feeble way, it can do no harm to note a few of the theories advanced. A very

popular belief but one that is fallacious in practice, notwithstanding the assertions of some of its votaries, is that round-ended eggs produce pullets in the main. Were this so, round ended eggs would be at a premium among breeders, and the price of table fowls would rise. Another, though far less popular theory is that eggs set directly after being laid will produce pullets, while if kept for several days cockerels are most likely to be hatched. If there is anything in this theory many of our breeders would prefer stale eggs to fresh for sitting purposes. A theory that any fowl keeper may prove or disprove to his own satisfaction is that connected with the "lie" of the egg in the nest. Should the pointed end point towards the north it means a cock. This is as the hen leaves it after laying, and if the poultry keeper will only take the trouble to go round his nests, compass in hand, marking the eggs as gathered, he should be able to tell subsequently whether or not the theory will bear the light of investigation. As nothing is said of the eggs pointing betwixt and between, these had best be ignored during the test.

Some hold the more vigorous the male the more numerous the cockerels. A non-vigorous male means plenty of infertile eggs, but plenty of cockerels generally come in proportion to the number of eggs hatched out. Some, again, assert that for breeding plenty of pullets, the females being very vigorous means success in the matter; but as yet this has not been conclusively proved. An unproved theory connected with fowls in small runs is that the withholding of meat during the breeding season means that plenty of pullets will be forthcoming from the eggs that may be hatched. This may be easily tested and is about as reliable as the majority of the theories mentioned, which, I am afraid, is not saying much in favor of its answering well in practice.

Neither is there much reliance to be placed in the theory that eggs laid late in the afternoon or during the night will produce pullets; or in the one that more pullets may be expected from penned fowls than from those running at large. Another theory that has nothing whatever in it I believe, is that first crosses mean a preponderance of cockerels, while a second cross means pullets. As to whether mongrels or pure breds are the more likely to produce pullets I do not remember ever having heard an opinion upon. Some declare that young fowls produce the most cockerels; others that the contrary is the case, namely that if cockerels are wanted good old stagers should be put up for breeding purposes. Some, again, say that one should mate pullet with an old cock, others mate a cockerel with old hens when wanting eggs that will produce pullets. Some say that in-bred,—hard in-bred, that is—fowls are to be relied upon for production of eggs that will bring forth considerably more pullets than cockerels, while other poultry keepers hold that pullets are most likely to be in the majority if the parents have had as much fresh blood as possible bred into their veins for generations, also taking care that when making up the breeding pens the sexes are entirely unrelated. I have not tried the former plan, but know from experience that there is no truth whatever in the latter.

There are probably many other methods advocated as having a bearing upon the sex of eggs, and there have been, I believe, some experiments made with X-ray and other media with the idea of gaining some clue as to whether sex could be foreseen or not; but whatever the future may hold, we are so far in the dark as regards an even approximate certainty of the sex of a fertile egg. But, although we do not as yet understand the subject, we have hopes that sooner or later the problem will admit of solution . I believe, though it is only my own personal belief, and carries no conclusive weight, that with effort and perseverence it would be possible to establish a strain that would in the main produce pullets and although the task would be a by no means easy one, when once established, such a strain would repay all efforts. At the time of writing, rumors that a method of turning cockerels into layers is to the fore; but I confess that I have doubts about the practicability of the

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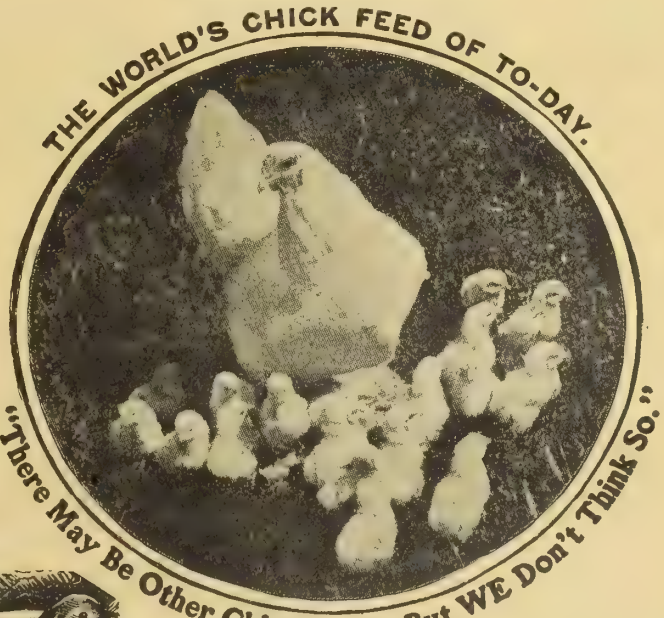

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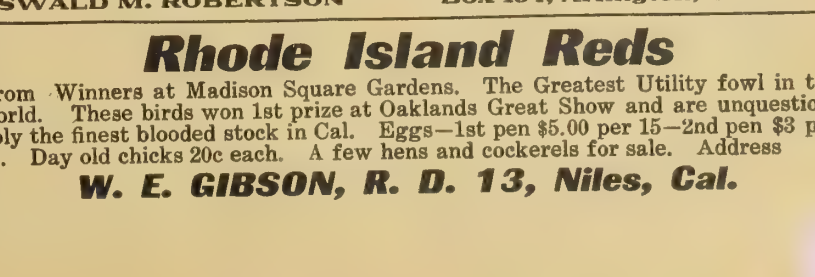

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who have used our goods once, will always come to us for their fertilizers. We are making a special study of plant life and are therefore in a position to manufacture fertilizers that exactly meet the requirements of each plant. Let us know what you intend to plant, and we will name your special compositions. Write for our new booklet "The Farmers Friend," for 1909.

THE PACIFIC GUANO & FERTILIZER COMPANY
268 East Market St., San Francisco, Cal.

scheme. Should such a thing turn out to be possible, then there need be no further discussion as regards the sex of eggs. Meanwhile there is a chance for any enthusiastic poultry keeper with plenty of spare time to commence investigation of the egg, and it may be that sooner or later some very simple method will be found of determining with something like certainty, whether a given egg, if fertile, will produce a cockerel or a pullet.

It is hard to say upon what lines the egg should be tackled, but I should think that at any rate weighing, immersion, testing in lights of various strengths, tint, and origin, and other expedients of a like nature, should be given a more or less extended trial; and by the time that all this has been gone through, the experimentor would be better able to say upon what lines future investigation should turn than we are. During the whole of the experiments copious and careful notes should be taken and no pains spared in fully verifying any conclusions that might be come to. Then care should be necessary in the keeping of the various hatches of chickens separate and easily identified until there could be no mistake about the sex of the birds. Of course, an anatomist would tell the sex at any age, but I am presuming that the chickens are in ordinary hands and intended to be reared in any case. If kept simply for the purpose of experiment, probably a breed,—say, Leghorns,—in which the cockerels may be picked out at an early age would give most satisfaction, though any breed would answer the purpose. And then should the experimentor be persevering enough or lucky enough to discover the secret, he would prove a benefactor to the poultry world, and would himself become immortally famous.—Poultry, England.

POULTRY QUERIES.

Brooders and Houses.

I am thinking of going into the chicken business to some extent. I want to keep 200 or 300 hens on hand. Please give me instructions: 1. For a fireless brooder to hold chicks from a 300-egg incubator; 2. What is the greatest number of chicks one can put in each compartment of the brooder? 3. How large will each apartment have to be to accommodate a certain number of chicks? 4. How long do chickens hatched April 1st have to be in brooder or under hens? 5. Which is the best plan, to keep 200 hens and sell 100 every alternate year, when 2 years old, or 300 and sell one-third every year at 3 years of age? (I intend to sell 100 and replace 100 each year) 6. How many inches is needed for each hen on the roost, and what space shall I leave between roosts? 7. What is the greatest number of grown fowls that I can keep in each house if they have free range in day time?—A subscriber, Dinuba.

The above list of questions looks like business. Here is a man who intends to succeed, and he will not go at it blindly, therefore he will "make good." 1. A fireless brooder is simply a box about 18 to 20 inches square, and from six to ten inches deep, with tight floor and a little door for the chicks to go in and out on level with floor. A frame is placed over the chicks, held in place by cleats and having cloth of different kinds tacked loosely on so it will sag over the chicks' backs, and air provided for above this cloth in various ways, some using augur holes and some just cracks, and chaff cushions or extra covers over this cloth, and chaff or cut straw under the chicks. This must be placed inside a building of some kind and is simply used for a hover. The best way is to buy one already made and copy it. 2. Not over 50 chicks should be put in one of these brooders and 25 is still better, as they will have to be divided as they grow, if too many are put together. Say 50 the first two weeks, then either move them to a larger brooder or divide them. 3. A 20-inch square compartment will brood 50 chicks for four weeks. 4. Much depends upon the breed. Some breeds feather out so much quicker than others, and such can stand being weaned from hens or brooders very much younger than those feathering out more slowly, say from four to six weeks, while the bare-backed ones will need heat (mothering) some two weeks longer. 5. Would sell half the hens each year, whether I kept 100 or 1000. 6. Allow from six to eight inches space on the roost for each fowl, according to size, the larger breeds, of course, requiring more room than the smaller ones. Roosts should be 15 inches apart for small breeds and 20 for large ones. 7. 50 should be the limit for each house.—Mrs. Frank Metcalf.

Swell Head.

Could you tell me through the Cultivator, what is the matter with my chickens, five weeks old? Their heads swell up all over, especially around their ears, and under the throat. It is not at all like roup or sore-head. They have no colds, eyes and nose do not run and they have no offensive odor. In all my experience with poultry I have never had anything like it. They have free range, but run principally in a garden where there is a great many cabbages and turnips. They have plenty of fresh water and grit, also alfalfa. I feed Kaffir corn whole. Please tell me what is the trouble and what to do as they are thoroughbreds and I am in despair. The inside of their throat and mouth look all right; all the swelling seems to be on the outside of head and throat; even the back of their heads is swollen.—M. B., Brawley.

Your chicks certainly must have "swell-head" caused by either too close housing at night and chilling in consequence when let out, or it may be caused by draughts blowing upon them during the night through a crack or knot-hole. Would grease their heads well with vaseline or lard in which a few drops of camphor has been worked. And I should certainly stop feeding Kaffir corn, and feed cracked wheat and corn and be very sure the feed was free from musty odor and that their house was kept dry and clean.

Camphorated lard is excellent for taking the swelling out of anything, and should be used freely and always kept on hand.—Mrs. Frank Metcalf.

Turkey Eggs.

Where can I get 100 turkey eggs?—A. E., Lynn, Rosamond, Kern County.

Mrs. Hubbard, San Fernando, and other advertisers of the Cultivator can supply you. However, any other turkey breeder who has large quantities might do well to place his announcement in the Cultivator as there seems to be strong demand for turkey eggs this season.

Control of Sex.

A writer from Redlands, referring to a recent query as to control of sex of eggs, says: "I can tell you that I have found that with few roosters the hatch will show more roosters than pullets and vice versa."

POINTERS ON GEESE.

Care and patience will bring success.

Geese must have freedom to thrive well.

Pure breeds are always to be preferred to crosses.

For best results, all changes in mating should be made in the fall.

Geese are unusually hardy and subject to no particular disease.

Keep the stock gentle and tame, and they will turn in more profit.

Two or three year old geese are more profitable than yearlings.

A mating can be continued for seven or eight years without a change.

If the geese have confidence in the feeder they will be very friendly with him.

From ten to twenty eggs are laid

before the goose shows a disposition to sit.

Shelter should be provided where the geese may go during inclement weather, and especially at night.

A bird with a yellow or orange colored bill, is always preferred by the Jews in purchasing geese in the market.

The Rhode Island Experiment Station says in handling geese they should always be taken by the neck, and when lifted from the ground the body should be turned with the back toward the person handling it. In that position it cannot strike, and will remain quiet and docile. The body can be partly supported by seizing the first joint of the wing with one hand. If the goose is held facing one, it will strike hard blows with its wings, or scratch with its feet.—The Feather.

CHARCOAL FOR FOWLS.

Having charcoal where the fowls can get it when wanted will tend to keep their digestion in fine order. In fact, where mistakes are not too pronounced, charcoal will correct them and keep the fowls in good condition. Even when the fowl is all right, there may be times, owing to other causes, that a hen's digestion will get out of order. If, however, she can get charcoal to eat, she will, as a rule, soon be back to a normal state. If any portion of the farm is being cleared up and there are many large fires made from heaps of brush and wood, particularly of green there will be found among the ashes pieces of charcoal. While these pieces may not be just the same in composition as the purchased charcoal, they will be found to answer almost as well when crushed and given to the fowls. In buying charcoal, get the coarse ground kind. This can be placed where those fowls that want it can get it. On the other hand, if powdered charcoal is used, it will have to be mixed with the mash and all will have to eat it. Some fowls do not require charcoal and therefore the results may not be beneficial. Growing chickens as they near maturity are voracious feeders and sometimes cause trouble for themselves from overeating, when they get an opportunity to do so. Keeping charcoal where they can reach it will help to prevent trouble in this regard.—Orff's Review.

TABLE POULTRY.

As a general thing it takes about three to four months to grow a broiler, depending upon the weight wanted.

For shrinkage in dressing broilers an allowance of about a half pound each should be allowed.

It is a mistake to ship to market poultry that is not of good size and in good condition.

Too great care cannot be taken in killing and dressing poultry, to avoid bruising. Discoloration quickly follows a bruise.

There is a chance for skill and energy in the broiler business, and when applied there is profit for the grower.—The Feather.

Expensive poultry houses are for the rich and should hinder no one from going into the business.

Do not set eggs from the small breeds under large hens, because they are likely to break them.

"Success" FIRELESS BROODERS

150-Chick Size, $5; 50-Chick Size, $3. We Pay Freight

For over a year we have been making experiments with fireless brooders, and we have our fireless brooder perfected now and ready for sale.

For some time we have been selling these brooders as fast as we could make them here in the city, and there was no use to advertise them. However, we have now installed machinery for this special purpose and can turn these brooders out very fast and at a price much less than you could make one of them. I am anxious to get them introduced everywhere quickly, and in order to do so, we will make you the lowest price ever heard of for a first class well made brooder. This is not a rough lumber brooder, but it is made from first grade kiln dried redwood lumber, nicely stained mahogany color, and is light and can be easily moved from one place to another. It weighs ready for shipping just 25 pounds. Holds 150 chicks, and will raise them to three weeks old, and will raise 75 to six weeks of age. We also make a 50-chick brooder which weighs 15 pounds, holds 50 chicks to three weeks old and will hold 30 to six weeks old. After chicks are three weeks old, you can make a box to hold them as they do not require much heat to raise after three weeks.

If you will take my advice on the fireless brooders you will use the 150 size, as by putting at least 75 chicks or more you will have better luck, I honestly believe, than with a small 50-chick brooder. The reason for this is that 100 or 150 chicks will keep warmer than fifty chicks. These brooders can be used either indoors or outdoors, but for the first week they should be kept in a room where it would be comfortable to sleep. Some companies will say that you can put them right outdoors; you can, but if you do you will chill your chicks sure, I don't care who makes the so-called outdoor fireless brooders or what they claim on paper. Experience will teach you that for the first few days to keep the brooder in some enclosure to help protect the chicks from the cold early mornings. In the day time the brooder can be picked up and carried into the sun easily.

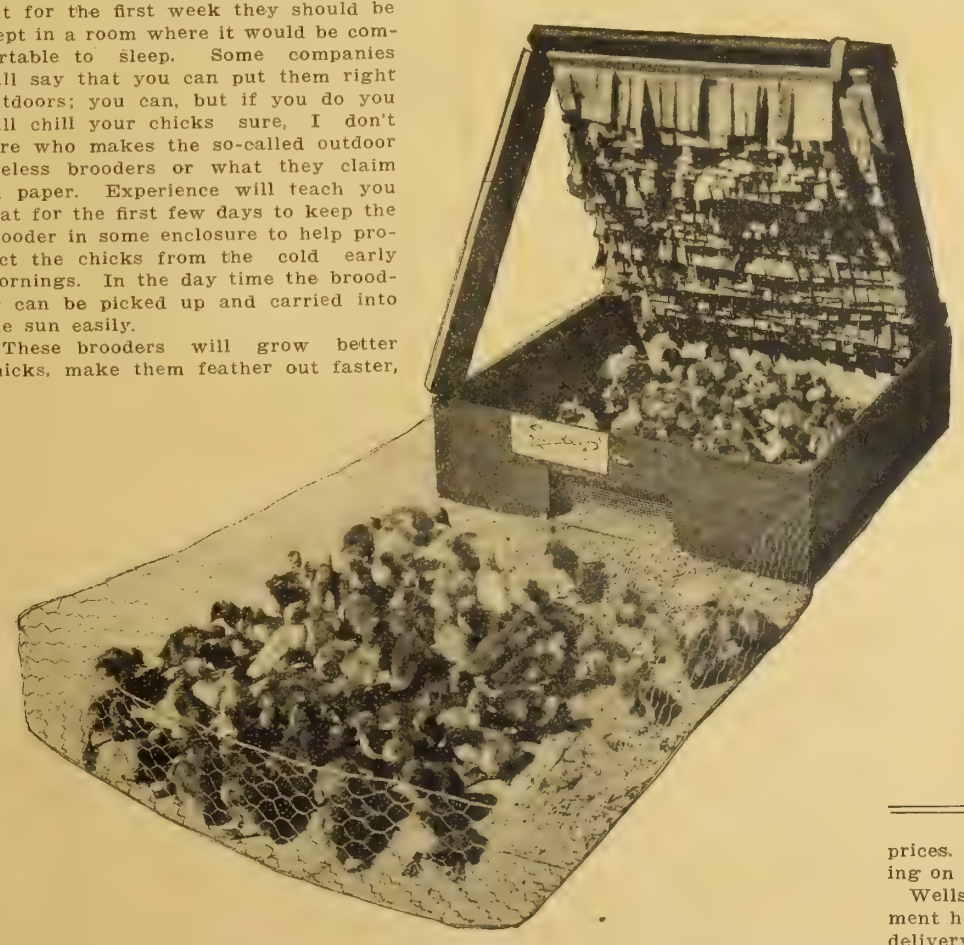
These brooders will grow better chicks, make them feather out faster, and more healthy and strong, than any heated brooder ever made. I honestly believe that all heated brooders made by all incubator and brooder companies will be done away with in the next two years. We make as good a brooder heated by lamps as can be made; it will not raise any more chicks than the fireless brooder, and takes much more time to manage it. There is **NO DANGER OF FIRE,** no lamp to bother with, no oil expense, and you will save more and better chicks than any other way you can brood them. You may be skeptical and afraid to try a fireless brooder, but I will sell you one on trial, if it don't do the work as I say it will send it back and get every cent. I know absolutely that you will raise the chicks if they are reasonably strong to start with. No brooder on earth will raise weaklings from pullets' eggs. Be sure you get good eggs to start with, and then you will know that your chicks will be good when you get them.

With ordinary care and following my simple directions in regard to feed, etc., you will raise 90 to 95 per cent of every lot of chicks you put in the brooder. Try one at my expense, if they don't do the work I will refund every cent. I sell my incubators the same way, not a customer has asked for his money back this year up to this date, March 14th. $100 cash to anyone who proves to the contrary.

I make good incubators and make good brooders. I know how. I am here to help you at any time. Ask me questions. Get my incubator catalogue, and tell your neighbors to send for one.

Improvements

We are improving these brooders from time to time, we are always trying to make better goods. If you receive a brooder that is some different than the one shown here, it will be in the way of improvement. I sell on this understanding only, as I guarantee the brooder and will refund you the price in full if not satisfactory, providing you return the brooder in five days, you know positively that you will get your money's worth and more.



Prices

We make this brooder in two sizes, namely, 50-chick and 150-chick size. The 50-chick brooder is sold at the low price of $3.00 and the 150-chick size at $5.00.

We Pay Freight to Your Nearest Railroad Station Anywhere

If you wish to order chicks from the Pioneer Hatchery Co., 112 East Eighth street, this city, you may buy fifty chicks and get the 50-chick brooder for $2.50, and we can ship the chicks to you in the brooder by express.

The 150-chick brooders sells at $4 when you order 100 or 150 chicks. At least this many chicks must be ordered to get the special price on the brooder. We do not pay the freight when we ship them filled with chicks by express. The express rate is lower when you have the chicks come in the brooder, and as they weigh but little the expense of shipping is small. Customers living in **LOS ANGELES** that wish to order both chicks and brooder, please remember we do not deliver these brooders in the city at the special prices. Cartage must be added, depending on where delivery is to be made.

Wells, Fargo Company calls for shipment here at our door and we have no delivery expense, and that's one reason we can sell the $5 brooder for $4 and the $3.00 brooder for $2.50.

We make small delivery charge here in the city at these low prices, ask about it. If other goods are going in your vicinity no charge is made. Try one or more of these brooders and you will use no other. Come and see them if you can.

Try one "SUCCESS" Brooder and you will use no other

We Pay Freight

E. E. McClanahan 112 E. Eighth, Los Angeles

Manufacturer of the FAMOUS "SUCCESS" HOT WATER INCUBATORS AND BROODERS

Free 32-Page Book to all who ask for it, mailed free

Coulson's
POULTRY FOODS

Special Dry Chick Food

COULSON'S SPECIAL DRY CHICK FOOD, during the five years it has been on the market has justly earned for itself its great reputation as a life-saver for little chicks by its special adaptation to their needs.

THE UTMOST CARE is observed in the selection of each of the dozen or more articles composing this unequalled feed; tender seeds, cracked grains blown free from dust, steel-cut oats, tiny pieces of dried meat and bone, willow and pure bone charcoal, are combined with other very necessary ingredients; every article being selected with special reference to its quality, strength, and desirability for the needs of the young chick.

FOR YOU TO BUY the many different articles composing Coulson's Special Dry Chick Food is quite impracticable; you could not be certain as to their quality for one thing, and the high cost of certain of them when purchased in small lots might lead to their being left out to the detriment of the chick.

TO MAINTAIN the high reputation of COULSON'S SPECIAL DRY CHICK FOOD, nothing is left undone to make it absolutely the best feed that can be made for the little chicks.

COULSON'S SPECIAL DRY CHICK FOOD can be fed exclusively to your little chicks for the first six weeks, at a cost of about four cents (4c) each; and what is of still greater importance, it will do all that can be done in the way of feed to bring them through that critical period of their lives in full health and vigor.

TO RAISE EVERY CHICK you hatch; to have fine, large, healthy chicks; to have chicks that will stand up and crow when eight weeks old; to raise chicks that you will be proud of, FEED COULSON'S SPECIAL DRY CHICK FOOD, THE LIFE SAVER.

Write Us for Free Samples and Prices

Manufactured Only By

Coulson Poultry and Stock Food Company *Petaluma, California*

GERMAIN SEED CO., Distributing Agents, Los Angeles, Cal.

BENEFITS OF TRAP NESTS.

We can learn nothing about the hen physically until we submit her eggs to hatching tests. If each egg be marked with hen's number and placed in a pedigree hatcher we learn the following things of each individual hen:

1. That her eggs are either fertile or non-fertile.
2. That they hatch or do not hatch.
3. That her chicks are strong or are weak.
4. The percentage of chicks raised from her eggs.
5. The defects her chicks are prone to.

With these facts for a basis we can:

1. Mate the infertile hen with another cock.
2. We can either remedy the hatching quality or not set them (the eggs.)
3. We can build up hen's vitality or not set eggs.
4. We can seek the reason and try to remedy it.
5. We can breed to remove these defects.

The best laying hen may not lay fertile eggs or her eggs may be fertile and not hatch.

Her chicks may be weak and sickly and live, or they may die.

Her chicks may be defective in many respects. Yet this superior hen would be the most valuable hen, but for these defects, and with the defects removed such a hen pays better than a whole flock of poor ones.

It is only by numbering hens and marketing eggs laid in trap nests and using pedigree hatchers that we can learn anything about each individual hen and her characteristics, and until we do, we work in the dark, darkly.

When feed is expensive the poor hen eats up all profits from the good hen. One-half the flock good, to the other half poor, is a stand-off. Two-thirds poor to one-third good is a loss.

I have seen eggs laid for family use which cost more than if bought fresh.

I have seen laying hens killed for table when the flock had many non-layers.

Ignorance is at the "root of all failures." "We did not know." But the trap nest remedies all that.

When people will recognize that exact knowledge is necessary to success and take steps to learn the physical qualities of each hen, they will have taken a long stride towards poultry success.

People should realize that they may make more money with the one-third good part of their flock than they are making with all. They should realize that the eggs and chicks from a fine layer are worth very much more, if no defects exist than the eggs or chicks from all the poor ones.

Trap nests are cheaply made and with a yard attached may be visited but two or three times daily if food and water be kept in yard.

For myself, I would install trap nests before buying a hatcher, as without them I could expect nothing but failure.—Southern Poultry Journal.

Some assert that sprouted grain can be made the principal food. This is not clearly proven, but there is no doubt that it solves the question of green food and makes it possible to keep fowls in more limited quarters than could be done without it.

Polly Oil

February 6, 1909.

Dear Sirs:—

I have used your Poultry Tonic for a long time and think there is none so good. But you have one remedy, POLLY OIL, I do not feel you know its worth. I had one little sample bottle given me a few weeks ago. I used it on two cases of swell head and it stopped the swelling right away. I had one pullet on which the lump had stayed for over two months, her bill having grown crooked, but as she was a pet I could not have her killed, but could not drive the lump away until I got the sample of Polly Oil. It then commenced to go away, and in a few days it was nearly gone. I have cured every one since that showed any signs of such trouble. I have used all I have and do not want to be without it.

Very respectfully,

FANNIE L. E. WEBBER,
Pasadena, Cal.

If not sold by your dealer send the price, 50 cents, and we will send you a bottle, prepaid. WEST COAST MILL, Los Angeles, Cal.

WATER GLASS FOR EGG PRESERVING

Why sell eggs at 15c a dozen? Eggs kept in this water glass will keep 12 months or more and are as fresh as new laid. Sold in 25c tins for 150 eggs and $1 tins for 1200 eggs. Egg preserving baskets with cage and cover $1 each. There is only one kind of water glass suitable for this purpose and it is on sale at West Coast Seed Co., 115 West Seventh St., Los Angeles.

Croley's

High protein MEAT SCRAP.
Just what the name implies.

A Meat Scrap High in Protein

Why Not Use the Best

Manufactured by

Geo. H. Croley

Poultry Supplies

631-637 Brannan St. San Francisco. Cal.

Los Angeles Agents, Globe Mills, 925 East Third Street.

"Chicks well hatched are half raised"

CHICKS

We can furnish you strong, healthy day-old chicks from selected utility stock. No. 1 White Leghorns, $9.00 per 100; $25.00 for 300; $40.00 for 500. Special White Leghorns, $12.00 per 100; $34.00 per 300; $55.00 for 500. Brown Leghorns, $10.00 per 100. Black Minorcas, $10.00 and $12.50 per 100. R. I. Reds, $12.50 and $15.00 per 100. Barred Plymouth Rocks, $12.50 and $15.00 per 100. In lots of 50 add one cent each.

San Jose Hatchery

395 E. St. James Street., San Jose, Cal.

Henry Langenschwadt, Mgr.

YOU CAN BUY A CHEAP INCUBATOR
But Is It Fire-Proof? Is It Insurable?

Why Take Risks when you can buy a **Cyphers Fire Proofed Insurable Incubator**—for years the leader in hatching **more and stronger chicks** than any other? Our 212-page Poultry Guide Book is full of valuable poultry information, as well as illustrated description of these Insurable Incubators. It is **Free** if you send us names and addresses of two acquaintances who keep poultry.

CYPHERS INCUBATOR COMPANY, Buffalo, N. Y.
Oakland, Cal.; New York City, N. Y.; Chicago, Ill.; Boston, Mass.; Kansas City, Mo.

SULLIVANS' "Commonwealth Strain" **Buff Orpingtons**

We win more prizes on Pacific Coast at leading shows than ALL COMPETITORS COMBINED. This season; 40 regular prize ribbons, 15 SPECIAL ribbons, and 9 SILVER CUPS. Free Catalogue, stock and eggs for sale. Eggs $2.00 and up. Stock, $2.50 and up.

Mr. & Mrs. W. S. Sullivan
GARDEN VALLEY POULTRY YARDS
5 minutes from depot. **Agnew, Cal.**
State V. P. Nat. S. C. B. O. Club for Cal.

WOODMANSE STEEL WINDMILLS

The strongest and best ever produced in America, it precedes all others in pumping. A full line of repairs for all style mills kept on hand. Look up your agent in your location for Woodmanse mills. If you have no agent write direct and I will gladly answer all correspondence and send circulars.

F. H. OSLER Southern Cal. Agent Pomona, Cal.

When writing advertisers, mention Cultivator.

The Schmeiser Portable Automatic Derrick

The State is Using a Number of These Derricks on the Experimental Farm, at Davis, With Great Success.

No Guy Ropes Required

Any kind of a fork or a net may be used, whichever may be desired.

You can not afford to be without it. Will pay for itself the first season, every year after that doing your work for nothing. Write for descriptive circular and we will tell you how it can be done.

Schmeiser Mfg. Co.
Davis, California

General Agriculture

CEMENT ON THE FARM.

WITH the wonderful development of the Portland cement industry during the past fifteen years comes one of the most ideal building materials ever produced—cement. This is the beginning of the "Cement Age."

The price of lumber is advancing to almost prohibitive figures; it is therefore natural that a substitute material with the advantages of moderate cost, durability, and beauty should be developed and looked upon with favor.

Today, cement can be successfully used on the farm in the place of wood in the construction of floors, troughs, gutters, tanks, ditches, dams, walks, posts, building blocks, etc.

Cement.

Use nothing but the best cement that can be obtained. It should be in a fine, powdery condition and contain no lumps. Cement should be stored in a dry place, as dampness is an element of great danger.

Sand.

The sand used should be clean, sharp, and not too fine. It should be free from loam or clay, as these will tend to destroy the adhesive quality and to retard the setting of the cement. Clay mixed with the sand may be removed, to some extent, by washing.

By sharp sand, we mean that the edges of the grains must be sharp and not round or worn off, as will often be the case in sand found in the bed of a stream. Coarse sand is better than fine sand. Fine sand, even if clean, makes a poorer mortar or concrete, and requires more cement to thoroughly coat the grains. A large proportion of the grains should measure from 1-32 to 1-16 of an inch in diameter. Some fine sand is necessary to help fill the spaces between the larger grains, and will thus save cement.

Water.

The water used should be clean and free from acids or alkalies.

Mixtures.

There are two general classes of mixtures, the tamped, or dry, and the poured, or wet. For the tamped add just enough water so that when all the concrete is in the form or mold and is well tamped, water will show on the surface. This kind of a mixture is usually used for floors, sidewalks, etc. For the wet or poured mixture, enough water is added to make it thin enough to pour from a pail. This is poured into the mold, and the mold must be left on it long enough for the mixture to set, which is from one to two days of summer weather. This last mixture is adapted to use in the construction of fence posts, watering troughs, foundations, etc.

Proportions.

For ordinary farm construction, as the making of floors, foundations, walks, etc., the following proportion is recommended: One part cement, 2½ parts clean, sharp sand, and 5 parts of loose gravel or broken stone. For floors, this should be tamped in to a depth of from 5 to 8 inches. This should be finished with a surface coat 1 to 1½ inches in thickness, composed of 1 part cement and 1½ to 2 parts of clean, coarse sand, mixed. Nearly all constructions which come in contact with water should be covered with a mortar at least as rich as the proportion last named. For engine foundation, 1 part cement, 2 parts sand, and 4 parts broken stone is good.

In estimating the amount of material necessary for a certain construction, do not make the mistake of thinking that a mixture of 1 barrel of cement, 2½ barrels of loose sand, and 5 barrels of gravel or broken stone will make 8½ barrels of concrete. The sand will fill the voids between the gravel or broken stone, and the cement fills the voids between the grains of sand. The total amount of concrete will be but slightly more than the amount of gravel or broken stone used.

To make one cubic yard of concrete of the following proportion—1 part cement, 2½ parts sand, and 5 parts gravel—requires about 1¼ barrels of cement (5 sacks), 3¼ barrels of sand, and 6½ barrels of gravel.

Mixing.

Be very careful in measuring the proportions. Mix the concrete as near the place it is to be used as possible. Use as soon as mixed. Do not mix more than can be used in 20 minutes.

Measure the sand first, and spread it in an even layer in a mixing box; spread the cement on top and turn it with a shovel at least three times. Then add the broken stone or gravel which has previously been wet, and turn the whole at least three times. Begin to add the water on the second turning, not too much at once. A sprinkling pot is better than a hose for adding the water, as it does not wash away the cement.

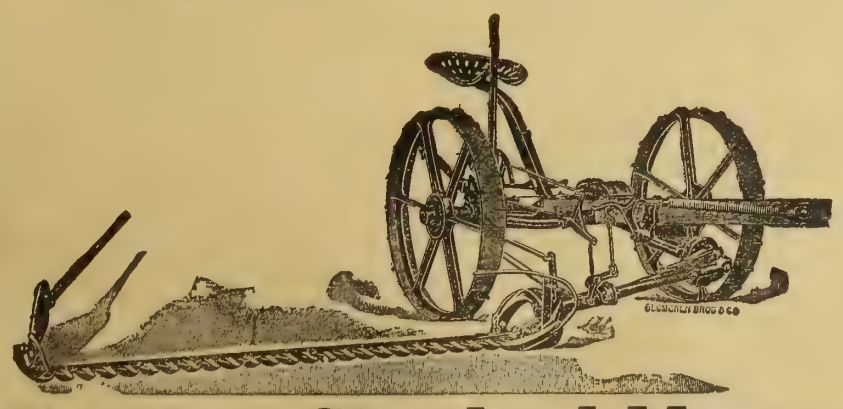
Concrete work should be avoided in freezing weather, as frost damages it. Where it is absolutely necessary to do work at this time, a small amount of salt added to the water will prevent freezing; this does not damage the concrete when used in small quantities.

An objection is sometimes raised that concrete floors and walks are too smooth and become slippery when wet. This fault is largely due to the fact that the finishing surface was completed with a steel smoothing trowel instead of a wooden trowel, smoothing board, or straight edge, which would have left the surface rough. This fault is also overcome, in a great measure, by dividing the wearing surface into small squares, about four inches on each side, by means of triangular grooves three-eights of an inch in depth. This not only makes a neat appearance, but furnishes a good foothold for stock.—H. M. Bainer, Colorado Agricultural College.

A FRICTION STORY

A small boy can slide faster down a smooth, greased board than he can down an ungreased board full of slivers.

MORAL: A mower which comes closest to elimitating friction will require the least power to operate.



The New Standard Mower

The Cutter Bar is curved when raised, so as to be mathematically straight, to form a frictionless channel for the knife, when lowered. This Bar is patented and can be used only on the New Standard Mower.

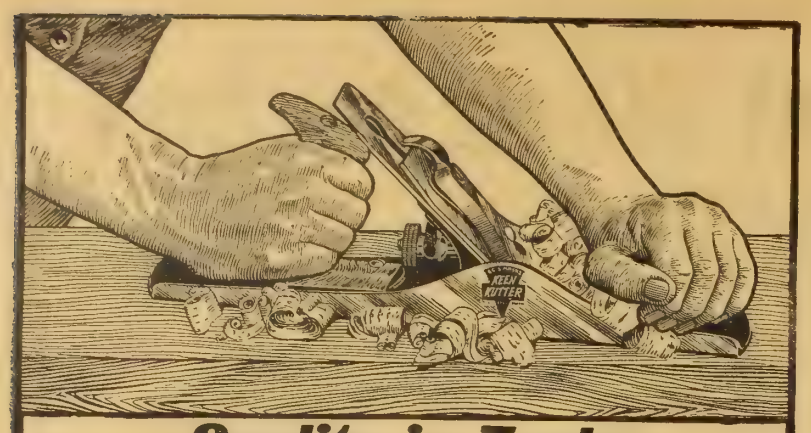
The entire weight of the Cutter Bar is transferred through the Suspension Spring to the main wheels. The bar is carried—overcoming the friction of a dragging bar which is pulled or pushed on the ground.

Steel Rollers and Steel Balls surround the main shaft and pitman shaft.

The New Standard Mower develops more cutting power from its special high speed gearing and the grip of the main wheels on the ground than is developed in any other mower—although less power is required to operate it on account of absence of friction.

A folder giving full detailed description of the New Standard Mower and our other Haying Tools will be mailed free on application.

Newell Mathews Co.
200 North Los Angeles Street
Los Angeles, California



Quality in Tools

Tools for the workshop, farm or home must be tools of quality. A plane, for instance, to smooth a board properly, must have a keen blade, carefully adjusted—its surface must be true and it must fit the hand.

KEEN KUTTER
Tools and Cutlery

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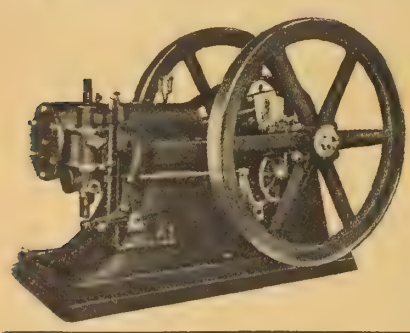

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VALUE OF COTTONSEED MEAL.

The value of cottonseed meal for producing meat, milk, and butter is well established. It is one of the cheapest of the highly nitrogenous feeding stuffs, and is therefore one of the most economical for balancing rations deficient in protein, such as those in which corn is the principal grain. As the analysis * * * shows, it is very concentrated and should be fed in comparatively small quantities is connection with a large proportion of coarse food, such as silage, corn, straw, corn stover, cottonseed hulls, etc., or with good pasturage.

Although milch cows will do well for an indefinite period on cottonseed or cottonseed meal as the sole grain food, it is better to add a second, such as corn meal or wheat bran, to the ration.

If fed to cows in large amounts without proper admixture of other feeding stuffs, it is likely to injure the quality of butter as regards flavor and color. It appears, however, to harden the butter and thus to enable it to stand shipment better. It has also been found to facilitate very materially the rise of cream by gravity.—From Farmers' Bulletin No. 36, U. S. Department of Agriculture.

EDUCATIONAL BUTTER SCORING CONTEST.

The call for the first entry to the California Educational Butter Scoring Contest brought a response from twenty-four creamery butter makers. Because of careful packing and cool weather most of it reached Davis in good condition. On March 1st it was scored by Mr. C. L. Mitchel, U. S. butter expert of San Francisco, assisted by members of the Dairy Department

Letters of careful criticism will go forth to the various butter makers as fast as they can be prepared.

This is an excellent begining and we hope that the interest shown will be maintained. The next entries will be called for in April. In the meantime the butter makers should prepare to use starters more generally. Those who have done well at this season without starters will need to look to their laurels as the weather becomes warmer.—Herbert A. Hopper, Davis.

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Geological Survey.

Please tell me through the Cultivator where the maps and papers, described in a former Cultivator, spoken of as Water Supply Paper 222 plate 1, may be secured.—A Subscriber, Azusa.

These papers may be had by addressing Geological Survey, Washington, D. C.

Alfalfa in the Orchard.

Is it beneficial or otherwise to raise alfalfa in an orchard of prunes and apricots? I have plenty of water for irrigation.—Subscriber, San Jose.

As a rule orchardists in California prefer clean culture, but if a strip is left either side of the trees and alfalfa planted in the center, prunes and apricots should not be materially injured. Some orchardists in the southern end of the state have cultivated the two crops that way and with good results, always, of course, provided abundance of water is supplied.

Imperial Valley.

Please inform me as to conditions in Imperial Valley, I am told there are strong northeast winds. How much is the rainfall and is there malaria and chills? Is there any dampness like sections near the coast? How is drinking water and where does it come from? Have they thunder showers in summer and is it sultry when hot there?—W. H., Palmdale.

Imperial Valley has its wind storms at times, but we are informed by those living there that they are exceptional. The rain fall is practically nothing, at least so slight that no dependence whatever is placed upon it. Irrigation water is abundant and no crops or trees whatever are attempted without its use. We believe there is practically no malaria, as conditions are exceedingly arid. During the Summer, storms are common in the mountains and at such times more or less humidity prevails and the heat is somewhat oppressive, but as a rule the dryness of the atmosphere makes the heat endurable. Drinking water is all secured from the Colorado River, cleared in settling basins and then it is drawn to cisterns.

Spraying for Fungus.

I was prevented on account of rains from spraying my apricots for shot hole fungus before blossoming time, may it be successfully done yet? The fungus is not as bad here as in the north, the leaves are never affected. I am the only one who is spraying for it in this section. Some years there is none whatever, other years quite bad. I fear on account of the wet conditions favorable to fungus, it will pay to spray this year. Trees are blossoming exceptionally well, and there is promise of an immense crop.—J. F., Santa Paula.

It is unfortunate that the spraying was not done while the trees were perfectly dormant and the stronger solution used; however, the following formula may be used safely on foliage: Lime 4 lbs., blue stone 4 lbs., water 40 gallons. Dissolve the blue stone in part of the water, slake the lime in an earthen vessel and pour the dissolved solution together with the remainder of the water. Stir constantly while pouring.

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White Beans.

Please tell me what small white beans are recommended, what is the average yield per acre and when is the best time to plant.—S. C., Greenfield.

The greater part of the small white beans grown in California are grown in the San Joaquin and Sacramento Valleys. Stockton is the center of the industry. The best time to plant is possibly in May. The yield per acre is sometimes as high as 2000 pounds, usually 1500 or lower. Your other query will be answered in the Veterinary department next week.

Walnut Die-back.

Should the wood on walnuts that has been winter killed be cut back to live wood or let alone to take its own course. My trees are mostly two years old, the curious part to me is that the nipped trees are scattered through the grove next to those that show no sign of frost. They seem to be the thriftiest trees. I undertook to make my trees hardy last fall so they could stand the frost. They were not irrigated after August 1st, but had thorough cultivation until November. Do you advise covering the cut with grafting wax after the limbs are removed, or isn't that necessary.—A. B., Hemet.

The die-back you speak of is not likely caused by freezing, but most likely because the water was taken from your trees too early in the season . This happens frequently among trees that start very vigorously in the spring and are not irrigated at all and as you say the most vigorous trees are most affected because they need the most water.

It is perfectly safe to keep the ground well watered all the time as the trees will stop growing in time to harden wherever walnuts will do well. You can irrigate walnuts thoroughly during the first half of September and have no winter killed branches. If the trees become too dry, so that they will start growing when an early fall rain comes, they are in danger of having the tender growth frosted, but this will not happen if the ground has been kept moist.

Since you have dead branches it will be best to wait until the buds start and then cut back to a vigorous bud that is starting on the upper side of the branch so as to keep your trees upright. You will not need wax on the cuts as they will heal over in a few months if cut within one-half inch of the bud.

The softshell walnuts have always been considered hardy but will not fruit well in the northern part of the state, neither does the Franquette fruit well in the southern part of the state.

Melon Seed.

I wish to grow melons for seed for the market; what is a safe distance to plant musk-melons to prevent cross pollenizing? Also will plant water-melons and would like to know if pumpkins will cross with melons.—G. J., Ripon.

Musk-melons of different varieties should be kept as far apart as possible. We would not say a quarter of a mile, yet we presume that would be a safe distance; even then it is possible that bees will carry pollen from other blossoms; better keep them as great a distance apart as possible. Water-melons may be planted near the musk-melons. On the other hand, pumpkins will mix and give you seed of no value.

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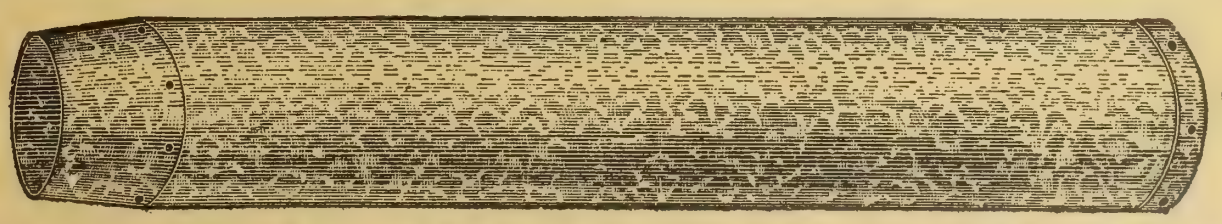

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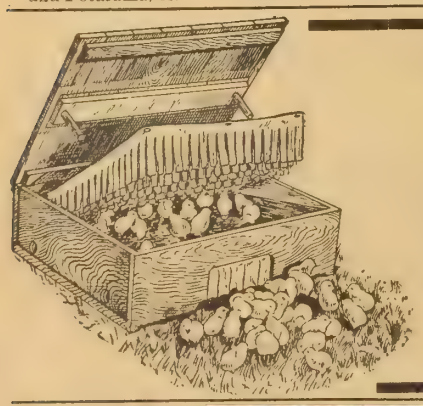

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Cabbage Aphis.

I would like to ask if there is a sure method of keeping cabbage free from lice, one that can be applied without more trouble and expense than the cabbage is worth.—C. E. H., Holtville, Calif.

As the writer of the above underscores the word sure in his letter, we assume he wants to know very definitely. We might positively answer in the affirmative had he not added as a last suggestion that it must be a remedy that is to be applied without more trouble and expense than the cabbage is worth. The cabbage aphis is exceedingly troublesome once it is established in a community as it is over the entire Imperial valley. It is unfortunate that ranchers have not made an attempt to prevent this pest from securing a foot-hold in that section, for it has succeeded wonderfully in reproducing itself and has become a serious pest. The recent demonstration train carried with it and left in that section quantities of the little lady bug which will probably aid in keeping down the pest there this season. Mr. Ehrhorn's suggestion given to Imperial Valley farmers were practically these: Be sure the plants are grown in a bed so protected from the aphis by the use of cheese cloth or other protection that no aphis can get on the plants to be set, then remove all growth near where they are planted which may harbor the pest, allow no weeds to grow and the moment you notice a plant infected, either spray with kerosene emulsion or burn at once. Aphis increases rapidly and every family destroyed means a saving of millions of young within the next few days. At the time of marketing the old crop burn, or bury very deeply, any plants which may be left so that the millions of aphis will not be left to populate the field at planting of the next crop. If this is done and the fields left bare during the summer it should be clear of aphis next fall. The only absolutely sure protection would be to grow your cabbage in a glass case.

Protecting Apricots from Frost.

My Apricot orchard of 150 acres is loaded with bloom and promises a good crop. Several years ago there was promise for a good crop until April 1st, until a cold rain followed by cold west winds during the day and night breeze from the mountains brought us killing frost for ten consecutive nights. I did not have any crop at all. Are "Briquettes" made from crude oil, shavings ,etc., a sure protection from frost and how is crude oil burned in pots?—A. E., Moorepark.

Protection of a large tract of land as mentioned above would require extensive preparation and we doubt if it could be done in time to operate this year. The Griffith-Smudge Fuel Company, Los Angeles, or the Frost Prevention Company of Fresno can give you information in this matter. The Griffith Company use crude oil and shavings and manufacture a fuel which gives better results in a stove manufactured by the same company. We think the Fresno Company uses oil in its plan. If protection has to be given for ten nights it would be a question whether such protection would be profitable.

Pruning Eucalyptus.

Do the branches of Eucalyptus need to be cut off to a height of from four to five feet from the ground every year. I did that to my grove which is four years old and was told that I would ruin the trees.—J. A. S. S., San Jacinto.

If trees are to be grown for wood, or where it is desirable to have stocky trunks, they need not be trimmed up, for as long as the branches are growing it aids in making a stocky, larger trunk than if kept constantly cut off. The trimming of side branches causes the trunk to grow more spindling and is only done along walks as when in the way. In fact some prefer to top the trees so as to make side branches to grow more vigorously. On the other hand it is claimed that where these limbs are never trimmed and allowed to die, still hanging to the tree, that the wood continues to grow around the dead branches and makes a bad knot hole in lumber. For this reason it is advisable to remove all dead limbs.

Roselle Jelly.

At what stage should Roselle "pods" be picked for making jelly, is there any part of the bush used excepting the pods. What causes rhubarb to go to seed and how close should it be pulled.

We enjoy the Cultivator very much and draw straws to see who gets it first.—M. & S. Ritchey, Amador County.

The calyx or so-called pods are picked before the seed hardens, some cut the pod in two before using for jelly, others strip off the fiesy calyx and use it alone, as a rule, however, the whole, uncut pod is used in making jelly. This fleshy calyx and the gelatinous substance around the seeds are the only parts of the plant used. The delicious acid drink made from these calyxes should encourage its more extensive culture. The seeding of rhubarb is very perplexing and the only remedy is to cut as soon as the seed stalk starts. The plants vary greatly in this particular. Some never run to seed at all, those which are the most persistent are almost worthless for that reason.

Veterinary

Answers in this column by Dr. R. T. Whittlesey, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Capped Hock.

I have a young horse, unbroken, that has swelling on point of hock; the skin seems to be thickening; there is no soreness or lameness. I first noticed it several months ago, and blistered lightly several times, which seemed to reduce swelling somewhat, but doesn't remove it. What is trouble and treatment?—Subscriber, Paso Robles.

Your horse has what is called a capped hock; it does him no harm in any way but looks. It will probably never entirely disappear, and I know nothing better than what you have used. You might repeat it several times, giving the skin plenty of time to recover between blisters.—R. T. W.

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Bees and Their Care

SOME MISAPPREHENSIONS CORRECTED.

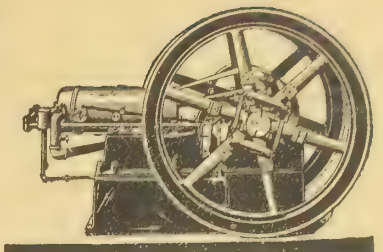
THE Cultivator recently quoted from an article in Gleanings in Bee Culture which criticised the proposed California law, or ammendment to it rather. Regarding that article Prof. Ralph Benton, in charge of Apiculture, University of California, writes:

"The main trend of this discussion is correct, but there are certain misapprehensions and interpretations that we desire to clear up in the minds of the beekeeping public. In the first place when attempts are made to discuss or interpret the California law or the amendment in question, it must be borne in mind that our law relates not only to foul brood but to all of the brood diseases of bees and also to the adult diseases of bees commonly and collectively called paralysis. Keeping this steadily in mind let us consider some of the questions raised in the discussion referred to. In the first place the statement is made that the amendment provides for a 'University Inspector of Foul Brood.' This is but a slight error in name, but we desire to correct it for the term so used is misleading. What the amendment does provide for is a State Supervising Inspector of Apiaries who shall be Apiarian Pathologist of the State Agricultural Experiment Station, an institution separate but closely connected with the University. Note that this officer is an 'Inspector of Apiaries' and not simply a foul brood inspector. This is true of all of our county inspectors under the present law; they are 'Inspectors of Apiaries' and as such inspect and treat for not only foul brood, but all of the other maladies of bees. As Apiarian Pathologist the State Supervising Inspector of Apiaries will conduct investigations in the diseases and other enemies of bees, and undoubtedly, ranking as an Instructor in the University, it will fall to him to conduct such courses of instruction as are given in the College of Agriculture in the diseases of bees.

"Now coming to the main point around which most of the discussion pro and con has centered. We refer to the section relating to the importation of queens into California. There are two things that must be remembered when discussing this section; firstly, the section in question relates to the importation of queens not only in ordinary mailing cages but also queens in 'nuclei' or 'swarm boxes'; and secondly that the whole law relates in all of its applications not only to foul brood but to all brood diseases and also to the adult diseases of bees or paralysis. The exact causes of certain of these diseases is not known, but there seems to be overwhelming evidence pointing to the fact that certain of these diseases known as pickled brood and paralysis are in some way directly connected in transmission and spread through the queens. Time and again have these diseases been introduced into apiaries previously free from disease through the agency of an importation of queens. Time and again have partial and in some instances in certain of these diseases a permanent cure resulted from requeening with fresh and uninfected stock the apiary so infected. When we refer to these diseases which in certain portions of the United States do not flourish and in many portions are but minor maladies, an adequate appreciation must be had by the beekeeping public of the virulence and the extent of the ravages of these same diseases as transplanted and permitted to flourish under California climatic and other conditions. In some localities so-called paralysis is much more dreaded than foul brood and rightly so if we are to judge from the havoc wrought by this baffling disease. The writer has been in apiaries in California in which all of the flight bees have been taken off and hive after hive so decimated in numbers that brood rearing operations were at a standstill for lack of bees and stores to proceed on. In passing down the rows of such an apiary, from a pint to two quarts or more of dead bees could be scraped up in a pile in front of each colony and hardly a place to step without crushing a struggling and diseased bee. If foul brood is an insidious disease in that it cuts off the supply of young bees, paralysis is just as insidious as far as practical returns are concerned in that it takes off all the flight or working bees. So much for the basis upon which the beekeepers of California have seen fit to include in their proposed law a section relative to the importation of not only bees, but specifically queens as well.

"Now a few words in regard to the possible interpretation of the law. The proposed measure is very clear and definite in its statement. There is nothing in it relative to the inspection of queens either at the postoffice or at an express office. There is nothing in it in fact binding an immediate inspection of queens upon their arrival by the inspector unless the inspector so desires to rule. What the section in question does provide is first that all queens introduced into the State of California or from one county into another county within the State without a clean bill of health are so introduced at the risk of the consignee. If the consignee does not wish his property endangered and to make himself liable for the importation of uncertified bees, immediately upon the arrival of such a consignment of bees, he is required to notify the inspector of apiaries holding such queens subject to his orders. With the sanction of the inspector the queens may then be introduced into the apiaries of the consignee and kept under observation for a period of not less than sixty days at the end of which period if no disease has developed the queens may be pronounced free from disease and then and only then lawfully introduced. This in no way debars the sending of queens into California by any eastern breeder and as Mr. Root has repeatedly asserted works no hardship there, as Mr. Pryal anticipated might result to Eastern shippers of queens. And, further, California bee keepers do not, as Mr. Root anticipates, feel it a hardship at their end of the line since it is with the California beekeepers that the proposed measure emanated and they have been supporting it with an overwhelming majority, quite unanimously except in a few quarters. As we have repeatedly pointed out, the real burden would lie

(Continued on Page 362.)



A RELIABLE WATER SUPPLY FOR IRRIGATION

AFTER preparing the ground, sowing the seed and getting the crop well started, your greatest concern is for a reliable water supply.

You *must* have water to irrigate in season. Your crop may be ruined in a single day for the want of it.

You have a dependable supply of water in the form of low lying lakes, ponds and reservoirs. The problem is to raise this water so you can apply it to the land.

Do you know that you can raise such water and make it available for irrigating all your lands by means of the powerful I.H.C. gasoline engines?

They will not only pump water for you in large quantities, but they do it economically. It costs practically nothing to keep an I. H. C. engine in repairs, and the expense of operating it is a very small item compared to the value of the crops you can raise.

An I. H. C. engine as the basis of your irrigating plant makes you master of the situation. You are independent of the ditch and ditch officers. You have a water supply that is all your own. You can start your engine any time and apply water to your land whenever the crops require it.

Keep an I. H. C. engine supplied with gasoline and it runs dependably, hour after hour, requiring but very little attention. You need return to the engine only occasionally, so you are free to spend practically all your time handling the water in the field.

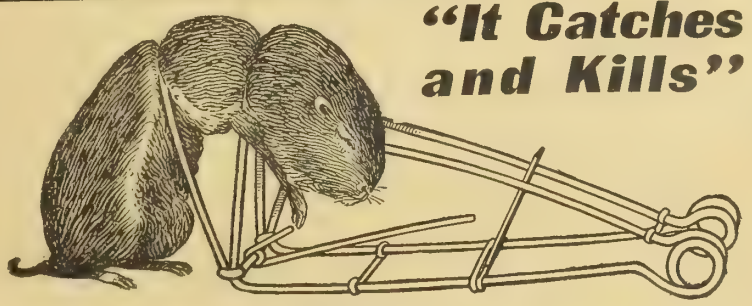
One of the advantages in purchasing an I. H. C. engine is that the engine can be used for many other purposes besides pumping. It is a general all-round farm engine—an absolutely reliable source of cheap power for operating the grindstone, churn, fanning mill, feed grinder, separator, bone cutter, washing machine, etc. I. H. C. engines are made in many styles and sizes, so that you will be able to find just the engine you want. There are

I. H. C. Vertical Engines—made in 2, 3 and 25-horse-power.
Horizontal (portable and stationary)—in 4, 6, 8, 10, 12, 15 and 20-horse-power.
Gasoline Tractors—in 12, 15 and 20-horse-power.
Famous Air-Cooled Engines—in 1 and 2-horse-power.
Spraying and Sawing Outfits in various styles and sizes.

Call on the International local agent handling I. H. C. engines. He will supply you with catalogs and full particulars. Or, if you prefer, write to nearest branch house.

WESTERN BRANCH HOUSES: Denver, Colo.; Helena, Montana; Portland, Ore.; Spokane, Wash.; Salt Lake City, Utah; San Francisco, Cal.

International Harvester Company of America, Chicago, U. S. A.
(Incorporated)



"It Catches and Kills"

Improved 2-Ring

C. V. GOPHER TRAP

Impossible to squirm out. Two rings and a set of sharp claws sieze and instantly disable the animal and cause almost instant death. A perfect trap—no other ever used where the improved "C. V." is once introduced. Superior construction, non-rusting finish. If your dealer has n one, send us his name and 25c for one or $2.50 for a dozen, post paid.

FALLS MFG. CO., Factories, San Francisco

Bee Supplies

For the Pacific Coast

We are the exclusive agents for the **A. I. Root Co., Medina, Ohio.** Our hives are manufactured from selected California Sugar Pine. Branch houses at Los Angeles and Elk Grove, Cal. Write for Catalog. We also manufacture orange, fruit and packing shook, drying trays etc. Beeswax wanted.

Madary's Planing Mill,
Fresno, California

Mercer's Weed Process Foundation

If you would be successful with your bees use Mercer's Weed Process Foundation. Absolutely the best on the market. Send me your beeswax to make up.

H. J. Mercer, 948 East Second St., Los Angeles, Cal.
Dealer in All Kinds of Beekeepers' Supplies

Pacific Seed Co.
C. Bagnall, Prop.
GROWERS AND IMPORTERS OF
Grass, Vegetable and Flower Seeds
All Kinds of Bulbs and Onion Sets
609 J St., Sacramento, Cal.
Send for Catalogue. Please mention Cultivator.

Harris Seed Co.
The San Diego Seed House
High Grade Farm, Garden and Flower Seeds
Our New Catalogue is ready for mailing. A postal card with your address will bring it.
1632 H St. - San Diego, Cal.

Classified Liner Columns

Rates 1½ cents per word per issue. No ad. accepted for less than 25 cents. Our classified columns are the clearing house for the readers of the Cultivator. Here you can insert an ad. for the small sum of 1½ cents per word per issue, and be sure that it will be read by thousands.

FARM LANDS FOR SALE.

FOR SALE — PRICE $3000, NICE mountain ranch, 162 acres, five miles from Napa, 35 acres in cultivation, rest good pasture and timber, 700 cords wood sell for $7.00 a cord in Napa; good house, barn, chicken houses, 3 horses, cow, chickens, wagons; family orchard, water piped all around; all tools; close by county road. MR. P. J. FOGARTY, Napa, Cal.

35 ACRES ORANGES FOR SALE BY owner. Varieties largely late. A consistent producer. Fine house and other improvements figured in low. Exchange book open for inspection as to returns. One-third cash. Selling account of ill health. An exceptionally desirable property. No agents. Address F. L., Cultivator Office.

IMPERIAL VALLEY—BRAWLEY LOTS, Weston 10 acre oranges, melon, alfalfa tracts. I arrange daily excusions at low rates; answer your letters immediately and call when possible. Address JAMES H. SHULTS, M.D., General Sales Agt., 2100 La Salle Ave., Los Angeles, Cal.

RANCHERS, ATTENTION—OUR SPECialty, oranges groves and ranches. If you have one to sell or exchange, list with us. We have many customers, who wish to buy and exchange for country property. Los Angeles Purchasing Co., 404 Chamber of Commerce, Los Angeles, Cal.

TULARE CITRUS BELT—WE HAVE the cheapest and best orange lands right here. If you want reliable information about this glorious country, write STRATHMORE REALTY CO., Strathmore, Tulare Co., Cal., between Lindsay and Porterville. Excursion fares from Los Angeles, Cal.

FOR SALE—PALOMITAS VINEYARD 194 acres; 106 planted to choice Emperor, Malaga and Muscat vines, 3 to 5 years old Part or all. Half cash, balance on easy terms. MRS. M. E. SHERMAN, Fresno, Cal.

ORCHARD HOMES FOR SALE—FIVE acres and upwards; fine citrus and deciduous fruit lands on easy instalments and low interest. Write us today. WYATT & WILSON, Winters, Cal.

I MAKE A SPECIALTY OF ORANGE and alfalfa ranches and exchanges. 826 Main St., Room 9, Riverside, Cal. N. R. BELL.

SEED.

FOR SALE—CALIFORNIA BLACK walnut seed in sack lots. Wanted: Mayette, Franquette and Parisienne Walnut scions, also Rupestris St. George, Rip. x Cord. x Rup. 106-8, Rip. x Rup. 3306 and 3309 cuttings, grafting size. Address FANCHER CREEK NURSERIES, Fresno, Cal.

FOR SALE—SEED FROM SELECTED plants, Burbank's Crimson Winter Rhubarb $1 per quarter pound package, postpaid, $3 per pound. A. E. NELSON, El Monte, Cal.

SEEDS — ORDER YOUR SEEDS through us. Personally selected. All guaranteed. Catalog free. Department "S". COLUMBIA COMMERCIAL COMPANY, 204 East 9th Street, Los Angeles, Cal.

FOR SALE—ORANGE SEED SELECTed from choice groves, can supply any quantity at reasonable prices. K. W. LATTIN, 20 West 4th St., Alhambra, Cal.

HORSES.

FOR SALE—ABOUT 200 HEAD OF work and brood mares, including young mules and horses from one year to four years of age. One full blooded Percheron Stallion four years old in May. One Jack about seven years old. Several full blooded Poll Angus Bulls and a number of full blooded Durhams. CHAS. W. HART, Farmersville, Cal.

FOR EXCHANGE—BELGIAN DRAFT Stallion for Imperial Land. Splendid pedigreed stallion. Record of get, about 80%, 6 years old, weight 2200 lbs. Price $3000. Easily worth $3500. Address F. L., Cultivator Office.

FOR SALE—GOOD RANCH TEAM. weight 1200 lbs. each, cheap. Also a good ranch and hay baling outfit. Address, C. E. GARRETT, Hynes, Cal.

TELEGRAPHY.

MAKE $100.00 MONTHLY—LEARN telegraphy at home. Send for particulars. COLUMBIA COMMERCIAL COMPANY, 204 East 9th St., Los Angeles, Cal.

FERTILIZERS.

NOW IS THE TIME
to fertilize for results in the coming crop.
ARMOUR'S "O.T.M.", "B.B.&P.", and "5-8-2" grow big crops and build up the soil. They have been doing it for years.
THE ARMOUR FERTILIZER WORKS, Los Angeles, Cal.

MACHINERY.

OPPORTUNITIES—A FEW EXCEPTIONAL BARGAINS.
One 25 horse power Olds distillate or gasoline engine. One of the best on the market. Brand new four months ago. You cannot tell it from new now. Cost $450, will sell for $200 cash.
SEPARATOR.
A De Laval Improved No. 12. Capacity 450 pounds per hour. Cost $70 last year. Guaranteed to be in perfect order. $35 cash takes it.
SPRAYING OUTFIT.
A "Pomona" air cooled gas engine sprayer complete with two 20-foot lengths hose, 2 poles with nozzles, etc., ready to use. In use only a short time. A dependable machine in perfect working order. Cost $88. Sell for $40.
These are genuine bargains having been taken for debt and are offered for quick sale. Write or wire, E. C. ROCHEFORT, Pasadena, Cal.

FOR SALE—ELECTRIC MOTORS AND generators, both A. C. and D. C. New and slightly used, various sizes. See us for all kinds of electric machinery. BAILIE & BRANDT CO., Agents Union Gas Engine Co., 943 N. Main St., Los Angeles, Cal.

FOR SALE—RENT OR EXCHANGE, boilers and engines, gas engines, pipe and oil well casing, pumps, all sizes and makes; get our prices before you buy. A. CANNADY & CO., 691 N. Main St., Los Angeles, Cal.

FOR SALE—MEHRING MILKING MAchine with extra parts and covered pail, all in good order. WM. H. BIRD. Box 6. Compton, Cal.

FOR SALE—21 H.P. OTTO GASOLINE engine in fine condition, at a snap. MACHINERY EXCHANGE, N.W. Cor. Main & Bruno Sts., Los Angeles, Cal.

FOR SALE—TWO CENTRIFUGAL pumps. No sound. Standard make. in fine shape. Cheap for cash. 117 Bruno Street, Los Angeles, Cal.

FOR SALE—IN GOOD RUNNING ORder distillate engine, good make, 6 H.P. Will sell cheap. Address P. O. Box 436, Station C, Los Angeles, Cal.

TREES.

FOR SALE—AT VERY LOW PRICES, large palms of the following varieties, Phoenix, Canariensis, Chamrops excelsis, Chamrops humilis, Cocos australis, Cocos plumosus, Seaforthia, Dracena australis, Dracena indivisa, Musa ensete, Ficus elastica, Italian Cypress, Monterey Pine, Pinus canariensis, Camphors. Must be moved at once at about cost. Satsuma and Bartlett fruit trees, also live and cork oaks, very fine and cheap. Catalogue free, mention Cultivator. H. L. BAUER & SONS, 737 S. Spring St., Los Angeles, Cal.

FOR SALE—I HAVE RECEIVED from Ohio 300 Native Sweet Chestnut trees 8 to 12 inches, strong roots. Beautiful for ornamental purposes, and valuable for nuts. Much superior to Italian. Grow well in California. 50c each. 5 for $1.00. Prepaid. H. E. WARD, San Dimas, Cal.

THE SANTIAGO FROSTLESS NURsery still has some extra fine Eureka lemon trees, choice buds, but they are going fast. There are none better. L. F. THURSTON, Proprietor. Sunset Telephone 354 Orange. Address Santa Ana, R. D. 1.

SPECIAL PRICES TO TRADE AND planters on grafted and seedling walnuts, Elberta, Muir, Lovell, Phillip Cling, Leavy Late, Lemon Cling, Satsuma plum, lemons and apples in variety. A. R. MARSHALL'S NURSERIES, Box 64, Santa Ana, Cal.

AVOCADO AND CHERIMOYA PLANTS, from early bearing and prolific stock. Write to JAS. FULLERTON, Orange, Cal.

GRAPE CUTTINGS.

PRICE OF CHOICE GRAPE CUTtings and roots reduced. For Rooted Vines—Thompson Seedless, Flame Tokay, Cornichon, Red Emperor and Rose Peru, $1.50 per 100, $10 per 1,000. For cuttings of the following varieties—Thompson Seedless, Flame Tokay, Cornichon, Rose Peru, Muscat, Mission and Red Emperor, 40c per 100; $2.00 per 1,000. J. C. SMITH, Burbank, Cal.

STRONG OUT DOOR GROWN ROOTED cuttings. All kinds of plants. Send for 1, 2, 3c list. GEM NURSERY, Los Gatos, Cal.

FOR SALE—ROOTED GRAPE VINES, Concord and Agawam, 50c per dozen; $3 per 100. A. E. NELSON, El Monte, Cal.

ARTICHOKES.

FOR SALE — JERUSALEM ARTIchokes, the great winter hog feed. Address, FANCHER CREEK NURSERIES, Fresno, Cal.

HOGS.

REGISTERED BERKSHIRE AND POland China hogs, both sexes. C. A. STOWE, Stockton, Cal.

POULTRY

BARRED ROCKS, RINGLET STRAIN, direct from the famous E. B. Thompson pens, New York. Have taken more prizes than any other Rocks at The Madison Square Garden Shows. For beauty, size and laying quality, unequaled. Eggs per setting $1.50 and up. Reduced rates on incubator lots. Special matings, $3.00 per setting of 15; 2 settings $5. Agent for The Potter System of Selecting the Laying Hen. Price $1.00. A. C. CISSELL, 1812 Santa Monica Ave., Los Angeles, Colegrove car to Swan street.

BUFF ORPINGTONS—BLOOD AND breeding tells. Five years careful selection for points and laying; results, first prize pullets last year and 50 per cent. egg yield during moulting season this year. Eggs, $1.00, $1.50 and $2.00. Special prices on incubator lots. E. G. WALL, 1920 Monticello Ave., Hollywood, Cal. Home phone 59829.

COLUMBIAN WYANDOTTES — WINners of more prizes than any other flock on the coast. Pen No. 1 contains ten females, the male is winner of the first and color special. Eggs $2.50 per fifteen. Will sell the pen at the real value of the male. FRANK J. IRONMONGER, Hollywood, Cal.

SILVER CAMPINES, GREAT LAYers, non-sitters, beautiful fowls, splendid foragers. Recently imported from Belgium. Eggs for hatching $3.50 per doz. Write for circulars. E. SMITH, 3610 East First St., Los Angeles, Cal.

CORNISH FOWLS EXCLUSIVELY—The best for the table and for crossing. Beautiful and docile. Write for prices. Eggs $3.00 a setting. JOHN D. MERCER, 104 West First St., Los Angeles, Cal.

BLUE ANDALUSIANS, NORTHERN strain—Best egg machines for interior of California. Eggs $1.50 and $2.00 per 14; $2.50 and $3.50 per 28. Have bred them 9 years. L. A. WILSON, Winters, Cal.

WHITE MINORCA EGGS FOR HATCHing $5.00 100. After March 15, 200 day old chicks $20.00. March 24, some prize winners. MRS. E. BANTA, Calistoga, Cal.

WHITE WYANDOTTES—EGGS FROM prize winning pen $3.00 per 15; from heavy laying hens $6.00 per 100; $4.00 per 50; $1.50 per 15. J. L. DINWIDDIE, Petaluma, Cal.

WHITE WYANDOTTE EGGS FROM my special bred-to-lay matings, $2.00 for fifteen; $5.00 per fifty. Express paid. A. W. HUSKINS, 713 Waterloo Street, Los Angeles, California.

WHITE ROCKS—SNOW WHITE, prize winning, bred to lay. Eggs $1.50 and $2.00 per sitting. W. E. B. SMITH, 820 Elm Ave., So. Pasadena, Cal. Phone Sunset, Main 2866.

WHITE MINORCAS (EXCLUSIVELY) —large birds, prolific layers, large white eggs, Eggs for hatching at moderate prices. L. V. PETERSON, Guerneville, Cal.

WHITE ROCK EGGS FROM MY PRIZE winners at recent Los Angeles Shows. $1.50 per 13; $3.00 per 30. J. W. WHITNEY, R. F. D. 2, Long Beach, Cal.

CHAS. E. SMITH—BREEDER OF Barred Rocks exclusively. Winners of the blue wherever shown. Eggs $3.00 per 15, stock for sale. GARDENA, Cal.

S. C. BROWN LEGHORN EGGS, $1.50 and $2.50 per 15; $5.00 and $7.00 per 100. Hens thirteen months old $1.50 each. MRS. C. H. VARY, Pomona, Cal.

FOR SALE—MATED HOMER PIGEons, good, strong, healthy stock guaranteed. For prices and particulars address CLYDE W. ROHRER, Box 252, Reedley, Cal.

WHITE PLYMOUTH ROCK STOCK, eggs, baby chicks for sale. Eleven prizes last State Fair. RICHARDSON. 42 Sacramento Ave., Sacramento, Cal.

MAMMOTH BRONZE TURKEYS — Eggs fifty cents each. None in West larger or finer marked. Laid by old hens. MRS. LAURA E. HARDING, Brawley, Cal.

MAMMOTH BRONZE TURKEYS' eggs—fifty cents each. Mrs. Harding's strain. PETER JENSEN, Brawley, Cal.

PRIZE - WINNING WHITE MINORCAS. Eggs for setting, $2 for 15; $3 for 30; $6 per hundred, f.o.b. express. C. S. LANE, Santa Barbara, Cal.

FOR SALE—BABY CHICKS, ALL VArieties, 100 lots upwards. J. STANSFIELD, 3301 East 14th St., Fruitvale, Cal.

BRED TO LAY S. C. WHITE LEGhorns, strong healthy stock. Eggs $5.00 per hundred; $1.00 per 15. D. CLAYTON, Colusa, Cal.

RHODE ISLAND RED EGGS FOR hatching, $1.50 for 13, $7.00 per hundred. CHAS. F. TUTTLE, Phone Main 1294, P. O. Box 320, Altadena, Cal.

TWENTY-FIVE MAMMOTH BRONZE imported Gobblers for sale. Ten months old at $5.00; 18 months old at $7.00. J. R. SNEAD, Dixon, Cal.

HOUDAN EGGS SETTING $2.00; 100, $10.00. Fine thoganized stock. MRS. R. HEGI, Dixon, Cal.

O. L. CRANE, BREEDER OF PIT AND Cornish Indian Games. Rural No. 3, Santa Rosa, Cal.

SOME MISAPPREHENSIONS.

(Continued from Page 361.)

with the inspectors of apiaries increasing their duties, but the California beekeeping public seems willing to increase this line of work in its united effort to restrict and eradicate bee diseases locally costing the honey industry annually in the neighborhood of $250,000.00 to $300,000.00. If an aggressive campaign is to be carried on, all possible sources of infection must be guarded, and the great advantage accruing from a system of complete inspection including queens is being able to locate definitely if possible the sources of constant reinfection and concentrate a united effort upon these sources and so solve the problem the immensity of which relatively speaking few beekeepers realize. We believe that suppositions or possible interpretations of the law are endless and in general lead to nothing and are more of the opinion of Mr. Pryal that the law framed in the best interest of all should pass and if in interpretation it is ineffectual it can then be changed and strengthened to suit the situations that may arise in the future."

MUTUAL INSURANCE.

The California Mutual Live Stock Insurance Association of California, with its home office at Oakland, is the only institution of the kind organized under the laws of the state with its home office in the state.

They insure live stock against death from disease, fire, lightning, tornado, cyclones and every casualty; also through accident which may necessitate the death of any animal.

Losses are paid promptly without discount and without unnecessary delay.

They have a guaranty deposit under the control of the State Treasurer for the protection of their members and policy holders.

There is $100 of values lost to farmers by death of stock, by disease and accident, where $1 is lost by fire.

They have no dividends or profits paid to idle office holders.

The business of the Association is conducted as economically as is consistent with good management, and the earnings are divided among the policy holders.

This is an age of Mutual Insurance, and it is true the cheapest and strongest companies in the United States today are composed of and managed by the policy holders, who are farmers and stockmen, as has been demonstrated in the East and as this company is demonstrating in California.

For further information see their advertisement in this and other issues, or address for circulars, M. L. Wright, President and General Manager, Bacon Building, Oakland, Cal.

POULTRY.

A GOOD INCUBATOR CHEAP—I HAVE a "Petaluma" 300-egg size with all latest improvements. Used but once. Cost $40. Taken for debt. First check for $10 gets it. E. C. ROCHEFORT, Pasadena, Cal.

BUFF ORPINGTON COCKERELS, DIrect from Ross & Tate, $2 to $10. Write E. R. BRISTOL, 209 North Gage St., Los Angeles, Phone Boyle 635.

DAIRY FOR SALE.

FOR SALE OR RENT—WELL ESTABlished dairy and milk route, reason age and sickness. H. A. C. McPHAIL, 212 No. Grand Ave, Los Angeles, or MRS. C. S. LANE, proprietress, East end Ortego St., Santa Barbara.

BERRY PLANTS.

WANTED—LADY THOMPSON, TEXAS, and A-1 strawberry plants, also Loganberry. State number and lowest price. None but first class plants wanted. Address, G. H. HOPKINS & SON, Burbank, Cal.

TURKEYS.

WANTED—TURKEY HENS AND TURkey eggs. 25c per lb. paid for hens if delivered immediately. Address, GEO. L. T. RIVARD Oceanside, Cal.

SHOPPING BY MAIL.

PURCHASE THROUGH US—WE ARE a Mail Order House. We furnish anything desired from a spool of cotton to an automobile. Send for catalog. COLUMBIA COMMERCIAL COMPANY, 204 East 9th St., Los Angeles, Cal.

Have the Time of Your Life

with my Portable Billiard and Pool Tables. Send for Catalog and let me show you good, practical Tables at the price of toys. Used anywhere. No special room required. **C. RIDDERHOF**
Merchants Trust Bldg., Los Angeles

Household Department

THE GOSPEL OF LABOR.

The legend of Felix is ended, the toiling of Felix is done;
The Master has paid him his wages, the goal of his journey is won;
He runs, but he never is idle; a thousand years pass as a day,
In the glad surprise of that paradise where work is sweeter than play.

But I think the King of that country comes out from his tireless host,
And walks in the world of the weary, as if He loved it the most;
For here in the dusty confusion, with eyes that are heavy and dim,
He meets again the laboring men who are looking and longing for Him.

He cancels the curse of Eden, and brings them a blessing instead;
Blessed are they that labor, for Jesus partakes of their bread.
He puts His hand to their burdens, He enters their homes at night,
Who does his best shall have as a guest the Master of life and of light.

And courage will come with His presence, and patience return with His touch,
And manifold sins be forgiven to those who love Him much;
And the cries of envy and anger will change to the songs of cheer,
For the toiling age will forget its rage when the Prince of Peace draws near.

This is the gospel of labor—ring it, ye bells of the kirk—
The Lord of Love came down from above to live with the men who work.
This is the rose that He planted, here in the thorn-cursed soil,
Heaven is blest with perfect rest, but the blessing of Earth is toil.

—Henry Van Dyke.

SHE KNEW A WAY.

"STRELLICK doesn't dare say his soul's his own," said the married man. "That's a fact, too. I understand that his wife made him join the church."

"A good thing for him," commented the man's wife.

"I don't deny it," said the married man, "buf it's pretty tough not to be able to draw a long breath without asking your wife's permission."

"Are you talking about his inhaling cigarette smoke?" asked the man's wife. "If you are, I think it was just as well that she stopped it. You know that you've been feeling a great deal better since you stopped smoking."

"Pooh!" said the married man. "I don't notice a particle of difference. I wasn't feeling badly, anyway."

"You're looking a great deal better."

"Nonsense!" said the married man. "I don't really think that an occasional cigar or pipe hurts a man. It's only when it's carried to excess that it's injurious. I'm thinking seriously of beginning again."

"Of course, as you say, you know best how you feel," said his wife. "You know that I wouldn't wish to deprive you of any comfort or dictate to you in any way."

"I should hope you wouldn't," said the married man. "You'd be rather badly fooled if you did. I'm not Strellick."

"I'm very glad you're not, dear," said his wife. "I should be sorry to have my husband afraid to say his soul was his own. It's your soul, my dear, and it's your own brain and body that you are hurting—and your own heart. You used to tell me that it was my heart, but that was when you were in love with me."

"Who's been telling you that I'm not in love with you now?" asked the man.

His wife smiled sadly. "Well, if you are bound to kill yourself I haven't any right to say anything," she sighed. "But you are looking better, dear, I assure you. You have a better color and your eyes are brighter and your face fuller than they used to be when you were smoking so much."

"What are you talking about?" exclaimed the married man. "I never smoked so much. I was always a moderate smoker. It wasn't because I was feeling any effect from it that I stopped. I just did it to please you. Because I wanted to please you, I said I would try it for a little while. If you had been like Mrs. Strellick and thrown my cigars into the furnace you wouldn't have got me to stop, I promise you that. Honest, how a man can let a woman boss him the way Strellick does is beyond me."

"I think she ought to be ashamed of herself," said the man's wife. "I call it unwomanly. Still, if I had a husband like Mr. Strellick there's no telling. I'm pretty well satisfied with my own, though."

"That's good," said the man in a gratified tone. "I was only thinking of a cigar, say, after dinner or—"

"You know you wouldn't be satisfied to confine yourself to that," said the man's wife.

"Do you mean to say I havn't got any self-control?"

"You know I don't. I know you better than that. If you could keep from smoking at all as long as you have I know you've self-control to smoke one a day, or to keep on without ever smoking. I was telling Mrs. Ritchie the other day that there wasn't any danger of your relapsing; you had too much strength of mind. She was saying that it wouldn't last. She noticed, too, how much better you were looking. She said she believed you grew handsomer all the time. I felt a little bit jealous. It was so nice, though, not to have you all smelly of tobacco and to know that you did it to please me, and that your appetite was so much better, and your nerves. Still, I'm not going to be selfish. If you don't want to please me any longer and would sooner spend your evenings in the basement—"

"Oh, I'm not particular about smoking," said the married man. "It would probably make me sick if I began again, anyhow."—Chicago Daily News

About the House

IN planning the meals, see that one kind of food supplements another. with a heavy meat course, serve a green salad, and one of the lighter desserts—fruit either cooked or uncooked, a delicate pudding or a fruit pie, leaving the hearty soups, the rich puddings, and mince pies for the days when fish or the lighter meat dishes are on the table.

Are you one of the lucky—or perhaps I should say skillful cooks, who never burn a cake or pie, never have anything "stick" to the kettle in which it is cooked? If you are one of these happy persons just skip the following paragraph clipped from an exchange.

When the boiling vegetable has

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Place your surplus money where it will be safe—where it will earn you a handsome interest.

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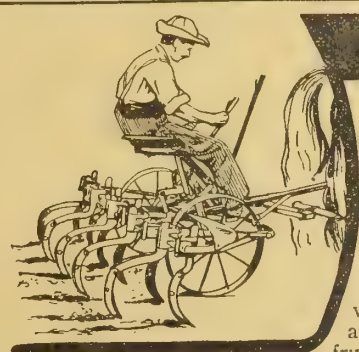

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The Planet Jr. Orchard and Universal Cultivator does more work and does it better than any other implement for the same purpose. Carries attachments which thoroughly cultivate, furrow and hoe at any required depth in orchard, vineyard, or hopyard. Equipped with side-hitch and fruit-tree shield. Can be made into a disc cultivator. Made by a practical farmer and manufacturer, and especially adapted for your work. Thousands of Planet Jr. Cultivators are in successful use in California and other fruit-growing districts.

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Exclusively a Savings Bank whose policy is for ***Conservatism*** and ***Safety,*** the result of ***Fifty-One Years' Experience.***

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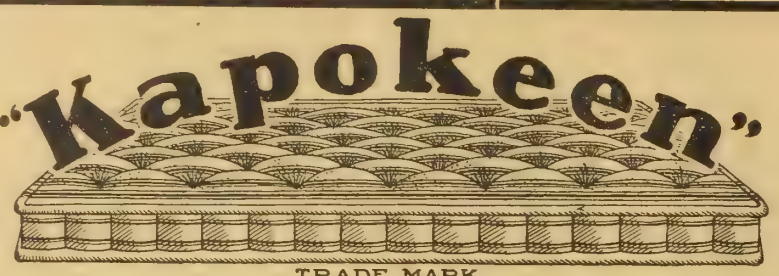

TRADE MARK

The Mattress of Quality

In introducing our Kapokeen Mattress to the readers of The Cultivator, we are taking the first steps toward establishing a National reputation and market for an article, which, on account of its many advantages, has gained a pre-eminent position in its own vicinity.

"Kapokeen" is made from the Kapok or silk floss obtained from the bean of the Eriodendren tree, grown on the island of Java. It is prepared by our own patented process, which removes every particle of seed and preserves in full the resiliency of the natural fibre.

The mattress is made in our own factory where every precaution has been taken to insure absolutely hygienic conditions, by skilled workmen using only the best quality of materials throughout.

NOTE THESE POINTS.

Kapokeen can be "made over" in exactly the same manner as hair.

Kapokeen is sun dried, sun cured, and free from chemicals or other foreign substances.

Kapokeen, no matter how long it has been in use, by being placed for two hours in the sun, will expand and become as resilient as a new mattress.

Price No. 1 Kapokeen Mattress, 4-4 size, 5 1-2 inch box, Imperial edge satin ticking **$15.00**

Three-Quarter Size, $12.50 Single, $10.50

Kapokeen Mattreses are made only by

John Breuner Co

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Remember, the light from Kerosene is the light science has agreed upon as being the purest and best, because it is soft and mellow and restful to the eyes.

Here are a few of The Angle Lamp Merits:

NO UNDER SHADOW. NO SMOKE, NO ODOR, LITTLE HEAT.

GREAT ECONOMY—COST LESS TO BURN than an ordinary lamp. As easy to operate as gas or electricity, and better than either. ABSOLUTELY SAFE under all conditions. Lighted and extinguished like gas. Burned HIGH or LOW like GAS without a trace of odor. And a BRILLIANT, soft, steady, shadowless light—but this you will have to see to appreciate.

The lamp as shown in cut burns 22 hours on 3 quarts of oil.

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Over 49,000 Depositors

4% **Interest on Savings Accounts**

And on Six Month's Certificates of Deposit

3% **On "Special Ordinary" Accounts**

Which accounts MAY BE CHECKED AGAINST without presentation of pass-book. Interest is paid monthly on the minimum monthly balances.

caught, don't try to pry it out of the saucepan and take all the burnt taste with it, but, rather, plunge the outside of the saucepan into cold water a few moments; and when you loosen the vegetables carefully with a spoon the hardened burnt portion will remain in the pan.

When the small cakes in gem pans have done just a moment too long and seem inclined to stick to the pans, try the same plan, only less strenuously. Hold the under sides of these hot little pans against a wet tea towel, and the cakes will loosen at once.

After greasing your cake tins with lard and before pouring in the cake batter dredge the bottom of the tins with flour, shaking out all that does not stick evenly to the lard. Cake batter poured in on this dry flour will rarely stick to the pan after it is baked. Wet the inside of china or tin moulds with white of the egg before pouring in gelatine, cranberry or blanc mange, and the hardened dessert will not stick when you are ready to dislodge it.

To make a quick short cake split hot baking-powder biscuits, and fill with preserves, any kind you like, and serve with cream or a good pudding sauce. If you have no cream and no time to make a sauce, take sweet milk, add sugar and a little vanilla or nutmeg and serve with the short-cake. It is very good.

An old housekeeper says that if scorched milk be poured into an earthen ware bowl and the bowl placed in cold water, the scorched taste will disappear by the time the milk is cold.

Man's ideas for the proper training of daughters were very much the same when this old rhyme was written as they are now:

"I tell thee, wife, we'll have our daughter bred
In bookerie, cookerie, needle, thimble, thread,
To be expert and ready at her prayers,
That God may help her to avoid the Devil's snares.
Let her be taught to shun deluding,
To roast, to toast, to make a pudding,
To knit, to spin, to sew, to make, to mend,
To rub, to scrub, to earn, and not to spend."

—Elbepe.

THE ART OF FOLDING NAPKINS.

The table napkin, or serviette, which is now almost indispensable as a table appointment, was, until the fifteenth century, only used for children; prior to that period the ends of tablecloths served as a sort of napkin. The edges of the tablecloths then nearly reached the floor. It was then considered the correct thing for grown up people to wipe their lips and hands on the long folds of the tablecloths. When napkins were first introduced they were not folded in an artistic manner, as is the case nowadays. For a time the artistic folding of serviettes went out of fashion, but within the past few months the custom has been revived, and it has again become the fashion to place a neatly folded napkin on the cover of each diner.

Ancient books on the subject of table etiquette state that they were first placed over the left shoulder of the diners, so that the ends could be raised to the mouth when needed. Later they were laid across the left arm, and still later, hanging or tying them round the neck, in bib like style, was accepted as the proper position.

The French take the credit of having first introduced the art of folding table napkins. The fashion of folding serviettes for table was adopted in this country. The French people of that early period were rather extravagant in the use of napkins, for, it is said, not only for every meal, but actually with every course the napkins were changed. It was then the custom, in addition to folding them in the most artistic manner, to perfume them with scents, such as rosewater and lavender, or with flowers bearing a pleasant fragrance.

Some exceedingly pretty and ingenious designs have from time to time been introduced, so that folding napkins has long taken rank among the small fine arts. The satin like damask, by means of many folds, turns and twists, can be made into the shape of fans, ships and boats, caps, flowers, birds and fanciful figures of all kinds. Needless to say, it requires both patience and practice to enable one to fold serviettes into such ornamental shapes.

First lay the serviette quite open upon the table, bring down the top

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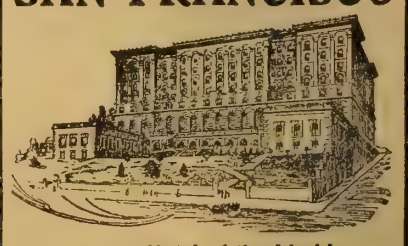

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edge to the center and then do the same with the bottom end, and press down the creases firmly. This must then be turned completely over, care being taken that the two folds are not disarranged. Carry up the bottom edge until it rests upon the top—really folding the whole in half—and a long rectangular figure, consisting of four equal folds of linen, is formed. This must then be plaited from the center to each end. When the plaiting is completed the upper edge of both sides should be vandyked by slipping the first between the two folds and pulling the linen down between the plaits, at the same time pressing the two plaits on each side together. This done, the serviette is a single-plaited "fan," vandyked on both sides, but by carefully separating the two folds at the top by means of both hands, and pulling them gently apart, plait by plait, the "double fan" commences to take shape, and the plaits only require to be pressed together at the lower edge and placed in a wine glass, for the fold to be ready for table.—Food and Cookery, London.

HOUSEKEEPING ON A BUSINESS-LIKE BASIS.

It seems to me quite desirable that housekeeping should be placed upon a businesslike basis. More than half the earnings of the average wage earner are spent for food alone. In spite of this, very few people know how to select their food so as to get the best for the least cost. Years ago the housekeeper planned the spending of money very wisely; but stern necessity had taught her how to do it. Many housekeepers love bargains, and so it comes that sometimes cheap goods are bought. The old proverb that "the best is always the cheapest in the end," is always true. Many women think they are quite businesslike if they save a cent; for instance, if the original cost was one dollar, they think it is a bargain at ninety-eight or ninety-nine cents. Often women will waste time and energy running from one store to another in order to save five cents on the purchasing price. It is the same in food, and women will buy cheap food and then pay large fees for medical attendance. Sickness is not always sent by providence, but is sometimes the direct result of unwise administration of the household affairs.

Every housekeeper should keep an account. Many women do not have five cents they can call their own; while many a man has been ruined by allowing his wife to have full control of the money. I know there is blame on both sides.

Housekeepers should know something of housekeeping before they enter the business of making a home. If you can do your work a little bit better than someone else, that work is always a source of delight to you, and it matters not what the work is. Every young woman who intends to marry should make it her business to master some of the problems of housekeeping.

We cannot all be great singers, or great artists, but if we do our work, even if it be scrubbing floors, better than someone else does it. it is always a source of more or less pleasure, and it is respectable.

This subect is one that is much more important than the general public think.

The getting of the income, man's work, is a subject of a great deal of importance; while the spending of the income, woman's work, receives very little attention. It is true that the man provides the income; also true that the woman spends it. Comfort, ease, and happiness depend as much upon the spending of the money as upon earning it.

To put housekeeping on a business basis we must know the real importance of the subject so that we may respect it.—Mary F. Rausch, Colorado Agricultural College.

IRONING DAY HINTS.

Skilful laundresses know that to iron a starched article when too dry results in breaking the threads of linen, which in a short time makes the frayed edge, or the hole. They also know that hot water dampens the clothes more evenly than cold, and makes the garments more quickly ready for the iron.

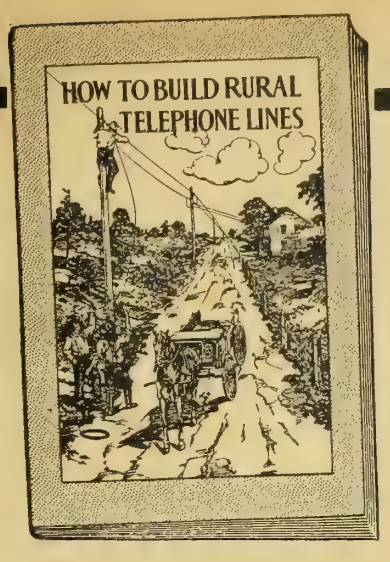
A sprinkler, which is much better than the hand, can be bought at the house-furnishing shops. It consists of a rubber bulb with a rose sprinkler attached—just like those the florist uses for watering the plants in his window.

When ironing stocks for the neck or embroidered linen collars iron them on a thick towel which has been folded three or four times and laid on the board. Stocks ironed in this manner will appear like new, and if you iron the embroidered linen collars on the wrong side on this folded towel the embroidery pattern will stand out in bold relief.

The cloth on the ironing board can be kept clean when not in use, by slipping the board into a cover of muslin or calico, made like a big pillow case with a draw-string.

TO CLEAN VELVET.

Velvet may be cleaned by soaking it for several hours in a covered jar of gasoline. Stir it around frequently with a stick and then rinse in clean gasoline, handling it as little as possible. Hang the velvet in the air to dry.



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If you will cut out this advertisement, write your name and address on the margin and mail it to-day to our nearest house, we will send you at once a copy of our Free Bulletin No. 71 on

"How to Build Rural Telephone Lines"

This Bulletin explains clearly how a rural telephone system is built and operated, and it also contains full information as to costs.

In a Farmer's Mutual Company a few day's labor and a cash investment of about $25. per subscriber, will purchase all material and build an absolutely standard system.

A Rural Telephone is an investment, not an expense. The telephone which enables you to sell ten bales of cotton at ½ cent per pound more than the traveling buyer offers you, has paid for its entire cost. If you have some hay down all ready to go in, it is worth something to have a telephone with which to call on Neighbor Smith "for a lift" before the storm breaks.

The Rural Telephone pays for itself each year and we have brought the initial cost within the reach of every farmer. Present prices are especially favorable and thousands of Farmers' Mutual Companies are now organizing so as to build their lines this Spring. **Write us to-day.**

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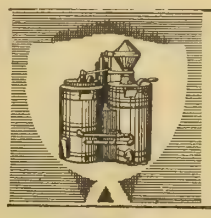

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Write today, how many rooms you have, how large a store, hotel or church you wish to light, and let us tell ***you*** how ***little it costs.***
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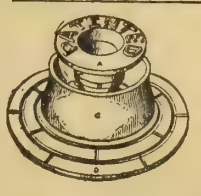

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YOUNG MEN WANTED

We wish to confer immediately with a large number of young men who have a common school education, who are physically fit and whose records are good; only those desiring to enter the railroad telegraph service need apply.

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Hague Domestic Oil Burner Co.
214 Winston St., Los Angeles, Cal.

San Francisco and Los Angeles Produce Markets

Los Angeles Markets

Butter.

LOS ANGELES, March 24, 1909.

Butter has declined 2½ cents during the week and is now at 55 cents for creamery extras.

Produce Exchange wholesale quotations are as follows with actual selling price to the trade 2½c advance on Extras.

Creamery ex per roll	55
Firsts	52½
Eastern Creamery ex	52½
Cooking	25
Butterine"	16@20

Cheese.

Southern California Anchor	17
Northern fresh	17½@18
Anchor, Young America	18
Longhorn	22
Eastern singles	17
Cheddars	17
Swiss	17@18
Imported Swiss	30
Daisy	17½@18
Limburger	21
Oregon triplets	18
Twin	17½

Eggs and Poultry.

The bears had forced the price a little too low and a recovery of one cent is noted this week and local candled now stand at 23.

Eggs local candled	23
Eggs case count buying price	21

Dealers pay for live stock.

Hens per pound	15@16
Young roosters per pound	18@20
Fryers per lb	23
Broilers per lb	26
Roasters	20@22
Old roosters	8
Turkeys	18@23
Geese	15
Ducks	15
Squabs	1.25@1.75

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs from 175 to 200 pounds	6½@6¾
Prime steers	4¾@5
Heifers	4@4½
Calves per pound	5
Sheep ewes per head	3.75@4.00
Lambs per head	3.55
Wethers	4.50@5.00

Potatoes.

Wholesale prices are:

Sweets per ctl	1.75
New per lb	5
Early Rose local	2.50@2.75
Early Rose northern	2.50@2.75
Burbanks local	2.50
Lompocs	2.50
Highland fancy	1.75
Salinas	2.50
Idaho's	1.75@2.00
Oregon Burbanks	2.25
Nevada's and Utah's	1.75@2.00
Colorado's	1.75@2.00

Onions.

Wholesale quotations:

Australian Brown northern	2.00@2.50
Australian Brown local	2.50
Danvers	2.00@2.50
Oregons	2.50
Nevada's	2.75
Utah's	2.50
Red Globe	2.00@2.50
Garlic	10@12

Vegetables.

Artichokes per doz northern	90
Artichokes locals	50@65
Asparagus green	8
Asparagus per lb white	5@8
Beets per sk	1.25
Bell peppers per lb	30@45
Beans string	15@25
Beans Limas per lb	8@10
Brussels sprouts per lb	15
Cabbage per sk	1.00@1.25
Celery per crate	3.25@4.00
Chili per lb	18@25
Chili dried	9@10
Chicory per doz	50
Cucumbers per doz hot house	75@2.50
Cauliflower per crate	3.00@3.50
Carrots per sk	1.25
Green onions per doz bunches	15@25
Horseradish per lb	12
Lettuce per crate	1.50@1.75
Lettuce choice	50@75
Mushrooms per lb	35
Oyster plant	50
Peas per lb	8
Parsley doz	20
Parsnips	35@40
Rhubarb	85@1.00
Rhubarb Northern per box	1.50@2.00
Radishes per doz	15@20
Spinach per doz	20@25
Turnips sack	1.00
Tomatoes crate	1.35@1.50

Citrus Fruits.

Navels fy	1.75@2.00
Navels ch	1.25@1.50
Tangerines halves	1.50@1.60
Grapefruit seedless	3.00
Grapefruit seedlings	2.25
Lemons fy	2.50
Lemons ch	1.00@1.50
Limes half box	1.50@2.00
Kumquats basket	25

Fresh Fruits.

Wholesale prices on the market are:

Baldwins 4 tier	1.35
Bellflowers	1.30@1.35
Newton Pippins	1.25
Red Pearmains	1.25@1.35
W W Pearmains	1.50
Spitzenberg	2.50
Jonathans	1.75
Grapes Red Emperors	1.50@1.75
Guavas per lb	6@8
Guavas	6
Loquats per lb	10@15
Malagas imported per keg	14.00
Pears box	1.75@2.00
Pomegranates per box	1.75
Raspberries	40
Strawberries	8@12½
Strawberries ch	5

Dried Fruits.

Wholesale prices are:

Apricots	8@10
Evap. apples fy per lb	7½@8
Figs loose white	5
Figs blk	5
Peaches in boxes	7@8
Peaches sacks	6@7
Pears	9
Plums pitted	8@9
Nectarines	7½@9
Prunes 30's to 40's boxed	8
Prunes 40's to 50's	7½
Prunes 50's to 60's	7

Beans Dried.

Wholesale prices are:

Limas per ctl	4.50
Pink No. 1	3.35
Lady Washington	5.00
Small White	6.00
Black eyes	3.75@4.00
Garvanzas	4.00
Lentils California	7.00
Lentils German	8.00
Bayou	3.50

Nuts.

Almonds IXL per lb	14@15
Ne Plus Uutra	14
Pecans polished	16@17
Peanuts Virginia	6½@7
Peanuts California	5½@6
Walnuts No 1	11@12
Chestnuts	8@8½

Honey.

Wholesale quotations:

Extracted water white	8
Extracted Light Amber	6½@7
Comb W W	16
Comb white	15
Beeswax	30

Hay.

Prices paid to producers f. o. b. Los Angeles are as follows:

Barley No 1	21.00@23.00
Barley No 2	18.00@20.00
Alfalfa northern per ton	14.00@15.00
Alfalfa local	15.00@18.00
Tame Oat No 1	22.00@24.00
Wheat No 1	18.00@21.00
Wheat No 2	18.00@20.00

Grains.

Wholesale selling price f. o. b., Los Angeles.

Wheat new per ctl	2.00
Kaffir corn	1.80
Corn Eastern sacked	1.75
White oats	1.90
Seed Rye	1.80

Feed Stuff.

Wholesale selling price f. o. b., Los Angeles:

Cracked corn	1.80
Shorts	1.80
Bran	1.65
Oil cake meal	2.50
Feed meal	1.85
Rolled barley	1.55

San Francisco Markets

SAN FRANCISCO, March 23, 1909.

Butter.

Butter held up to last week's quotations till Monday when a decline was secured. Market is firm at present prices.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras per lb	27½
California firsts	26½
California seconds	26

Cheese.

California flats fy	14
Firsts	13
Cal Young American fy	15
Firsts	14
Seconds	11½
Young American Oregon fy	16½
Eastern N. Y. Cheddars fy	17½
Oregon flat fy	15

Eggs and Poultry.

A firm condition prevails and eggs are steady at last week's figures for extras while a slight shading is noted on the lower grades.

Official quotations of the S. F. Wholesale Dairy & Produce Ex. are:

Fresh ranch extras	23
Eggs first per doz	22
Eggs second	20
Eggs thirds	19
Hens per doz	5.00@7.00
Hens extra	7.00@10.00
Young roosters	8.00@9.00
Old roosters	4.50@5.50
Fryers per doz	7.00@8.00
Broilers per doz	5.00@6.50
Geese per pair	2.00@2.50
Goslings per pair	1.75@2.00
Ducks young	6.00@8.00
Live Turkeys	17@19
Dressed Turkeys	18@22
Pigeons young	2.00@3.00

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

Live Stock.

San Francisco prices gross weight:

Steers No 1	5¼@5½
Do second quality	4½@5
No 1 cows and heifers	4@4¼
Second quality	3½
Hogs 100 to 140	6¾
Hogs 140 to 250	7
Rough heavy	4½@5
Calves per lb	4@5½
Lambs yearlings	6½
Milk lambs	7@7½
Wethers No 1	5½@6
Ewes No 1	5@5½

Potatoes.

Wholesale market quotations:

River white fy sacks	1.25@1.50
Early Rose	1.85@2.00
River Burbanks	1.35@1.50
Salinas Burbanks	1.85@1.95
Lompoc Burbank	1.75@1.90
Sweets per crate	1.75
Oregons	1.75@1.85
New potatoes	4@4½

Vegetables.

Wholesale quotations:

Asparagus per lb	5@6
Bell peppers per lb	25
Brussels sprouts per lb	3@5
Cabbage sk	1.50
Cauliflower doz	65@70
Carrots per sk	65@75
Celery per doz	50@60
Cucumbers per doz	1.25@2.00
Chili peppers per lb	20@25
Egg plant per lb	25
Green peas per lb	7@10
Mushrooms per lb	12½@25
Marrowfat squash per ton	20.00@25.00
Squash cream per box	50@65
Onions green per box	65@85
Rhubarb per box for bay	1.25@1.75
Rhubarb, Southern per box	1.00@1.25
String beans	10@12½
Tomatoes box Mexicans	1.25@1.50
Wax Beans	10@12½
Garlic new	9@10

Onions.

Onions Oregons	1.75@1.90
New green per box	25@50

Citrus Fruits.

Navels fy	2.25@2.50
Tangerines per crate	1.00@1.50
Mandarins	75@1.00
Grapefruit seedless	2.00@3.25
Grapefruit seedlings	1.00@2.00
Lemons ch	1.50@2.00
Lemons fy	2.25@3.00
Limes	8.00@9.00
Limes Cal sm box	1.00@1.25

Fresh Fruits.

Bellflowers	85@1.10
Bellflowers No 2	50@90
Spitzenberg	1.25@2.00
Newton Pippins	1.35@1.75
Ben Davis	1.25@1.50
Winter Nellis	1.25@1.50
Other Kinds	75@1.00
Strawberries L. A. per crate	1.50
Pineapples per doz	2.00@4.00

Dried Fruits.

Prunes 4-size basis	2½@3
Santa Clara	3¼@3¾

½c premium for larger sizes

Apricots per lb; Choice 8½; fancy 7@10.	
Peaches—Choice 4; fancy	6½
Apples evap	6@7
Pears	4@8
Figs	2½@4
Nectarines	5@6
Pitted Plums	7@8

RAISINS—1908 crop, f. o. b.: Clusters and Layers, 20-lb bxs—Imperial Clusters, 6-crown, $2; Dehesa Clusters, 5-crown, $1.75; Fancy Clusters, 4-crown, $1.40; London Layers, 3-crown, $1.15; do, 2-crown, $1.05. Seeded, 25-lb bxs—Fancy bulk per lb, 5¼c; Choice bulk, 5c. Loose Muscatels 50-lb bxs—Standard, 4-crown, 4c; do, 3-crown, 3¼c; do, 2-crown, 2¾c; Seedless, 3½c. Seedless Sultanas—Unbleached, 4¼c. Thompson Seedless—Unbleached, 4¾c. Dried Grapes, 2½c.

Nuts.

Walnuts S S No 1	9½
Walnuts No 2	6
No 1 Standard	8½
No 2 Standard	4½@5
Almonds Nonp	11½
Almonds IXL	10½@11
Ne Plus Ultra	9½
Drakes	8½@9
Chestnuts	9½@14
Peanuts Cal	5½@6

Beans Dried.

Limas	3.75@3.85
Pink	2.75
Small white	5.35
Large white	4.35
Black eyes	3.25
Red Kidneys	3.60@3.75
Garvanzas	3.00@3.25
Bayo	3.50
Horse beans	2.00
Cranberry	3.50@3.75

Hops.

Hops 1908 crop	6@8½
Old Crop	1@3½
1909 crop contracted for at	10@12

Honey.

White comb	15½@16
Light Amber	9@10
Exracted W W	7@8
Extracted light amber	5½@6
Beeswax No 1 per lb	28@30
Beeswax No 2 per lb	23@25

Hay.

Scott and Magner say under date of March 20: Arrivals during the past week have amounted to 3931 tons. It is most remarkable that notwithstanding the heavy arrivals during the last two or three weeks, prices upon our market have not only not declined, but have advanced somewhat. The demand has been strong and has readily absorbed everything coming in. Judging from this, and from the active demands upon today's and yesterday's market, it looks as though our market might take still another step in advance, and prices increase still further.

It has been the opinion of the local dealers that our market would not stand anything like the heavy supply that has been coming in without dropping off somewhat, or at least becoming weak, but it is the common impression now, judging from the way in which the demand has kept up that our market will not only maintain its present strength, but will probably advance at least a dolar a ton more in the near future.

There seems to be quite a bit of life in the export trade, and would undoubtdly be much more if the hay could be spared from local consumption. Alfalfa continues selling at high figures, but the season on this is drawing to a close; green feed and the approach of new crops will completely demoralize the alfalfa market in a very short time.

Choice wheat hay per ton	24.00@26.50
No 1 wheat or wheat & oat	21.00@24.00
No 2 wheat or wheat & oat	17.00@20.00
Choice tame oat	23.00@25.00
Other tame oat	20.00@23.00
Wild oat	19.00@23.00
Stock hay	11.50@13.00
Alfalfa	16.00@18.50
Straw per bale	60@80

Grains.

Wheat No 1	1.90@1.95
Barley	1.42½@1.47½
Corn small	1.80@1.85
Oats white	1.85@2.00
Oats gray	1.80@1.90
Rye new crop	1.80@1.85
Corn Egyptain	1.60@1.65
Alfalfa seed, Cal	16@19
Alfalfa seed, Utah	18@19
Mustard yellow	6.00

Feed Stuff.

Bran per ton	29.00@30.00
Feed cornmeal per ton	37.00@38.00
Cracked corn per ton	38.00@39.00
Rolled barley per ton	30.00@31.00
Oil cake meal per ton	38.50@40.00
Cocoanut cake per ton	25.00@26.00
Middlings	33.00@35.00
Shorts	31.00@32.50

Citrus Market

LOS ANGELES, March 24, 1908.

A material betterment of the market conditions of oranges has occurred during the week. This is possibly due to favorable weather conditions, but in part it may be credited to the advertising campaign which is still under way. Eastern grocers are entering into the spirit of the orange movement and are offering oranges alongside of apples at the same price or usually lower than the apples. This novel method of selling oranges aids in attracting attention and undoubtedly the sales are much greater. The feeling is that it will aid in lifting the orange out of the luxury class and place it with the necessities in the eyes of the consumer.

Lemons are fully as good as they have been and only need the stimulus of some hot weather to make a keen demand and give an upward trend to prices.

Shipments.

Shipments of oranges to date this year total 11,563 cars, lemons 1,848; or a total of citrus shipments for the season of 13,411 cars.

NEW YORK, March 22.—Forty-nine cars oranges and six cars lemons sold. Market is active on navels when of good quality. Market is dull on ordinary grade lemons. Weather clear, cool favorable.

NAVELS—	Average.
Cerrito L V W Brown	3.15
Swastika do	2.75
Elephant OG Cash Assn	2.65
Titus Ranch San Marino G P A	2.40
Mountain Lion Speich & Co	2.20
Native Sutherland Ft Co	2.30

Cream Separators, all sizes, all prices. O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

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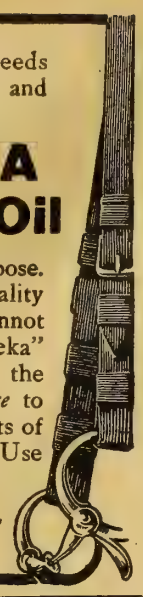

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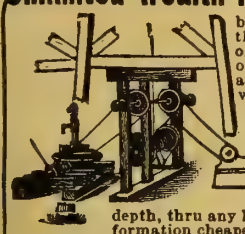

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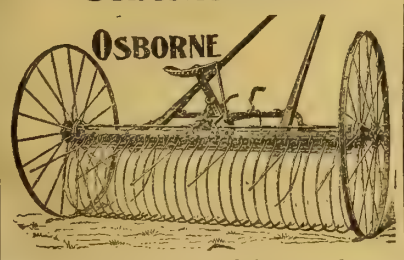

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Golden Orchard Ind Ft Co	2.58
Citrus Belle Ind Ft Co	2.35
Golden Flower Red GO Assn	2.20
State Seal J D Carpenter	2.15
Mountain Lion Speich & Co	2.25
Santa Fe do	2.15
Gabrielle Ind Ft Co	2.15
A-1 E Peycke Co	2.20
Conqueror Ind Ft Co	1.90
Highland Growers' Ft Co	2.00
Orchard National Orange Co	2.95
Standard do	2.55
Lion Head I L Lyon	2.60
Old Mission C C Chapman	2.45
Golden Eagle do	2.00
Euclid Euclid Ft Co	2.25
W Highlands Cleghorn Bros	2.35
Lion Head I L Lyon Sons	2.35
Clover Redlands OG Assn	2.25
Elk Riverside Ft Co	2.20
Flamingo California Cit Union	2.15
Marguerite do	2.20
Gold Buckle RH Ft Ex	2.65
Lochinvar do	2.40
Iris D M Ft Ex	2.55
Alta Cresta AH Ft Ex	2.65
Robusta do	2.40
SEEDLINGS—	
Titus Ranch San Marino G P A	2.10
LEMONS—	
Chess Queen Ely Gilmore	1.85
Bishop do	1.65
Giant Palm Carpenter	1.60
Knight	1.10
Flower	.90
Homer QC Ft Ex	2.20
Camel do	2.00
Sunside Santa Paula C Ft A	1.75
Naralimo Sparr Ft Co	1.65
Circus do	1.65
Senorita do	1.45
Independent Growers' Ft Co	2.50
Rialto Girl do	1.95
TANGERINE—Halves	
Golden Orchard	1.25
Lion Head I L Lyon Sons	1.15
Euclid Euclid Ft Co	1.30
Lion Head I L Lyon Sons	1.15
Violet D M Ft Ex	1.35
La Mesa Riverside Ft Ex	1.35
Bear OK Ft Ex	1.35
Tiger SB Ft Ex	1.25
GRAPEFRUIT—	
Old Mission C C Chapman	2.10

CLEVELAND, March 22.—Weather cool. Market is improving. Six cars sold, ten on track.

NAVELS—	Average.
Orchard Run SA Ft Ex Pomona	2.10
Lochinvar R HFt Ex E Highlands	2.45
Victor SA Ft Ex Claremont	2.00
Carmencita ST Ft Ex Fullerton	2.20
Colombo do	2.10
Swan Riverside Ft Ex Riverside	2.10
LEMONS—	
Gold Buckle RH Ft Ex E High	2.40
Belt do	2.20

CINCINNATI, March 22.—Cool. Market is steady. Five cars navels, two cars lemons and one car Floridas sold. Four cars on track. Florida Brights sold $1.50 to $2.90. Russets, $1.65 to $3.00.

NAVELS—	Average.
Greyhound SA Ft Ex Claremont	2.05
Our Farm ST Ft Ex County Farm	1.70
Standard do	1.60
Ibex ST Ft Ex Rivera	2.10
Rivera do	1.90
Silence Flagler Ft Co	2.20
Cry Baby do	2.10
Golden Flower Red OG Assn	2.30
SEEDLINGS—	
Our Farm ST Ft Ex County Farm	2.00
LEMONS—	
Transcontinental SS Ft Ex El M	1.75
Goldfinch SS Ft Ex El Modena	1.25
Bridal Veil Limoneira Co	2.45
White Cross do	1.95

BOSTON, March 22.—Twenty-nine cars sold, fifty-seven on track. Weather clear and cold. Market is unchanged.

NAVELS—	Average.
Elephant OG Cash Assn	2.70
Orchard National O Co	2.70
Rose Redlands OG Assn	2.40
Champion A C Denman	2.30
W Highland, Cleghorn Bros	2.25
Champion A C Denman	2.15
Standard National O Co	2.10
Clover Redlands OG Assn	2.10
Signal Stewart Ft Co	2.10
Naralimo Sparr Ft Co	2.10
Slover Mtn Or Growers' Ft Co	2.05
Solano Stewart Ft Co	2.00
Anemone Cal Citrus Union	2.00
Cannon Randolph Ft Co	1.90
Monogram California Citrus Union	1.85
Tahoe Redlands OG Assn	1.85
Flamingo California Citrus Union	1.65
Our Beauty La Manda O & L Assn	1.75
El Toro California Citrus Union	1.65
Homer QC Ft Ex Corona	2.15
Butterfly Covina Ft Ex	2.10
Sweetheart A Ft Ex Highgrove	2.20
LEMONS—	
Whittier ST Ft Ex Whittier	2.25
Pico do	1.75
Canna SB Ft Ex Yerkes Spur	2.60
Narlimo Sparr Ft Co	1.85
Topaz California Citrus Union	1.70
El Toro do	1.50

ST. LOUIS, March 22.—Weather favorable. Market is steady. Eleven cars sold, ten cars navels and two cars lemons on track.

NAVELS—	Average.
Our Farm ST Ft Ex County Farm	1.80
State TCC Ft Ex Lindsay	2.15
Lochinvar RH Ft Ex E Highlands	2.45
Belt do	2.20
Volunteer SA Ft Ex N Pomona	2.35
Greyhound do	2.25
Orchard National Or Co	2.45
Standard do	2.30
Circus Sparr Ft Co	2.30
Signal Stewart Ft Co	2.20
Solano do	2.10
S S do	2.10
A-1 E Peycke Co	1.80
SEEDLINGS—	
State TCC Ft Ex Lindsay	1.95
Red and Blue Label do	2.00
LEMONS—	
Coyote OK Ft Ex	1.85
Blue Jay do	1.75
Solano Stewairt Ft Co	2.10
Selected N W Blanchard	2.05

PITTSBURG, March 22.—Twelve cars sold, fifteen on track. The market is strong and higher on navels, weak on lemons. Weather favorable.

NAVELS—	Average.
Orchard National O Co	2.80
Standard do	2.40
Mutual Mutual O Co	2.00
Aurora E Peycke Co	2.35
Deal do	2.30
Truth Riv Ft Ev Riverside	2.35
La Paloma do	2.35
Our Farm ST Ft Ex County Farm	1.95
Standard do	1.95
Fiesta Riv Ft Ex Riverside	2.40
Pond Lily do	2.30
Red & Blue Label TCC Ft Ex	2.25
Full Value TCC Ft Ex Lindsay	2.05
Quail OK Fe Ex	2.20
Ben Hur RH Ft Ex Redlands	2.30

PHILADELPHIA, March 22.—Eighteen carloads of navels, one mixed car, one car seedlings and one car lemons sold. Weather cold. The market is lower, due to the poor stock offered. There are thirteen carloads on track. Seven carloads Floridas sold. Market strong on Floridas.

NAVELS—	Average.
Rialto Girl Growers' Ft Co	2.50
Criterion Penn Ft Co	2.41
Monogram Cal Cit Union	2.36
Anemone Cal Cit Union	2.25
Black Beauty E H Verill	2.23
Clover Red OG Assn	2.19
Victory Cal Cit Union	3.07
El Toro do	1.90
Dixie do	1.65
Whitier ST Ft Ex Whittier	2.04
Airship VC Ft Ex Fillmore	1.98

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Coulson Co., of Petaluma, Cal., who now handle the entire output of Ward's Fireless Brooders, made by the A. P. Ward Brooder Co., of Calistoga, Cal., report a heavy demand for these brooders. One recent telegraph order called for two dozen large sized brooders for Owen River Land & Cattle Co., who have tried them out and find they fill the bill.

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The story of S. W. Coleman of Sedalia, Mo., is an inspiring one for every farmer and dairyman. It shows what one man can do with little capital on a few acres by right methods. Mr. Coleman made a clear profit of $832.50 from seven cows in one year on only ten acres. Think of it, only ten acres and seven cows! That is a profit of $118.93 per cow a year or $83.25 per acre.

This successful dairyman is just as expert at butter making as he is in increasing milk flow. For years he has won first prize on butter at the Missouri State Fair and elsewhere. He uses a United States Cream Separator to get all the butterfat out of his milk and states that it greatly aided him in improving his methods of buttermaking as well as saving him hundreds of dollars in cream he otherwise would have lost. For ten years he used one United States Cream Separator without having to spend a cent for repairs.

The United States Separator will do as much for you. Begin to save now by writing to the Vermont Farm Machine Co., Bellows Falls, Vt., for their Catalogue No. 20 which tells all about the United States Cream Separator. This book is handsomely illustrated, clearly and entertainingly written, and above all, it tells you how to make money.

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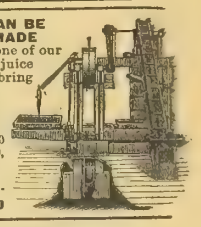

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TERMS. Six months time will be given with note and approved security on sums over $50; 5 per cent discount for cash on time sums. On account of poor health, owner is retiring from the dairy business, closing out his entire herd, and every animal will positively go to the highest bidder.

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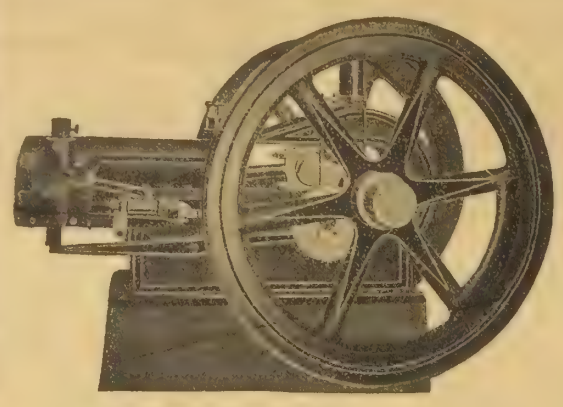

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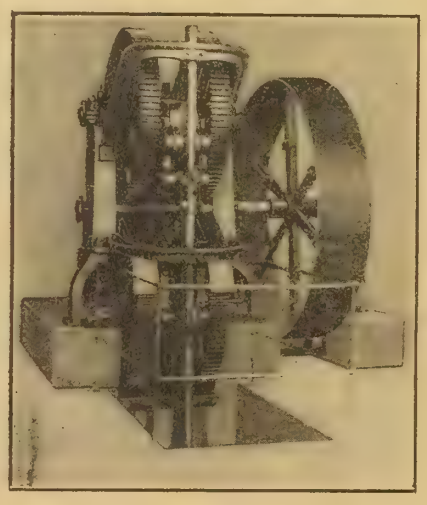

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Used by the best water companies who know what a good pump is.

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POMONA MANUFACTURING CO.
POMONA, CALIFORNIA

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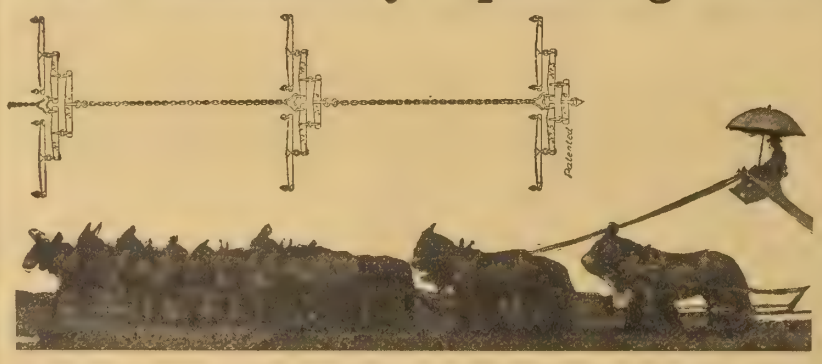

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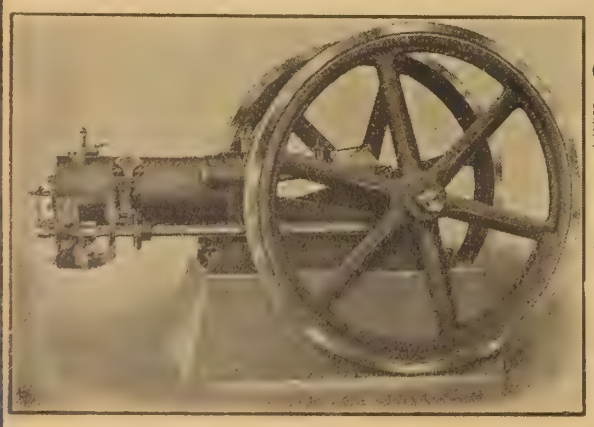

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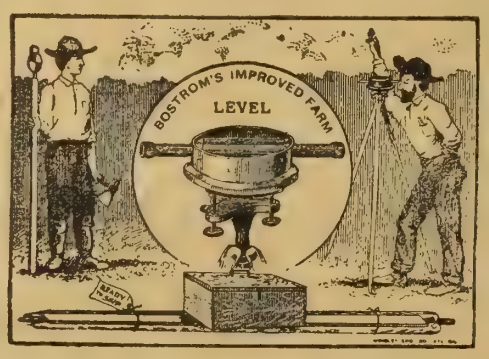

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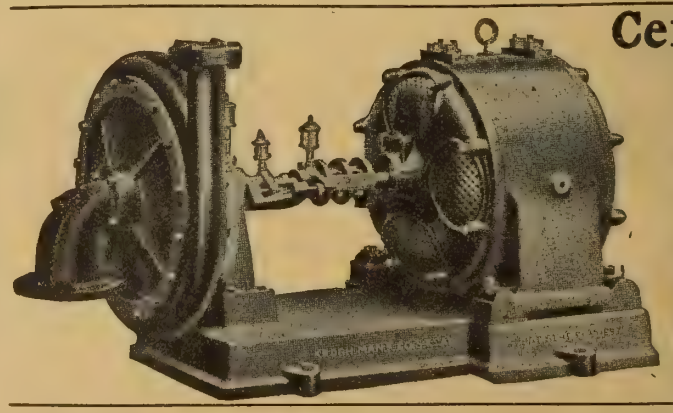

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California Cultivator

Published Weekly — One Dollar a Year

Los Angeles — April 1, 1909 — San Francisco

Irrigation's Transformation of the Desert

Scenes at Calexico in the Imperial Valley

Where once the desert's
Silent King
Did wield his wand of
dearth,
There reigns a rival sover-
eign—
King Water. . . .

Courtesy Calexico Chronicle.

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Mission Valley, Cal., Feb. 1, 1909.
Enclosed find P. O. money order of $1.00 for my subscription for this year. I am well pleased with your paper and wish you all the success that your efforts deserve. I appreciate your plan of indexing the previous numbers. It saves the readers a lot of time and no small amount of annoyance in going over the file. I have filed all my Cultivators for the past year except two that I have either mislead or lost. One of them had a breeding chart that I would like to have, and if not too much trouble for you to print again, I should feel obliged to you for doing so. Respectfully yours, J. T. J.

Santa Barbara, Cal., Feb. 3, 1908.
I again beg leave to ask you to change my paper from 119 E. Ortego street, Santa Barbara, to Lompoc. My subscription was paid in through the Graham Drug Co., at Lompoc. Am sorry to trouble you more but I am required to change, therefore, your paper must follow. Yours very truly, G. O.

San Dimas, Cal., Feb. 16, 1909.
This check pays for Cultivator one year for J. W. S., Charter Oak, Cal. This is the third new subscriber I have sent you within a year. Don't you think you ought to mark my date up about six months. Please change address from Charter Oak to San Dimas, and oblige, Yours truly H. E. W.

Claremont, Cal., Feb. 8, 1909.
Enclosed find check for $1.00 to renew my subscription to the Cultivator. To an amateur farmer or dairyman, or a tenderfoot, it is indispensable. Thanking you for all advice given me in the past, I am going to trouble you again with some questions, which you will find on another sheet. Yours truly, W. P. R.

Stonyford, California.
I enclose money order for the renewal of your paper and also the price of subscription for my neighbor, Mr. F. H. I will say I prize the Cultivator very highly and shall always speak a good word for it to all neighbors wishing a valuable farm journal. G. D. L.

Cupertino, Cal., Feb. 2, 1909.
Cultivator of January 28th to hand, but I did not receive the previous issue. It is the first time I have ever been overlooked. I enjoy your journal too much to miss a number so will you kindly forward me the missing one and oblige, Yours sincerely, C. H. S.

Folsom, California.
Enclosed find postal order for $2.00, which will pay for the past year and the one coming. I consider the paper the best that I have ever read and that is a good many. I would not be without the Cultivator for twice the price. C. W.

Yettem, Cal., Jan. 13, 1909.
Please change the address of the copy of your paper addressed to D. H. T., Laton, Cal., to D. H. T., Yettem, Cal., and oblige. Every farmer needs your paper as your suggestions are good and practical in all branches, of farming. D. H. E.

Watsonville, California.
I am very much pleased with the Cultivator. It is very instructive. I can't do without it. C. T.

Vacaville, Cal., Feb. 7, 1909.
I am enclosing payment for one additional yearly subscription to your paper. I find your paper of great value. Yours very truly, C. R. McB.

Holtville, Cal., Feb. 11, 1909.
Enclosed find check for $1.00 for which please send me the California Cultivator, renewal for the year 1909. A ranchman cannot invest a dollar any where to better advantage than by subscribing for the Cultivator. Yours for success, E. W. B.

Wahtoke, Cal., Feb. 2, 1909.
After reading several copies of your paper sent to one of your subscribers, who also highly recommends the paper, I wish also to become a subscriber and will find herewith $1.00 for one year's subscription, and oblige, Yours truly, T. B. H.

San Martin, California.
Enclosed please find money order for $1.00 for continuance of your valuable paper. Kindly accept thanks for continuing after date of expiration. O. N.

Escondido, Cal., Jan. 4, 1909.
Your collector has not been here this year so I enclose $2.00 for current year and one year ahead from 1908 to 1910. The Cultivator is all right. Very truly yours, C. H. W.

Pomona, Cal. Feb. 6, 1909.
Please find check for $2.00 to settle account and extend. Respectfully, W. T. A.
P. S. A mighty good paper for the orange growers.

Loomis, Cal., Feb. 12, 1909.
Enclosed find money order for four ($4.00) dollars to renew the subscriptions of J. H. N. and R. M. N., two dollars each, to Loomis. We like the paper very much and would miss its visits to our house. Yours truly, R. M. N.

Santa Rosa, Cal., Feb. 3, 1909.
Enclosed find order for two dollars for subscription to your valuable publication. Thanking you for courtesy extended as well as for useful information received, I remain, Yours truly, C. T. M.

Turlock, Cal., Feb. 18, 1909.
Enclosed find $1.00. Please credit us one more year for the Cultivator. You are getting out an excellent farm paper which every farmer should take. Yours for improved methods in farming, E. Bros.

Douglas, Ariz., Feb. 1, 1909.
Can you send me the "Cultivator" for August 27th, 1908? I appreciate the "Cultivator" so much that I do not like to lose a single number. I enclose you 5c. Sincerely yours, H. C.

Kingsburg, Cal., Feb. 5, 1909.
Enclosed please find one dollar in money order for sending me your paper, the California Cultivator for another year. I like your paper very much. It is a good help to a new beginner. Yours truly, O. B.

Sarita, Texas, Feb. 5, 1909.
I failed to receive the January 28th issue of the Cultivator. Will you please send me another copy as I can't afford to miss a single number. Yours truly, J. H. A.

Biggs, Cal., March 14, 1909.
We missed copy of the Cultivator, March 4th. Would like very much to get one of that date, if possible, as we wish to keep them every one. J. & P.

California Cultivator

Vol. XXXII—No. 13 Los Angeles, California, Thursday, April 1, 1909 Subscription $1 a Year

Date Growing in Southern California

A Valuable Product if the Tree Will Make Good and Bear in This State. Palms Now Growing at Several Points in Southern California and Arizona

WHILE at Mecca recently we made a short visit to the experimental date farm. We were not impressed with the manner in which the farm, or garden, whichever it may be called, is cared for. The place had a most unthrifty look, and the palms which were living did not have the appearance of strong, healthy growth. Sure it is, if such culture will grow a profitable date orchard, a thrifty farmer will do well. A gentleman who lived near the place, however, informed us that at the time of the rise of the Salton Sea when it was thought the farm might be inundated, some of the plants were moved to higher ground and that the appropriation for the one farm is now divided and spread over the two places.

The Salton Sea is but little more than a half a mile away.

At the time of the visit, there were only a couple of small bunches of fruit, and neither of those had any seed, owing to the pollen which was used on the blossoms having no life. The fruit was consequently of no value.

The question yet to be solved is, will date culture become a commercial factor in the hotter, drier sections of California. We hope it will, and think the experiment worthy greater effort than is apparently yet made at the Mecca station.

Some points which may have a general interest to our readers are taken from an article written by Prof. Silas C. Mason, Arboriculturist, Plant Life History Investigations, Department of Agriculture and read at the State Fruit Growers' Convention at Riverside last year.

Culture and Management.

In its cultural requirements the date palm is the most unique and interesting, perhaps of any tree yet introduced into this country.

Dioecious in character, except in the case of occasional rare examples, that is, bearing the male and female flowers on separate trees, a miscellaneous plantation of seedlings, would, on the average, contain about half of each, and as the date is wind pollinated, and the pollen impalpably fine and light, the fruiting blossoms would mostly receive pollen and an abundance of fruit be set. As an economic proposition, however, in a plantation of choice varieties, such a number of male trees could not be afforded when a few would furnish all the flowers necessary to pollinate the whole grove if the work is done artificially, so in practice, one male tree is set for every fifty or one hundred fruiting trees. The seedling males differ greatly in the time of flowering, and in the amount of pollen afforded, two flowering for the first time at Mecca this spring, proving entirely sterile, the anthers being merely empty sacks. Other male trees flower so late as to be of no value, for their use upon belated fruiting flowers would only produce clusters of dates too late for ripening.

So it comes about that a male variety affording an abundance of potent pollen at a desirable season is highly valued, and offshoots from it are set instead of taking chances on seedling varieties.

With both male and female sorts, the seasonable application of water has much to do with the earliness of flowering, and a tree has recently come under my notice where irrigation had been neglected earlier in the season that upon receiving an abundance of water later, is just now flowering considerably out of time for the variety.

One important difficulty with the work at Tempe, Mecca and the private enterprises at Heber in the Imperial Valley, is the lack of a sufficient number of early male flowers. Flowering begins in February, and while in theory, last year's pollen should be used in such cases, the practical keeping of it in potent condition seems to have failed in a measure with all of these cultivators.

The tying of a little sprig from a male flower into the whisk-broom-like head of a female flower, as it bursts the sheath, looks like a simple process and is, but on the intelligent doing of this at just the right time and in just the right way depends the entire date crop, and in districts on about the border line of date growing territory, late frosts, cold rains or sweeping winds may considerably interfere with success.

Where failure has resulted, the flowers may drop off early, leaving the nearly naked strings of the spike to tell the story, but in other cases they may hold on and the fruit grow, three dates to the flower instead of but one, sometimes reaching a large size and a beautiful appearance, but lacking the seed and power to ripen.. I have seen more than a hundred pounds of fruit of this character upon a single tree. In twelve or fourteen days after pollination has been accomplished, one of the three ovulos of the flower will start into vigorous growth while the other two will fall behind, later on sometimes appearing as scales at the base of their successful rival. I have but once seen two perfect seeded dates ripened from the same flower.

Pollination successfully accomplished, the growers troubles are not yet over. With young trees whose fruiting stalks are produced near the ground the weight of the rapidly developing fruit, a bunch sometimes weighing from 30 to 40 pounds, soon bends them over, and they must be propped up. As a precaution against birds, squirrels, rats and sometimes the neighbor's boys, not to say the neighbor himself, the bunches are sometimes enclosed in stout screen wire bags, but some predatory "animal" occasionally cuts the stalk and carries away bunch and bag, perhaps the only bunch of that variety yet fruited. It is seldom that the entire crop is menaced, as occurred at Tempe, in the fall of 1906, when hordes of migratory rats invaded the plantation, and it was only by great efforts and after the killing of hundreds of them that a portion of the crop was saved.

Scale Pests.

The presence of a dangerous and destructive scale, the Parlatoria blanchardi, on most of the offshoots imported from the north of Africa necessitates thorough fumigation on their arrival in this country. In spite of all precautions this scale has been introduced both at Tempe and Mecca, probably in the deep crevices beneath the leaf bases, and while thorough cyanide fumigations have kept it well in check, it seems likely that the gasoline flame treatment devised by Prof. Forbes will be necessary for its complete extermination. Fortunately, it spreads but slowly and seems to have no other host.

Another genus of scale, the Phoenicoccus Marlatti, commonly known as the Marlatt scale, has been present upon date trees at both Phoenix and Heber, but as it was confined to the bases of the leaves, seemed to do little damage. Recently, however, Mr. Chumard, at Heber, has found it in such numbers upon the bases of fruit stalks of his Deglet Noor trees as to seriously interfere with the full development of the fruit.

Labor.

The labor of the date orchard is pretty well distributed throughout the seasons. There is no portion of it dependent upon a heavy force of outside labor brought on for a particular period, though the gathering and packing will be the most busy time and the hopeful cultivator will be glad to have employment for considerable extra labor at that period, but his wares are not so perishable as to depend on the work of a day, as with strawberries or cantaloupes. In the distribution of the year's work, date growing will compare well with the labor problem in the apple orchard or grape vineyard.

Adverse Seasons.

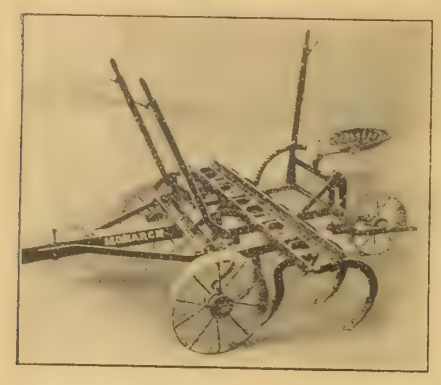
No crop grown is more liable to destruction by untimely rains than the date crop, but the arid character of desert countries is so well established, that these occurrences are rare. During last October the rainfall at the Tempe garden was 2½ inches, a quite unprecedented record. Added to this the rise of the ground water from excessive irrigation of the surrounding fields, and a period of cool nights with heavy dews, and little was lacking to insure the destruction of the crop. Many that ripened, soured instead of curing out, and others started to decay while hard upon the trees. Flies and wasps swarmed in to remind one of the plagues of Egypt. The same conditions with less rain began at Mecca, but before long a drying desert wind set in and the damage was stayed, though an autumn temperature below the normal prevented the ripening of considerable fruit that would have matured in ordinary seasons.

There seems no doubt that the increased humidity due to the proximity of the Salton Sea, only a half mile distant, had a retarding action on the ripening of the fruit.

In the Tempe garden, fruits were ripened in commercial quantities two years ago, though the rats destroyed a considerable part of the crop. Those sold, chiefly of the varieties of Rhars, Tedalla and Birket El Haggi, brought 25 to 40 cents per pound, put up in neat one-pound cartons.

The choice and late Deglet Noor has not yet been successfully ripened at Tempe. Fair specimens of this were secured at Mecca last year in spite of the October rain, and I recently tasted very good Deglet Noor dates from the private plantation at Heber in the Imperial Valley. Several of the new varieties from the M'Zab region of Algeria gave very finely flavored dates in small samples last year. The present season promises to show fruits of many more varieties, and among them several bunches have been pollinated of the rare Menakhor variety secured by Mr. Thos. H. Kearney from Tunis, and of which there are but three or four specimens living in the United States. This superb variety, Mr. Kearney states, is seldom placed on the market, even in Tunis, "being reserved for the tables of the wealthy natives and for gifts to their friends."

OUR MONARCH CULTIVATOR



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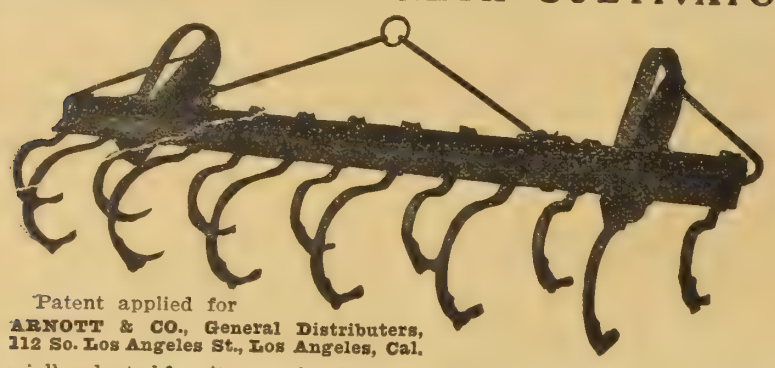

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BACTERIA IN ITS RELATION TO SOIL CULTURE.

IN a course of horticultural discussions under the auspices of the Riverside Y. M. C. A. one evening was given to the subject of bacteria. At this meeting Mr. E. L. Koethen gave an address from which we quote:

"Until within quite recent years agricultural experts and scientists believed that the problem of chemistry in the soil was purely a chemical one, which could be reduced to simple terms of action, and reaction of one chemical upon the others.

Most everyone of you present were so taught in our schools, but there were many obscure problems which chemistry failed to explain. The use of the miscroscope has, however, revealed wonders upon wonders, and we now know that without the flora of the soil—so minute, that hundreds of thousands of the germs may exist in a single bit of soil as large as a pea—we can have no true soil fertility.

The processes of decay of organic matter in the soil are brought about through the agency of innumerable miscroscopic organisms called bacteria, and to some extent, fungoids.

In these days we are familiar with the term bacteria and involuntarily associate it with typhus and tuberculosis, diseases of man, and not without reason, for it is now demonstrated that all contagious diseases, and many that have not heretofore been classed as such, have their origin in microbe life. In fact, by far the majority of species are beneficial to human life, directly or indirectly. They are nature's scavengers par excellence. They have economic value on the farm, in the kitchen, in the laboratory, in the dairy, and creamery.

These infinitesimally small microscopic plants, for they are not "bugs" nor animals, are so vast in number that miracles are accomplished by them.

Their rapidity of bacterial multiplication is almost beyond belief. Twenty minutes to a half an hour suffices under ideal conditions for an individual of some of the rod shaped forms to elongate, and to be divided into two, which in a similar lapse of time becomes four.

The conversion of organic matter to available plant food is quite complex, involving not one set of bacteria but a series of them, each in turn performing its peculiar office, the conversion of unavailable nitrogen being the most important. This element as found in the air, or as in blood, and other organic matter, can not be assimilated by the higher plants. It must first be converted into a 'nitrate,' which is a combination of nitrogen with oxygen and some alkali base as lime or soda.

Some bacteria thrive best in the presence of air, other species best when it is excluded. The air lovers in general tend to make plant food available. The air shunners tend to decompose organic matter, and reduce it to the gaseous form, and thus cause the losses of nitrogen; hence drainage and tillage are important. Both forms may do good service in agriculture, and the latter may cause great losses. For instance, when the air is excluded from the soil for long periods by being kept too wet, there may be a loss of nitrogen through the action of air-shunning bacteria.

Sunlight is usually death to all bacteria. Thus, on our light soils too much stirring may cause the death of large numbers of desirable germs.

As to temperatures, the highest efficiency attained is between 70 degrees and 105 deg. Fahrenheit. This only occurs in hot sands where plant life is practically excluded.

A well balanced moisture supply is essential for the largest development of the desirable soil bacteria.

Land that has been scraped for grading is most likely to be deficient in soil bacteria, and such spots invariably show a deficient tree growth. The remedy is to replace a portion at least of the surface soil and apply an abundance of humus making material, especially barnyard manure, as it is particularly rich in nitrifying germs.

Nitrification proceeds best in a feebly alkali soil. If acid or strongly alkali, the process ceases. As the nitric acid needs a base upon which to act, it is necessary to have lime or other alkali present in the soil. Phosphoric acid and potash are also essential for the best development of the bacteria.

By far the largest number of nitrifiers are found in the first foot in soil, in proportion as air is admitted to the lower strata, and as these are warmed the opportunities for deeper location of nitrifiers is enhanced, hence adequate drainage and tillage tend to promote nitrification.

Litman says: "Humus is decaying organic matter in the soil. It is the seat of all important bacteriological activities for the very reason that it furnishes food and energy to the micro-organisms.' He does not specify at what stage the decaying matter becomes humus, nor do we need to care, for the very first effects of decaying organic matter are important to the agriculturist.

While it is important that nitrogen should be available for plant food, it is equally important that the other elements should be found in the soil in a condition which would be available to the higher plants. Especially is this true of potash and phosphoric acid. They are naturally so locked up as to prevent loss of soil fertility by being carried off in surface waters and through leaching in the soil. Hence again the soil flora plays an important part.

In bringing about the decay of gross organic matter, the bacteria liberate a quantity of carbon dioxide gas, which being a mild acid unites with portions of the inert phosphorous and potash compound, making them available. Our soils being rich in unavailable potash, this is important, and accounts for the fact that many growers have obtained excellent results from the cover crops, without the application of commercial potash in orchards that were previously benefited by its application.

If we are to take the soil analysis for a guide, we must conclude that there is an abundance of this element in our soils in this locality, enough to last us for many years, providing it can be made available. The remedy then is not to buy potash, but to add organic matter in such quantities that

it will not only furnish the nitrification needed, but also the carbon dioxide necessary to dissolve the potash.

Litman quotes a case where the analysis showed 30,000 to 40,000 pounds of potash to be present in the first foot of soil to the acre, and yet it was benefited by the application of 100 to 200 pounds of muriate of potash. Yet the abundant addition of humus material to the soil made the application of potash unnecessary. Frequent stirring also helps the process of converting available mineral matter into the available forms.

The above is also true of phosphate. There is no necessity of applying dangerous acid phosphates to our soils if we can make phosphates available by the addition of organic matter.

This is not all. In the composition of the humus making material, and in the humus itself, in the final product are found mild vegetable acids which all act upon the unavailable plant food, and here again the bacteria have furnished the process by which the acids are liberated. Bone phosphates placed on the cover crops just before plowing come in contact with the decay acid more readily, and are hence subject to more rapid decomposition.

In conclusion, we would say that the question is often asked when our application of fertilizers becomes available. Litman makes these statements: 'From practical experience and from vegetative experiments, it is known that green crops and animal manure usually benefit the crop most in the first year after their application. Also the nitrogen of ammonia salts and liquid manure, or of such compound of dry blood, nitrifies very rapidly.'

In the general discussions which follow this paper the Riverside Press reports as follows:

General Discussion.

Fred Reed led the discussion and the lecturer was asked many questions regarding his views of certain phases of soil biology and fertility touched on in his paper.

As to the time to apply phosphates, James Mills thought the best season was just before the cover crops were put in, as the cover crop would make phosphates available in the spring of the year, when needed by the tree. If he were using bone, he would put it in during July, August or September for the cover crop, bringing it a step nearer the tree; when the crop was turned under it would then become available for the orchard. In his opinion fall was the best time to use phosphates and potash. Mr. Koethen stated that if he thought his place was deficient in phosphoric acid, he would apply it now and not wait until fall.

J. H. Norton, superintendent of the citrus experiment station, was asked many questions concerning the composition of soils and the best condition of moisture for bacterial growth, and by means of the blackboard illustrated the chemistry of denitrification in a very interesting manner.

Owing to the large percentage of lime in the soil of this valley, it seemed to be the consensus of opinion that if any lime were applied cover crops should be used in connection and barnyard manure in abundance. Soils here are poor in humus and hence the grower must be guarded in the use of lime.

It was the opinion of some present that the disking in of cover crops was not advisable, as the portion of the crop that was left to dry on the surface was lost by oxidation and a large percentage of nitrogen was returned to the air.

In a Chicago Exchange we note: "The West prefers navels and the minute these come into market, western dealers drop Florida's. It costs nearly as much to haul Florida oranges to Chicago as to bring California fruit here, and this item is becoming much more expensive for Florida as the producing section moves further south in that state to escape the frost."

The orange growers of southern Texas have formed an organization with about 300 growers as members. Among the first things taken up was a plan for the extermination of the white fly in the state. To accomplish this they will endeavor to have the legislature pass laws ordering the complete destruction of all trees and shrubs which harbor the white fly in the citrus fruit territory of the state.—Florida Produce News.

All About the Orange and Lemon

Is told in our new book on Citrus Culture, embracing every phase of the subject from the seedling plant to the final disposition of the fruit in the Eastern market. The largest and best book on the subject ever printed—60,000 words, 100 illustrations. You will want a copy, which we will send you for the small sum of 25 cents. Remember we are the largest growers of orange and lemon trees in the world.

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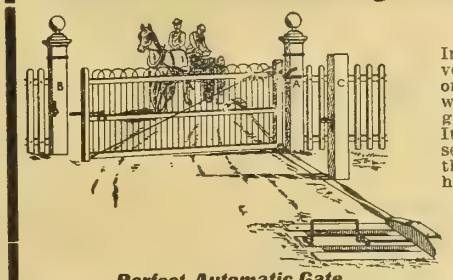

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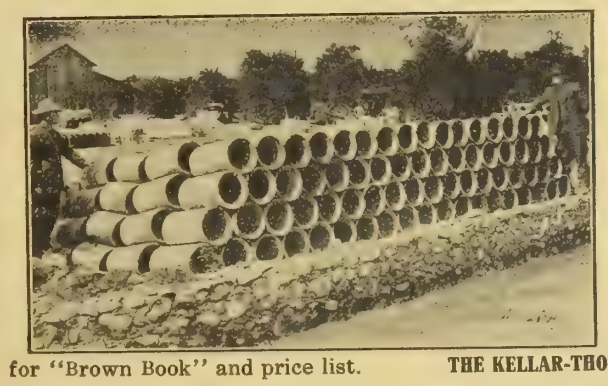

From photograph showing amount of

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made by four men from 10 bbls. of cement in 9 hours — 280 two-foot joints, or 560 feet. This pipe was made with the

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An equal amount can not be made with any other tools in the same period of time. Write for "Brown Book" and price list.

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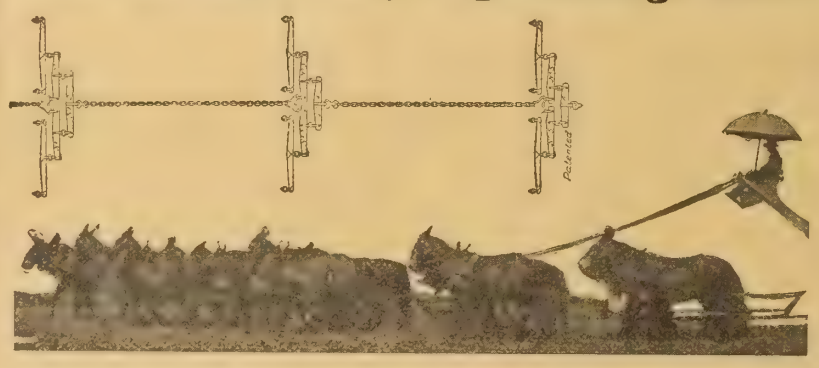

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Peaches 4 to 6 feet, $15.00 per 100; 3 to 4 feet, $13.00 per 100.

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All the Varieties No. 1 Trees

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San Fernando, California

Deciduous Fruit Culture

By J. W. Mills

CROWN GALL OF THE APPLE.

CROWN gall is a term applied to certain warty outgrowths or excrescences upon the apple, pear, peach, raspberry, etc., forming chiefly on the parts below ground. On the apple these growths are more apt to occur on grafted trees at the union of the root and the cion, but they may form at any place where the roots have been injured in transplanting, etc.

Recently, Dr. Erwin F. Smith and his associates in the Bureau of Plant Industry, U. S. Department of Agriculture, have demonstrated quite conclusively that crown gall is caused by a specific bacterial parasite. Moreover they have shown that it is very omnivorous in its tastes, being able to cause warty outgrowths or galls on a surprising number of different and unrelated species of plants when these plants are inoculated with pure cultures of the organism. Galls have been produced in this way upon the following named plants: Peaches, almonds, apples, hops, Paris daisy, walnut, grape, radish, tomato, raspberry, etc.

Not long ago the Maine Experiment Station purchased 60 apple trees from a leading New York nurseryman. The package in which they were shipped bore a tag stating that the orchard from which they came had been officially inspected and found free from disease. Three out of the 60 trees or 5 per cent of the shipment had well developed crown galls upon them. This experience indicates that every orchardist should very carefully inspect all stock. All trees showing evidence of crown gall should be either returned to the shipper or burned, and future orders placed with nurserymen who can and will furnish trees free from disease. Under no condition should trees be planted which show growths of this kind upon the roots, for not only will it result in an unthrifty and unprofitable tree, but it will also infect the soil with the crown gall organism and endanger other plants.—Chas. D. Woods, Director, Maine Ex. Sta.

WALNUT ASSOCIATION.

Regarding the recently formed Walnut Growers' Association and its aims. The Anaheim Gazette gives the following:

The association will incorporate under the law recently passed by the legislature relating to non-profit sharing corporations. This allows any persons or incorporated associations to appoint a selling agent to manage their marketing and is not in conflict with any anti-trust law.

The new association which will likely be known as the "California Walnut Growers' Association," will be composed of one director from each local association and an additional director for each 50 cars which the several associations may have shipped in 1908.

The stock of the associations, which will be without value, will be held by the directors, one share each. The objects of the new association are for co-operative and more economical marketing and carrying on of the business of the various persons or associations for which it will be agent, and to assist in obtaining a true and reasonable value for the walnuts produced by them.

The new association is to have full and complete power to sell all walnuts of the various associations, either through brokers or agents, as may seem advisable, though no change is contemplated in the present method of selling and receiving the money for the walnuts as they are loaded on the cars, but all differences that may arise between the local associations and the brokers will be adjusted by the new association as it will be the party making the contract with the broker. The new association will have its own inspectors and will establish the grade for marketable walnuts which will prevent each broker making a distinct grade for each association, and sometimes for each car.

There will be no cutting of established price as no one but the central association will be allowed to name a price or sell any walnuts. All payments will be made to the central association and the money at once sent to the association from which the walnuts were shipped. There will be no inducement for any association to cut price in order to sell its walnuts, for in case any walnuts should remain unsold at the end of the season they will be carried by all the associations alike, and the orders will be distributed pro rata according to the amount of walnuts each association may have.

A penalty attaches to any association violating its agreement and a provision is made for withdrawing from the new association.

A meeting will be held soon at which it is expected every association, including those just formed, will join the new association, which will then be ready to begin the work of making contracts for handling the crop this year.

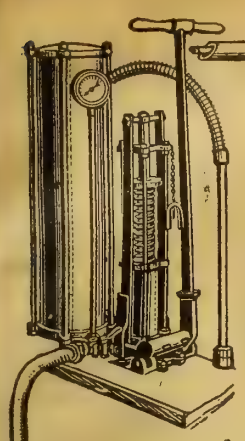
This is the greatest step in advance that the walnut growers have ever taken, as it assures the buyer of a fair margin of profit; assures the broker that no one will name a lower price and demoralize the market; assures the grower that his walnuts will be marketed at the least cost and without danger of prices being beaten down by irresponsible persons, and that he will get a fair share of the price paid by the consumer. It also assures the grower that there will be no over-production, as the new association can advertise and in other ways bring walnuts to the notice of people who are not now buying, and make his groves more valuable.

MORE APPLES NEEDED.

Radical changes are necessary in the culture of apples on this continent or the United States and Canada will be forced in a few years to import apples instead of exporting them. If it had not been for the enormous crops in the orchards of the Pacific and northwestern states and provinces this year an apple famine would have resulted.

Many of the middle western and eastern states reported small yields this season, due to failures in numerous instances, but generally because of pests. Orchards have been neglected and in scores of places the trees have been permitted to die because of the lack of even ordinary attention.

In 1896 the total product of the crop



See That Patent spring ?

It means much to the fruit grower who realizes the need for effective spraying, but deplores the ordinary pump with its exhausting labor, its unsatisfactory spray and its continual clogging and bother. This spring is found only in

Bean Magic Spray Pumps

It would be found in others, but the Bean Patents prevent it. This spring divides the work, permitting the operator to do half the work at each stroke of the handle. And he works against but half the pressure indicated on the gauge. It saves just one-third the labor. Two sizes of Bean Magic pumps; both have Bean patent spring, non-clogging ball valves, and other exclusive features.

Our illustrated catalog No. 21 describes ten sizes of hand pumps, and contains much valuable spray information, and formulas. Catalog No. 22 describes Power Sprayers. Both books sent free. Write for our special offer; state number of acres and kind of fruit.

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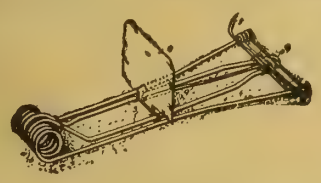

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Because your order gets our personal attention, whether evergreen, or forest, ornamental or fruit tree; whether small fruit, shrub or rose bush, we guarantee it to be grown in Colorado; healthful, well-rooted, true to name. We give premiums to clubmakers. We pay freight on $10 orders. Agents wanted. Send for free catalog today to

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Seeds & Plants

Write for free Catalogue.

Germain Seed & Plant Co.
326 So. Main Street, Los Angeles

of the country was 69,070,000 barrels, or 177,675,000 bushels. Since then hundreds of thousands of acres have been added and yet the government reports show that the aggregate crop in all the states in the Union was not more than 25,000,000 barrels or 62,500,000 bushels in 1908.

There will always be markets for apples. There can never be an overproduction of first class stock. It is in fact impossible at the present time to produce the quantity of good apples requisite to meet the demand. This is evidenced by the fact that England, Germany, France, Denmark, Australia and the Orient are already drawing on the orchards in Washington, Idaho, Oregon and British Columbia.—"Horticulture."

SPRAYING FOR THE CODLING MOTH.

The kind of fruit you grow gives you your reputation. A reputation for good, clean fruit is worth as much as the fruit itself. Maintain such a reputation for yourself and your locality by destroying the codling moth, says Washington Experiment Station.

Spray your trees with arsenate of lead, using one pound to fifty gallons of water. Begin to spray when 80 per cent. of the blossoms have fallen, and have enough outfits on hand to be through in eight days. Use bordeaux nozzles, because they throw a coarse, penetrating spray, and do not use more nozzles than the capacity of your pump will supply and still keep the pressure up. Set the nozzles at an angle of about 45 degrees, either by bending the end of the rod, or by means of an elbow coupling. Throw the spray directly into the throat of each flower. To do this the nozzle will have to be held above the branches most of the time, and the spray rained down. A mist spray or simply throwing a coarse spray into the tree will not fill the lower calyx cup, and that is the only part of the tree that needs the spray. If your trees are taller than you can reach with the rod, build a tower platform from which to spray. Get above the branches and spray down.

To reach the bottom of the calyx cup, much pressure is absolutely necessary. Do not spray at less than 80 pounds, and if possible use 150 to 200 pounds. Stay with a tree until the bottom of every blossom is filled, even though it may seem a great waste of time and material. Select a blossom here and there and cut it in two, to see if your spraying has filled the cup beneath the stamens. If it has not, your spraying is not thorough, and you should spray again immediately. Watch that you do not miss the ends of the branches.

Most worms enter the apple through the bottom of the calyx cup. When this is poisoned there can be no late worms, for the early worms are the parents of the later ones. Just how carefully or how carelessly you do the first spraying will determine the number of wormy apples you you will harvest. Later sprayings are unsatisfactory. They are hard to time correctly, and they save little fruit.—Green's Fruitgrower.

A "cute" little booklet, "a story with a moral," with a few quotations from President Taft, has been received from the Western Electric Co., 463 West St., N. Y. It is worth the postal card required to write for one.

For Mehring Foot-Power Milking Machines see O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles, Cal.

ARSENATE OF LEAD.

The leading insecticide for summer use.

3 pounds arsenate of lead.

50 gallons water, or bordeaux mixture.

Arsenate of lead is in the form of a thick white paste, which dissolves readily in water. It adheres to the foliage for a long time and does not "burn" the leaves. For codling moth also for canker worm, tent caterpillar, and all insects which eat the leaves.

When pruning fruit trees, keep the low head in mind. Trees of this kind suffer less from sun-scald, and the fruit is easier to gather. It is claimed that the fruit will color better, and surely low-heads will stand hard winds better than tall trees.

Why go to the expense of setting out an orchard and then neglect it? That looks like land, time and money wasted. An orchard worth setting out is worth caring for right.

In fertilizing the orchard, remember that the feeding roots extend far out from the trees.

BIG MEN BEHIND A BIG IDEA.

Of course the Kalamazoo Stove Company of Kalamazoo, Michigan, is not the only satisfactory stove company in the country, but it would be hard to find a better—a more progressive—a stove company which has its business more thoroughly in hand—or is more keenly alive to the interests of the user of stoves. The selling plan of the Kalamazoo Stove Company—from-factory-to-user—is world famous and their slogan, "A Kalamazoo Direct to You" has become a household word. Their theory being that you can always buy at less cost from the manufacturer than through the dealer, a theory which their prices prove beyond question. When in addition to the advantage of this low cost price, the freight is prepaid also by the factory—as is done in their case—the combination seems an ideal one for the purchaser.

Their enviable success as makers of stoves that give satisfaction is due in large measure to their Vice-President and General Manager, William Thompson, seconded by the hearty co-operation of the other members of the company. All of Mr. Thompson's time, thought and tireless energy are devoted to the perfecting of stove manufacture. The planning and designing, the buying of raw materials, the manufacturing and finishing processes, the selling plans, great advertising campaigns and even the correspondence are carried on under his personal supervision.

Mr. Thompson is a man of striking personality—of strong convictions—an originator always—never a copier. A man with broad human interests, without foible or pretense—just a plain man of the people, keen in intellect, but with the kindliest heart in the world. A man whom every one of his customers would like to meet and do business with personally if that were possible.

One of the Kalamazoo Stove Company's characteristics is a cheerful confidence in the integrity of human nature. They believe that—other things being equal—a man will generally keep his word—do what he promises to do. During the past few years letters have come to the company's office from time to time asking if Kalamazoo stoves were sold on credit. Heretofore they have been obliged to return the same negative reply to all these inquiries; to their regret and the disappointment of the inquirer.

Beginning with this season the Kalamazoo Stove Company announce that they are ready to handle these inquiries for credit more satisfactorily. From now on charge accounts will be opened on their books with all responsible persons who want to buy a Kalamazoo. The convenience to thousands of this new feature of the Kalamazoo selling plan is instantly recognizable and will tend toward a mammoth increase in the sale of Kalamazoo stoves and ranges.

The company has been working for some time to bring about this change of policy in their business and they seem justified in being optimistic as to results, both for the firm and their customers.

In a recent conversation Mr. Thompson said: "If people have confidence enough in us to take our word for the quality of our stoves then we will have confidence enough to take their word that they will pay for them." And generous terms are therefore made wherever a customer asks for credit.

Catalogs and full explanations of terms—cash or credit—will be sent free upon request to the Kalamazoo Stove Company, Kalamazoo, Mich.

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Hurry Your Order

Get your trees in the ground as soon as possible.

Season Advancing

and the rapidly decreasing stocks make it advisable for you to place your order at once.

Bedrock Prices Now

We have the largest and finest stock on the coast. Our trees are all true to name, strong and thrifty, and are properly prepared for shipping so they reach their destination in perfect condition.

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Arkansas Black, Ben Davis, Gano (Black Ben Davis), Jonathan, White Winter Pearmain, Winesap, Yellow Bellflower.

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Bartlett, Doyenne du Comice and Glou Morceau, the three great commercial pears, 10,000 Imported French Pear seedlings for immediate shipment. Write for prices.

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Special prices on our Royal and Blenheim Apricots uo Myrobolan root and on the following varieties of peaches: Elberta, Lovell, McDevitt, Cling, Muir, Phillips, Runyons Orange and Sellers Orange Clings, Susquehanna, Tuscan Cling and Wheatland.

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We are offering big inducements on all the leading table, raisin and wine grapes. Write for our Surplus List No. 2. We will make it worth your while to figure with us.

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Send us your orders and let us make a selection of roses for you. We will fill your orders with first class plants, our selection, for $1.80 per dozen.

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Wrte for beautifully illustrated Burbank booklet telling all about the great commercial plums, Santa Rosa, Gaviota and Formosa; the striking novelty Rutland Plumcot and the beautiful foliage plum "Vesuvius." Also the great timber and shade trees, Paradox and Royal Walnuts. Price 25c.

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Sweet Potato Plants

All kinds of Sweet Potato Plants in any quantity. $2 per thousand.

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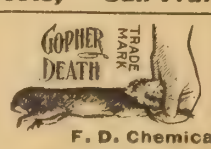

Kills Prairie Dogs and Gophers of all kinds. Endorsed by State Experimental Stations. 1,400 tablets prepaid for $1.25. Warranted. Raticide Tablets 25 cents. Ask druggist or send direct. Booklet free.

F. D. Chemical Co., Fort Dodge, Ia

Brunswig Drug Co., Los Angeles, Agents.

Small Fruits and Vegetables

THIS MONTH.

NEARLY everything in the vegetable garden may be planted this month which has not been planted earlier. Of, course, the usual planting of radishes, lettuce and other green truck which is wanted coming all the time will be made. The spading which should have been done heretofore has put the soil in condition for the finest of seed. Small seeds should be planted very lightly and covered with fine rakings from the corral. Even in frostier sections it should be perfectly safe to plant all the early potatoes. Of course, melons and sweet corn are in order, and those who have been anxious to get the earlier melons have probably had seed planted in cold frames for some time. In very cold sections and where the ground is very cool, melons may possibly be frosted yet. In that case they may be planted in paper boxes to be later transferred to the garden row. Everything should be crowded as fast as possible to get out of the way of the army worms, or cutworms which may come in a month or so later. In fact it is a wise preventive to plant at the edge of the garden so that a deep furrow may be laid around it to prevent the army worms from marching in on the garden. If such a furrow is laid in very dry soil, it will crumble to a certain extent after drying, and with the perpendicular side toward the garden is a very good preventive from the attacks of this pest. The manner of mixing poisons for these worms will be given in this department later.

POTATO DISEASES.

IN a leaflet issued by the Arizona Experiment Station the diseases affecting potatoes were enumerated and remedies given as follows:

Potato Scab.

Potatoes are grown to a considerable extent in Arizona and are subject to several diseases. The "scab" is found only on the tubers, which become roughened and shrunken and cracked in the diseased areas. The fungus is spread almost entirely by means of diseased tubers used for seed.

Remedy.

It can be entirely prevented by soaking the tubers to be used for planting in a solution of formalin, one-half pint to 15 gallons of water, for two hours. Then cut and plant as usual.

Early Blight.

This disease is very destructive in practically every country in which potatoes are grown. It destroys the leaves and sometimes the stems but not the tubers. It appears at first as brownish dead spots over the leaves, especially near the margins. The leaves finally become quite brown, curl up, and become dry and brittle, and the plants have the appearance of premature death.

Remedy.

Spraying with Bordeaux mixture is a successful preventive. Plants already attacked cannot be saved but the disease will be held in check by spraying. Where the disease is prevalent spray first when the plants are six or eight inches high and repeat every two weeks during the entire growth of the plants. Where the disease appear for the first time spray the whole field at once, and repeat at intervals of two weeks.

Rosette, Black-leg, or Little Potatoes.

This variously named disease does serious injury to potatoes in Arizona. In some states it is the chief disease of potato crop failure. It attacks the tubers, and also girdles the stem just at or beneath the surface of the ground causing a conspicuous blackening of this region. There is at first an abnormally vigorous development of tops and the formation of small tubers above ground at the base of the plant or even in the axils of the leaves. Then the whole plant weakens and dies prematurely.

Remedy.

As the disease is mainly below ground spraying is useless. The trouble usually starts with diseased seed, so the remedy is to use only healthy tubers for seed. If the seed is from fields where the disease exists it should be treated with formalin as for scab. All old diseased parts must be carefully collected and burned. Occasionally a soil becomes impregnated with the fungus and then there is nothing to do but cease growing potatoes on it for a time.

Dry Rot of Tubers.

This wide-spread potato trouble is very prevalent in Arizona, and frequently causes a loss of a large proportion of stored potatoes. While causing some injury to the growing plant the chief loss is the rotting of the tubers after they are harvested. At first the tubers appear quite sound, no external indication of the disease being present. If, however, the tuber is cut across at the stem end there are seen distinct black areas in the shape of streaks through the flesh or in the form of a ring. This blackening of the tissues slowly spreads until finally the whole of the interior of the tuber is affected. The first external indication is a shrinking and drying up of the stem end. This continues until the entire tuber is a shrivelled hardened mass.

Remedy.

As the fungus is confined to the underground parts spraying the plants is of no service nor can the tubers be treated as the fungus is internal. The disease is first introduced into a soil by means of diseased tubers so that the most important precaution is to avoid the introduction of the trouble by using only seed free from the disease. If the seed tubers are not perfectly sound they should be cut at the stem end and examined for the black areas. Diseased tubers if thrown out will infect the soil, so they should be burned, and on no account thrown on manure piles, or fed to stock. Unless the soil is badly infected clean seed will give healthy tubers, but diseased seed invariably results in diseased tubers.

Remember that the farm machinery manufacturer made the following statement: "If the farmer cared for his machinery as he should, there would be a need for us to manufacture but one machine where we are now putting out two."

233 BUSHELS MORE PER ACRE

HURST POTATO SPRAYERS

That's what the New York Experiment Station reports as a 10 year average **Gain by Spraying Potatoes.** Don't let blight, scab, rot and bugs cut your crop in **Half**—but get a **HURST Sprayer** and make **Big** money out of your **POTATOES** or fruit. These sprayers **SPRAY ANYTHING**—potatoes, orchards, vineyards, truck, etc. "Man-Power and Horse-Power." Powerful pressure. Easy on man and horse. Strong and durable. **Brass** valves, plunger, strainer, etc. **Guaranteed for 5 Years,** and

Shipped on Free Trial

without-a-cent in-advance. No bank deposit—"no strings" to our trial offer. Spray **First,** then if you buy—pay us out of the **Extra Profit. Wholesale Prices. We pay Freight.** Write us a letter or card and tell us which machine you are interested in—and you'll get free our valuable Spraying Guide and Catalog, and our **Free Sprayer Offer** to **First** in each locality this season. **Be First** to write and save money.

H. L. HURST MFG. CO.,
88 North St., Canton, O

Berry Plants

Buy direct from the farm. Strawberries, Black and Red Raspberries, Giant Himalaya Blackberry, Burbank's Phenomenal Berry, Mammoth Blackberry, Logan Berry and Dewberries; also Burbank's Crimson Winter Rhubarb.

Our catalogue is free and tells you how to grow berries of all kinds. Address

G. H. Hopkins & Son
Burbank, California

EUCALYPTUS

Balled in moss and leaf mould. Need less water and can be planted later. Uniform size and being balled have fine roots. Fine to grow. Boxes of 100, sample lot, in flats and protected tops, only $1.60. Try them and you will use no other. Write for circular and special prices on large lots.

HENRY SHAW

320 River St., - - - Santa Cruz, Cal.

Pacific Seed Co.
C. Bagnall, Prop.
GROWERS AND IMPORTERS OF
Grass, Vegetable and Flower Seeds
All Kinds of Bulbs and Onion Sets
609 J St., Sacramento, Cal.
Send for Catalogue. Please mention Cultivator.

Harris Seed Co.
The San Diego Seed House
High Grade Farm, Garden and Flower Seeds
Our New Catalogue is ready for mailing. A postal card with your address will bring it.
1632 H St. - San Diego, Cal.

PREPAID

Raspberries, Surprise, Superlative, Kansas Blackcap, 75c doz.
Blackberries, Mammoth and Rathburn, 75c doz.
Phenomenal Berry, London Red, Golden Queen, 75c doz.
Cuthbert, Gardena and Lucretia Dewberry, Logan, 50c doz.
Asparagus Roots, Barrs, Palmetto, Columbia, 1 yr., 30c doz.
Walnuts, Fruit Trees, Flowers.
Pioneer Nursery, Monrovia, Cal.

When writing advertisers, mention Cultivator.

The Ornamental Garden

THIS MONTH.

THE ground is warming so that practically all ornamentals may be planted. The queen of fall months, the Crysanthemum, should be put in during the month. Carnations will do their best planted at this time. Summer flowering bulbs, like the gladiolus should be planted soon, though some of the bulbs may be saved until the later planting, where one wishes continuous bloom from these bulbs. Most of the annuals may be planted, as zenias, balsam, snapdragon, and in fact all others, so as to be at their best during the hot months, as may cannas, elephant ear, dahlias, coleus, montbrettia, tuberoses and salvia.

In trees, it is rather late for any deciduous ornamentals, but evergreens like the orange, lemon, lime, and loquat should be gotten in the ground as soon as possible. The ground is now warming up and these trees will take root quickly and be ready for the warm summer months.

Give the lawn a good heavy dressing of either thoroughly rotted manure or best commercial fertilizer, which has a large percentage of phosphoric acid. The best way to have a good lawn is to give it plenty of fertilizer for the grass roots. It is also an excellent month for starting a new lawn.

MAKING A GARDEN.

A woman's experience given in Country Life in America has an inspiration in it. It applies more particularly to Eastern conditions, but nuggets which will pass current in California may be picked up from it.

"The fences were of rough, unpainted boards. Thirty yards away was a white-brown building containing a woodshed and quarters for the horse; but no horse was there. The only living spots upon the landscape were a rooster and half a dozen dejected hens. It was not even a place for selfrespecting chickens to live in, for the yard was paved with stone."

"Don't you know that there is not enough earth in this place to make a mud pie?" asked the skeptical Man of the House.

"I will make earth," said the wife.

It was nearly winter, when one day a neat load of sod arrived, followed by another and another. The sod lay in a heap, untouched, and when the cold weather set in the servant used the sod pile as a sink, upon which all the refuse from the house, except ashes, was thrown.

Everybody for blocks around soon knew that a flour barrel in good condition was worth ten cents at this back door, and by the end of March thirty barrels were stowed in the tenantless stable.

A hotbed was contructed in early April, the storm windows from the house being used for sash, and after the earth had heated the seeds were planted and the garden begun. The hotbed soon contained a tiny jungle of growing plants, and with the aid of an "odd job" man the foundation of the garden was commenced. The fence was buttressed with great boxes, 24 inches deep and 36 inches across, arranged like two facing L's, the narrow space between the upper extremities. The thirty barrels were converted into sixty half barrels and arranged about the yard. Meanwhile, a pile of sand, another of "black muck," or mold, and a third of granite boulders were dumped in the yard.

Neihboring ash heaps were levied upon and the barrels and boxes filled within twelve inches of their tops. Then with a spade and garden fork the sod heap was attacked.

The grass roots were quite decayed and powdered easily. The man sifted it through his fork and threw the lumps away, and then mixed sand and decayed sod, using equal parts of each, with which the boxes and barrels were filled. Then the granite rocks were erected in the center of the yard into something resembling an Egyptian pyramid, and the interstices filled with the prepared soil.

Man is Convinced.

By this time the emulation of the man of the house was aroused, and he employed a carpenter to build a flower-bed twelve feet long by four in width and eighteen inches deep. It was constructed of two-inch plank and stood upon stout, short legs, the bottom being water lined, while at the sides stood a barrel upon a scaffold, arranged so that the bottom was three inches above the surface of the bed. Tiling was laid in the bottom of the bed and covered with small stones and broken crockery. Then the bed was filled with earth.

Trailing Vines.

Toward the first of May the work was completed, and then from hanging pots which ornamented every window were cut slips of the trailing vines called Creeping Charlie, Wandering Jew and Kenilworth ivy. Each slip consisted of a stalk about two inches long with two leaves at the top and two at the bottom, and they were set about four inches apart along the edges of the boxes and barrels, with the lower leaves under ground.

Here and there along the inner edge of the boxes were planted scarlet runners, with threads arranged for them to run on.

The last of May the boxes and barrels were filled with young plants from the hotbed, and from the sunny windows in the basement were added quantities of Madeira vine that had been growing there in house boxes and which were set to climb where no scarlet runners had been planted. The following week the house plants and hanging pots were brought out and placed in advantageous places, and then the desert began to bloom.

The man of the house filled his barrels twice a week with a mixture of guano and water, and after allowing it to become "ripe" turned a tap and allowed the water to run down into the tiling, from which it soaked up into the earth, and after the earth was thoroughly soaked, another tap connected with the tiling was turned, and the water run out into a great tub.

This was practical irrigation and the superflous water was used for manuring the plants in the boxes and barrels.

Rioting Color.

The result was a luxuriance of color and foliage such as no one in the vicinity had ever seen. Balsams of the variety that grow to twelve or eighteen inches were four feet high, stocks were over two inches in diameter and other flowers were propor-

(Continued on Page 394.)

New Crop Seed

Plant Good Seed
Reap Good Crops

We carry everything in good new

Grass
Field
Vegetable **SEEDS**

Don't fail to plant
our celebrated
Big Leaf Jersey Kale
for your poultry.
10c per oz.

Send for Booklet

Hickey & Vonsen
P.O.Box C, Petaluma, Cal.

SEEDS

Of Superior Quality

A large assortment of choice Garden, Flower, Tree and Palm Seeds.

Roses, Carnations
and other Flowering Plants.

Fruit Trees
and Berry Plants, all the leading sorts.

Eucalyptus
Seed and Trees.
Ornamental Trees and Shrubs.
Catalogue mailed free upon application.

Theodore Payne
SEEDSMAN and NURSERYMAN
345 So. Main Street
Los Angeles, Cal.

The Seed House
OF THE
Great Southwest

Just received, one carload of **Eastern-grown Seed Corn,** and our **Colorado-grown Cantaloupe seed.** We have three strains, the **Eden Gem, Netted Rock,** and **Solid Net.** All of these have been tried, and proved more satisfactory than any other strains of the **Rocky Ford.** Dealers and Associations are requested to write for special prices.

Our carload of **Corn** consists of the several varieties best suited to the different sections of the Southwest. See page 112 of our catalog for description, and write for prices on large quantities.

Aggeler & Musser Seed Co.
113-115 No. Main St., Los Angeles, Cal.

300,000 Eucalyptus

Fruit Trees
Shade Trees
Roses Shrubs
Palms Ferns

And everything that you need for your ranch or garden. Send for free catalogue

Sycamore Grove Nurseries
SAINT & WARNER
4584 Pasadena Ave. Los Angeles

Edison Phonographs, Victors, Zonophones
Records and Supplies, $10.00 orders delivered at your nearest railroad station upon receipt of full retail price. Write for catalog.
Peter Bacigalupi & Sons, 941 Market St. San Francisco

What a Few of Our Advertisers Say

Read what our advertisers say as to the value of the CULTIVATOR as an advertising medium:

Fresno, Cal., Feb. 4, 1909.

Cultivator Publishing Company,
733 Merchants Exchange Bldg.,
San Francisco, California.

Gentlemen:—Replying to your favor of the 3rd with reference to your paper as an advertising medium, beg to say that we find same one of the best papers in the horticultural field for this purpose. We have given you an advertisement for several seasons, in fact ever since we have been in business, and results obtained have been very satisfactory.

In placing our Fall advertising the Cultivator is the first paper on our list. Our system of keying our ads has demonstrated that your paper furnishes us with a very large patronage during the season, and we are pleased in every way with the paper you publish.

Yours truly,
(Signed) THE FRESNO NURSERIES.
C. A. Chambers, Secretary and Manager.

San Francisco, Cal., Feb. 4, 1909.

California Cultivator,
733 Merchants Exchange Bldg.,
San Francisco, California.

Gentlemen:—My client, the Paraffine Paint Company, has used space in the California Cultivator for a good many years; in fact ever since I investigated your circulation in 1902 and found your statement to be correct and your circulation well distributed through the prosperous farming sections of California.

Mr. E. G. Judah, the Los Angeles representative for the Paraffine Paint Company, has repeatedly informed me that the results from your publication have been very satisfactory.

Yours very truly,
(Signed) EDGAR M. SWASEY.

Petaluma, Cal., Feb. 4, 1909.

California Cultivator,
733 Merchants Exchange Bldg.,
San Francisco, California.

Gentlemen:—It gives us pleasure to say that we have been advertiseing in the California Cultivator since we started in business and have found it to be, without doubt, the best medium for reaching the class of people whom we desire, of all papers on the Coast. Our continued use of the Cultivator indicates our idea of its value as an advertising medium.

Yours very truly,
(Signed) COULSON POULTRY & STOCK FOOD CO.,
Sherman C. Leonard, Secretary.

California Cultivator, Los Angeles, Cal., Feb. 24, 1909.
Los Angeles, California.

Gentlemen:—Replying to yours of February 12th, we wish to say that we are very much pleased with the results we have obtained from advertising in the Cultivator. We get a great many inquiries, and in a large number of cases they prove to be live ones, to whom we eventually make sales.

It is our intention to continue our advertising with you.

Yours very truly,
(Signed) WESTERN GAS ENGINE COMPANY,
Per W. H. Thompson, Secretary.

Santa Cruz. Cal,, Feb. 4, 1909.

California Cultivator,
733 Merchants Exchange Bldg.,
San Francisco, California.

Gentlemen:—I am delighted with my advertisement in the Cultivator. The inquiries give me no rest, and postage on the replies costs more than the advertisement itself.

Yours truly,
(Signed) HENRY SHAW.

California Cultivator, Fresno, Cal., Feb. 4, 1909.
733 Merchants Exchange Bldg.,
San Francisco, California.

Gentlemen:—Enclosed please find check to cover amount of our account to date.

We have advertised in a good many mediums this season, and find that the greatest number of answers and inquiries come from the readers of the California Cultivator.

Yours very truly,
(Signed) S. W. MARSHALL & SON.

California Cultivator Company, Santa Ana, Cal., Feb. 17, 1909.
Los Angeles, California.

Gentlemen:—I am pleased to say that my advertising in the Cultivator brings good results. In most letters I receive from outside, I find "saw your ad. in the Cultivator" and I try to do the rest.

Thanking you for your generous treatment, I remain,

Yours truly,
(Signed) GEO. B. WARNER,

California Cultivator, Dixon, Cal., Feb. 22, 1909.
Los Angeles, California.

Gents:—Enclosed find $1.35 for advertisement one month. Am well pleased with result of my first advertisement. It pays to advertise in the Cultivator.

Yours respectfully,
(Signed) J. R. SNEAD.

California Cultivator, Pasadena, Cal., Feb. 16, 1909.
Los Angeles, California.

Gentlemen:—Permit me to say my advertising with the Cultivator has paid me better in proportion to amount invested, than any other medium I ever used. This may be due to either of many causes—it is important at this time to say my advertisement is now being carried by over 100 papers in the U. S.

Yours respectfully,
(Signed) J. B. WAGNER.

Portland, Oregon, Feb. 24, 1909.

Cultivator Publishing Company,
115½ No. Broadway,
Los Angeles, California.

Gentlemen:—We take pleasure in stating that we have advertised with you continuously for over five years and have felt perfectly satisfied with the results. We are constantly receiving letters from all over the Pacific Coast in which reference is made to our advertisement in the "Cultivator."

We consider the Cultivator one of the best of weekly papers on the Pacific Coast for advertising purposes.

Wishing you continued success and increase in your circulation, and with kindest regards, we are,

Yours very truly,
(Signed) NATIONAL WOOD PIPE CO.,
By Walter Carnes, Secretary.

Los Angeles, Cal., Feb. 13, 1909.

The Cultivator Publishing Company,
115½ No. Broadway,
City.

Gentlemen:—Acknowledging your letter of February 12th, asking us as to results received from advertising in the California Cultivator, wish to say that we are more than satisfied.

We have now been using the Cultivator steadily for about two years and we have received more returns and more inquiries than from all other papers combined. We believe that you are publishing a first class up-to-date paper and the inquiries received by us show that your circulation is distributed through this Southwestern country.

Truly yours,
(Signed) ARNOTT & COMPANY, INC.
Willard Arnott, President.

San Fernando, Cal., Feb. 16, 1909.

Cultivator Publishing Company,
115½ No. Broadway,

Gentlemen:—As this is our first year's business, and doing quite a little advertising in other papers and we find the great amount of inquiries and buyers come through the Cultivator, as they take a delight in mentioning, "I saw your advertisement in the Cultivator," and I want to thank the Advertising Manager for he said it would bring better results than any other paper in Southern California, and it has been very satisfactory to us,

I am, yours very truly,
(Signed) SAN FERNANDO NURSERY COMPANY,
By W. J. Mann, Secretary and Manager.

Ontario, Cal., Feb. 20, 1909.

California Cultivator,
Los Angeles, California.

Gentlemen:—We have been too busy lately to even change our ad. The rush of mail order business has been simply immense. We have been using advertising space in your valuable paper each planting season for several years and, therefore, must give the Cultivator due credit for helping us build up our business to what it is today, which is now SECOND TO NONE in Southern California.

Wishing you continued success we are yours very truly,
(Signed) ARMSTRONG NURSERIES,
By J. S. A.

Anaheim, Cal., Feb. 10, 1909.

The California Cultivator,
Los Angeles, California.

Gentlemen:—Enclosed please find check of $2.00 for enclosed bill. I think this will cover all my bill. Please discontinue my advertisement as I have sold all my stock. That little advertisement has done good for me, and am well pleased with the investment, and anyone who is interested in farming and the progress of it, ought not to be without the California Cultivator.

Yours very truly,
(Signed) ADOLPH RIMPAU.

Sunnyvale, Cal., Feb. 5, 1909.

The California Cultivator,
733 Merchants Exchange Bldg.,
San Francisco, California.

Gentlemen:—We wish to state that we find the California Cultivator one of the best mediums that we use. We have obtained splendid results from your paper.

Wishing you all the success and prosperity of the season, we are,

Yours truly,
(Signed) JUBILEE INCUBATOR COMPANY,
Per A. W. Bessey

Santa Cruz, Cal., Feb. 6, 1909.

California Cultivator,
733 Merchants Exchange Bldg.,
San Francisco, California.

Gentlemen:—I find that the California Cultivator pays me better than any other paper on trees and berry plants. 1,216 letters in December and January.

Yours truly,
(Signed) A. MITTING.

Covina, Cal., Feb. 19, 1909.

California Cultivator,
Los Angeles, California.

Gentlemen:—We are very much pleased with the returns received from advertising in the Cultivator. Scarcely a mail arrives that does not bring us inquiries referring to our advertisement in the Cultivator. We do business with a fair percentage of all who write us.

Yours very truly,
(Signed) THE KELLAR THOMASON MFG. CO.,
Per Elmer Thomason.

Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

By Mrs. Minna E. Sherman

SILAGE FOR PIGS.

AFTER the way spoken of last week of rotating the land to crops that the pigs harvest for themselves, a few further questions have come in to be answered. The crops of alfalfa are sown once in six years and each pig lot is sown in turn, one new one each year. This, of course, means that land that is moderately moist or can be irrigated is used. There are often high spots that are too dry for any of these crops which are made productive when sown to rye. The pigs harvested it and it sows itself for several years without our doing more to it than giving it a good harrowing each fall.

Alfalfa Hay.

Alfalfa hay when cut for the pigs must have the leaves on it. The mower should start to go when the first simmer of bloom shows, if not a few days sooner. I like to have to pick the buds open on the blossoms when the mower begins to sing its song of pleasure as it wantonly cuts off the alfalfa head. This alfalfa hay should be raked at once and cured in the cock and then hauled in at once when it is dry, not let stand in the cocks to blanch out. This the pigs will eat up clean, every straw of it. There is no need to grind or chop it for them. Suppose, however, the alfalfa hay is not perfect, but mixed with foxtail and weeds. We put the young pigs in the same lot with heifers from six months old to eighteen and they eat this kind of hay up clean. Foxtail hay should be fed from the ground and it does not often then get into the eyes of the cattle. If enough is put out in the afternoon each day from the barns to leave the worse on the ground until the next morning, the dews will dampen the foxtail and make it soft enough to be eaten readily. The seeds of foxtail are full of nutriment and when the cruel barbs are softened the stock rather relish the flavor.

Silo.

There is a place for everything, and everything should have its place. The silo is the place for the first cutting of alfalfa every time. The foxtail makes alfalfa silage of great value for horses and cattle and pigs, and it gives good results in feeding to all three classes of stock. In making silage of alfalfa it is necessary to cut it into three or four inch lengths to encourage the packing and it must be made wet, very wet, to make it pack closely and heat up quickly. The fact is, as nearly as I can find out, every time the silo fails to make good all that is claimed for it, in California, that the amount of water is insufficient. We have a dry climate in the summer time. Though this winter makes one wonder if it will ever stop raining, still June will soon be here and it will be dry and warm again. The crops are not water filled and the absence of dews renders them still more dry. We forget this when we make silage. The first alfalfa silage I ever made came out black and dry. I knew, then, it needed water to make it moister, and ever since we crowd on the water, putting a full head of water running on the alfalfa as it passes into the elevator, so that a constant drip of water falls under the elevator all the time. I have never gotten it too wet yet. This silage comes out tender and a faded green and it sweet smelling; the stock eat it up clean. The pigs are very fond of it and eat alfalfa silage more readily than they do the corn silage.

Filling the Silo.

In Fresno you have, no doubt, heard it is sometimes a trifle warm in summer. Well, this warm time is when we are making silage and we do not know if that is the reason or not, but the silage will get too hot here if we fill a large silo straight full at once. When ten feet is in the silo the men that are filling are put on other work until the mass has heated up to as hot as it can and the temperature begins to fall again; when it reaches at a foot from the top, 120 degrees, we fill in another ten feet and stop again. This will make a good silage out of corn or anything we put in. While it is not so absolutely necessary with corn, it is necessary to observe this rule closely with alfalfa and oats and peas. Bean straw, too, will overheat readily.

Alfalfa Meals.

These have proven disappointing to the pig feeders as they are costly, and the results are not as good as when we feed the alfalfa as hay or as silage. Sometime ago, I was asked why a farmer could not make alfalfa meal. The only reason I know is that it seems to be quite a process of drying the hay almost to dessication, then grinding it and sacking it up. The dryer the alfalfa is the better for this purpose and of course the loss of leaves in handling has been greater and more stems are ground than a regular proportion of alfalfa hay. This results in a higher per cent of fibre in the meal and a reduction in the digestible availability of the food elements. In California, except for chicken feeding it is not worth while to make alfalfa hay into meal. The old cow and the old pig are the best mills and the cheapest. You may remember the old man that boiled all the foods his pigs ate, when asked why? He said to save the pigs time in eating. His questioner, then asked him, "What was a pigs time worth any way?" So say we. What better use can Mr. Pig put his day's work to, than in chewing up afalfa hay.

Alfalfa.

We have been sowing some of the new alfalfa as Dr. Shaw has kindly sent us seed. The men are greatly interested in this work and those that are getting ready to go to the mountain to cut lumber, are asking the others to be sure to remember how these new plants grow. The first of the barley planting is in head and the machine is cutting it to give the cows a nip as the meadows are still too wet to pasture. The bermuda pasture affords the cows scant picking. The winter has given too much rain,

DE LAVAL SEPARATORS Make The Best Butter

The one purpose of every thinking buyer of a cream separator is the making of the most and the best cream possible, whether for home buttermaking, creamery patronage or any other use to which cream is put.

It is possible to "claim" almost everything for the various makes of cream separators, but the one indisputable fact that would-be competitors do not even attempt to get around is the unquestionable superiority of the DE LAVAL machines in the making of the best butter.

Year after year, dating back to the invention of the "ALPHA-DISC" system of DE LAVAL bowl construction, butter made by users of DE LAVAL machines has scored highest and won all higher awards in every large and thoroughly representative butter contest throughout the world.

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1896 Cedar Rapids, Iowa, Thos. Milton, St. Paul, Minn. Score 97.82
1897 Owatonna, Minn., H. N. Miller, Randall, Iowa....Score 98.5
1898 Topeka, Kan, Sam'l Haugdahl, New Sweden, Minn. Score 98.
1899 Sioux Falls, S. Dak., A. W. McCall, Creston, Iowai Score 97.
1900 Lincoln, Neb., H. T. Sondergaard, Litchfield, Minn. Score 98.
1901 St. Paul, Minn., E. O. Quenvold, Owatonna, Minn. Score 97.
1902 E. L. Duxbury, Green Bay, Wis.....Score 98.5
1904 St. Louis, Mo., L. S. Taylor, Glenville, Minn.....Score 98.5
1906 Chicago, Ill., A. Carlson, Rush City, Minn.....Score 97.
1907 Chicago, Ill., A. Lindblad, North Branch, Minn....Score 97.5
1908 J. C. Post, Hector, Minn.....Score 98.
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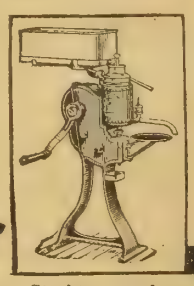

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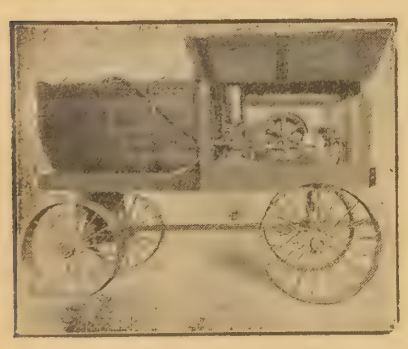

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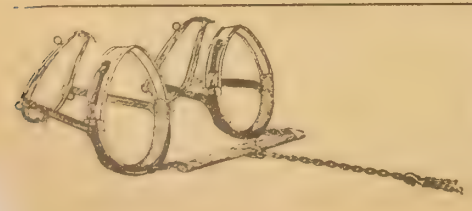

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GRUBBY CATTLE.

From January to June most cattle, especially those which are kept largely on the open range, suffer from grubs under the skin. These grubs are the large maggots of the ox bot fly, which is a common pest in Europe and America.

The injury is not large in each individual case, usually, but taking the sum total throughout the country is estimated by the United States Department of Agriculture at $30,000,000 each year. The loss is to be attributed to several sources. In beef animals, the hides which bear holes made by the grubs are discounted at the tanneries at about a dollar each. The places where the grubs are lodged between the hide and the meat are shot with blood and pus and must be trimmed away. In dairy cattle, the annoyance and pain caused by the grubs and flies entail a loss of from ten to twenty per cent in the productivity of the animals.

The life history of the insect must be understood in order to treat the trouble intelligently. In the spring and early summer, the flies appear. These are about half an inch long and appear somewhat like a honey bee. The body is black and covered with yellowish-white hairs on the fore part and reddish-brown on the hind part. The flies lay their eggs on the heels, legs and flanks of the cattle. The cattle are terrified by the presence of the flies and are frequently stampeded by them. It is a curious fact that the flies will not go over water to reach the cattle. Often the latter spend a large part of the warm hours of the day standing in water or on small islands or rocks in runing streams to avoid the flies.

After the eggs are laid, they find their way into the mouths of the cattle when these lick the hairs to which the eggs are attached. The saliva of the cattle appears to release the little grubs, which attach themselves to the walls of the throat. Here they bore through the walls and slowly make their way through the flesh of the animal, until in about six months or more they find themselves under the hide. They then make a small hole through the hide through which

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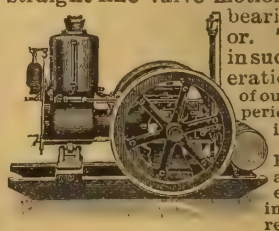

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they are able to breathe more freely and, consequently, their growth from this time forward is much more rapid.

When the grub has reached its full size, it makes its way out through the opening, drops to the ground, and goes through the resting stage before it appears as the adult fly.

Bearing these facts in mind we can readily see that the pest may be attacked at two places in its life history. If we can prevent the laying of eggs or kill the grubs, we can reduce the injuries.

The grubs under the skin may be killed in several ways. One common method is to rub down the lumps on the hide with a round stick, such as a broom handle, thus killing the grubs where they lie. Oil or lard may be applied to the holes in the hide, which will stop the breathing pores of the grub and kill it. If a little carbolic acid is put in the lard, it will help the wound to heal more quickly. By pinching on either side of the lumps, the grubs will often be forced out. They should be killed by the foot if they drop to the ground. The holes may then be treated with carbolized lard. This method is to be preferred, for it does not leave the grub under the hide to fester.

Dairy cattle and those kept in close range may be largely protected from the egg laying by spraying or smearing vile smelling oil or grease on their legs and flanks. Train oil and fish oil are often used for this purpose. Any vile smelling stuff will answer, for the benefit lies in keeping the flies away from the animals. The applications should be kept up during the spring and early summer.—S. Arthur Johnson, Colorado Agricultural College.

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A very common trouble in the ordinary dairy is to find an animal with the point of the teat closed, either due to a bruise of the teat itself or to infection of the milk duct which causes a little scab to form over the point of the teat and unless this is properly handled with care and cleanliness, the infection is apt to cause a loss of the entire quarter.

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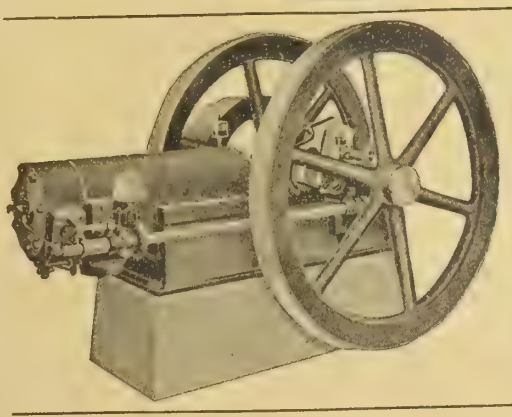

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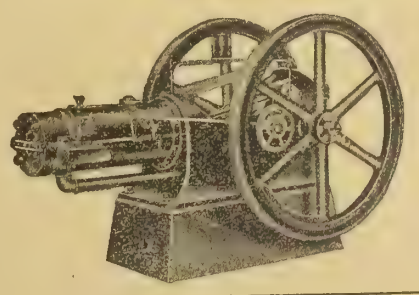

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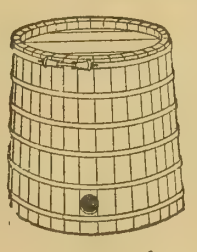

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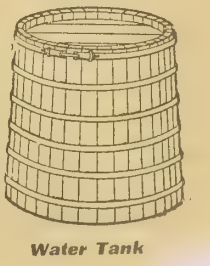

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Contents

IRRIGATION'S TRANSFORMATION OF THE DESERT, Cover.

DATE CULTURE IN SOUTHERN CALIFORNIA, 371.

WITH THE CITRUS GROWERS.—Bacteria in its Relations to Soil Culture, 372, 373.

DECIDUOUS FRUIT CULTURE.—Crown Gall of the Apple; Walnut Association; Spraying for the Coddling Moth, 374, 375.

SMALL FRUITS AND VEGETABLES.—This Month; Potato Diseases, 376.

ORNAMENTAL GARDEN.—This Month; Making a Garden, 377.

LIVE STOCK AND DAIRY.—Silage for Pigs; Grubby Cattle; Stoppage at the Point of Teat, 379, 380, 381.

EDITORIAL.—Arabian Alfalfa; Land Fakes; Arbor Day; The Next Train; A Winner; Keep out the Pests; Put Them on Farms, 382.

AGRICULTURAL NOTES OF THE PACIFIC COAST.—Northern, Central, Southern, the Coast, 383.

POULTRY.—Chicken Chat; Thirteen Tens; A Few Facts About Feeding; Whitewash for Poultry House; Sex of Geese; Preserving Eggs in Water Glass; Notes of the Poultry Yard; Scaly Leg; Potatoes for Fowls; Skim Milk for Hens, 384, 385, 386, 387, 388.

GENERAL AGRICULTURE.—How to Blast Boulders; Chinook Mind, 389.

QUERIES.—Leaking Milk; Japanese Iris Inflamed Udder; Irrigation; Oregon—Washington; Canaries Eating Eggs, 390.

VETERINARY.—Swelling on Ankle; Sore Shoulders; Heifer Shy of Milk; Discharge, 391.

BEES.—Troubles of a Bee Inspector; Apiculture at the University, 392.

IRRIGATION.—In the High Sierra, 393.

HOUSEHOLD.—One Prayer; Bachelor and Baby; About the Home; Why Women Have Nerves; Green Tea; Change is Rest; Beef Tongue; Why Troubles are so Called, 395, 396, 397.

PRODUCE MARKET.—Los Angeles Markets; San Francisco Markets; Citrus Markets, 398, 399.

ARABIAN ALFALFA.

When in the Imperial Valley recently we saw at Holtville, samples of growth made by Arabian alfalfa. Also Professor Shaw's division of the demonstration train exhibited growth of this alfalfa alongside of the common or Chilian alfalfa, showing more than twice the growth in new introduction. It has been but a short time since the Government has imported the seed of this new alfalfa and has distributed it to a few growers. We believe it was first planted at the Pomona Experiment Station in 1903, though not attracting attention until the last year or two. The largest piece of which we know is one at Holtville, which belongs to Washington Wilson. This piece is seven and one-half acres and the seed was supplied to Mr. Wilson on condition that a like amount be grown by him and returned to the Department. As yet this planting has not demonstrated any disposition to bloom, but after one or two more cuttings this spring Mr. Wilson intends to let it stand in the hopes of securing a good crop of seed.

Another planter at Thermal has one acre, only planted this last fall. It is growing well with a promise of a good cutting soon. One characteristic of this new plant in addition to being a rank grower, is that while its stems are somewhat larger than the ordinary alfalfa, they are hollow and do not contain so much fibre as does the common alfalfa. Cows eat it more closely and show by the milk flow the wonderful producing power the plant has. Mrs. Wilson of Holtville, remarked particularly on this quality, saying that their cow when changed from the Arabian hay to that of the common Chilian, the cow showed a remarkable shrinkage in quantity; also demonstrated plainly that the hay was not as much to her liking as the Arabian.

If this promise of greater worth and bigger crops is made good after more extensive experience, the wise dairymen will make effort to secure a seeding of this valuable plant. It is unfortunate, however, that the seed is not to be had in any quantity at this time, it is probable that another fall will show a great increase in this seed, as every farmer who has a quantity of it planted should be willing to seed his plants and extend the acreage of this valuable plant.

LAND FAKES.

The frequency with which Easterners coming into California are swindled out of their good money by some so-called real estate agent or "locator" of fine Government land, calls attention to the fact that more publicity should be given to this style of swindling. That might seem a hard term to use in some cases, but it is no more than it deserves. Sub-divisions have been made in Antelope valley and town lots sold in a desert section which have no values whatever; other lands of fertility, but where absolutely no water can be secured for it, has been used as a bait for buyers by the agent who would "for a consideration," put the tourist next. This land which may be of value in itself is so located as to be of absolutely no value to the homeseeker. We note in the Imperial Standard along the same line the following warning:

"For a year or more there has been but very little land open to original filing which has any tangible prospect for getting water. Despite this fact, unscrupulous persons have recently "located" homeseekers on tens of thousands of acres of land for which there is no assurance of water, charging a fee for their services. There is an abundance of good land in the valley having water present or in early prospect, to be had for reasonable prices, but the person who pays another for "locating" him on government land in this valley must understand that the prospect is that he will lose his money and fritter away his time. In particular, the homeseeker is warned against several land sharks in Los Angeles who make a specialty of 'locating' claimants."

The fee for this "locating" ranges from $10 up, and of itself is not so serious, but loss of time and of railroad fare is often illy borne by the unfortunate.

ARBOR DAY.

We have received from Edward Hyatt, state superintendent of public instruction, a copy of Arbor Day Manual which contains full information of the meaning of arbor day to the young people of California. It is filled with illustrations and is well worth being in the hands of everyone who is interested in this custom of planting a tree. There are many pages of sentiment similar to the following: "What earnest worker with hand and brain, for the benefit of his fellow men, could desire a more pleasing recognition of his usefulness than the monument of a tree, ever growing, ever blooming and ever bearing wholesome fruit?"—Irving.

THE NEXT TRIP.

No dates have been given as yet as to when the next demonstration train will make its tour, but probably it will be not far from the middle of April. The road to be covered will lie largely in Los Angeles, Orange and Ventura Counties; the first stop will probably be Los Angeles, with Norwalk, Downey, Whittier, Buena Park, Anaheim, Santa Ana, Westminster, Smeltzer, Los Alamitos, Compton, Long Beach, Burbank, San Fernando, Santa Paula, Santicoy, Mantalvo, Oxnard, Moorpark, Ventura, Carpenteria, Santa Barbara, Goleta, Guadalupe, San Luis Obispo and other towns to be touched on a two weeks' trip.

A WINNER.

It is not often that the Cultivator calls attention to its merits as a newspaper or advertising medium, but we can not refrain from noticing the testimonials of pleased advertisers who have given the paper a fair trial during the past year. The list could be indefinitely enlarged if space permitted. On another page will be found a few of the many letters received in nearly every mail from subscribers, and mainly from the northern part of the state.

The growth of the paper during the past few years has been marvelous. When the present manager first purchased an interest in the paper it was struggling along in "red ink," with about nine thousand circulation, an inadequate advertising rate and was practically an unknown factor in the state. During the past two years its circulation has largely increased, its advertising rates doubled and the business of the paper more than doubled in every line. It is one of the very few publications in the country and probably the only one in the state that did more actual cash business in 1908 (panic year) than in 1907.

It is the largest farm paper on the Coast, and the dollar a year price makes it the popular weekly of the state. While it is the largest and cheapest paper in the state, its editorial contributors are the best and highest priced to be obtained. It is constantly seeking original articles from the very best writers along the different lines of cultural development for California and Coast conditions.

During the coming year other valuable features are to be added and more and more expended to keep the paper in the front rank. Suggestions for its betterment will be welcomed from any source and we ask for the paper a friendly recognition of the efforts made for its advancement.

KEEP OUT THE PESTS.

The action of Horticultural Commissioner Jeffrey, in quarantining a carload of cotton seed shipped into the Imperial Valley from Texas, is commendable, and in fact one of the steps necessary. If California is to protect herself against the introduction of innumerable other pests, and if cotton growing is to be made a business of any importance in Imperial Valley and Arizona, every effort should be made to keep out the weevil which has been so destructive in nearly all the southern states. The car received in question was put in charge of County Horticultural Commissioner, W. E. Wilsey of El Centro, and the shipment was given a very thorough fumigation with hydrocyanic acid gas.

It is essential that those living in the Imperial Valley should join with the commissioner in this effort to keep out the pest, and to that end the only safe course is to be sure that the county commissioner is informed of every shipment which is made, in this way, with thorough fumigation before the seed is released from quarantine they should be successful. We are not informed as to whether the Arizona farmers are as vigilant. They should be.

PUT THEM ON FARMS.

Holland has a plan by which able-bodied paupers are made to earn an honest living. There is a tract of public land, containing 5000 acres, which is divided into six model farms, and to one of these is sent the poor person applying for public relief. If he voluntarily serves till he learns agriculture he is allowed to rent a small farm for himself and be what is called a free farmer. Every pauper who is thus reclaimed to honest regular industry is so much gain to the state. There is also a forced labor colony, where beggars and vagrants are sent and made to do farm and other work whether they like it or not.

We see no reason why California may not work out a similar plan and teach criminals and paupers the blessing of honest and independent labor. Too much of our treatment of criminals and paupers leads to more criminality and pauperism. Let us teach agriculture, or some trade, and common honesty to the paupers.

There was a belief common for many years that boys, like wheat, must be well thrashed to get the best out of them. The rod is no longer plied in the school or family, and yet there is after all a pretty fair crop of boys.

Agricultural Notes of the Pacific Coast

Northern California

The Gridley creamery will install an ice plant.

Brown's Valley, Yuba county, will soon have a creamery established.

Employees of the Gridley cannery will hold their annual picnic June 4.

Armour & Co. have entered the Petaluma field for the purchase of eggs.

Biggs is discussing extensive improvements on the levees of the Feather river.

Vineyard pruning and also plowing is the order of the day at Windsor, Sonoma county.

It is rumored that the Selby Smelting Company will erect another smelter near Benicia.

Anderson, Shasta county, is preparing for a rose festival to be held about May first.

Goat shearing on ranches near Colusa has been begun. One goat owner is shearing 1700 goats.

District No. 6 in Sutter County proposes to improve the levee system so there will be less danger of an overflow.

Humboldt county dairymen say that green feed is now exceptionally fine, though it was late in starting growth this spring.

Shasta county papers complain that the Sacramento Valley Development Association does not give their section a fair show.

Thrips appeared in the orchards of Suisun valley soon after the first of March and it is feared they will do vast damage this season.

Owners of large tracts of land near Rescue are pasturing goats on brush lands which they wish cleared and finding good results from the experiment.

The Dairy Exchange of San Francisco has a rule that all butter squares must be full weight or at least within two per cent of the specified weight.

Dried fruit in many sections of the Sacramento valley has been all picked up and there are very few parcels of any size now remaining in growers' hands.

The large icing and pre-cooling plant under construction at Rosedale is nearly completed. It will cost about $750,000. It is 900 feet long by 120 feet wide.

Notwithstanding the recent heavy rains and soaked conditions a forest fire near Mill valley caused many residents to get out and fight to save their homes from the flames.

The Board of Supervisors of Alameda county has appointed as a Horticultural Commission Messers. E. O. Webb of Hayward, W. A. Tyson of Niles, and Fred Suelberger of Oakland.

The Sonoma County Co-operative Poultry Association is having a fight to maintain its existence in face of attacks by organized interests which make offers better than this association has offered producers for eggs. The producers should stand pat, for the better offers will be short lived, once the association goes to pieces. Colusa county is discussing the advisability of voting bonds for good roads.

Central California

Thrips are affecting the prunes of the Santa Clara Valley.

Reedley, Fresno county, reports extensive orange planting.

Great preparations are being made for "Raisin Day"—April 30th.

The Farmer's Union continues to increase all over the raisin producing section.

There will be quite extensive planting of orange trees in Tulare county this year.

Recently planted alfalfa near Turlock has been somewhat injured by drying winds.

Ceres desires a new cannery and hopes it will be established within the near future.

Raisins are selling somewhat better than in the past but still at ruinously low prices.

One Kerman peach grower claims a profit of more than $300 per acre on last year's peach crop.

Experiments are being made at Kerman, Fresno county, in the planting of Turkish tobacco.

Turlock has organized a large Local of the Farmers Union, with over a hundred charter members.

San Joaquin county has just voted nearly $2,000,000 for the construction of 288 miles of Macadam road.

A Visalia cow which had dieted on baling wire dropped dead because of a piece of wire penetrating the heart.

The Farmer's Union is planning for a big outing on Raisin Day, April 30th, to celebrate the day and eat raisins.

Notwithstanding the hard fight made by the New York importers on the tariff on figs, a duty of 2½ cents is contemplated in the proposed bill.

Recent meeting of fruit growers at San Jose called to form some agreement as to the disposal of dried fruit, adjourned without definite plans being formed.

The probable retaining of the 2 cents a pound tariff on Zante currants gives assurance to raisin producers. Raisins are unchanged and are to be left at 2½ cents.

A bounty of $20 per scalp is allowed for mountain lions and ranchers along the west side of San Joaquin valley are anxious that this bounty be claimed.

Raisin growers at Hanford have suggested the plan of disposing of raisins in a popular ten cent carton which would with proper advertising, the promoters hope, aid in disposing of a great many raisins.

April 30 has been fixed upon as "Raisin Day" and it is hoped the entire United States will join in celebrating the day and eating raisins. The Southern Pacific Company has promised that every dining car upon that great system will that day serve raisins.

The State Board of Health is making an experimental trip with a special car furnished by the Southern Pacific Railroad Company, in which among other exhibits are models of sanitary farm buildings. These models are made for the purpose of giving better ideas to the farmers so that milk of a higher grade may be produced.

Southern California

Coachella valley will raise turkeys to a greater extent than heretofore.

Corona has discovered a fine deposit of gypsum and will ship large quantities of it.

Imperial Valley recently forwarded 22 cars of cattle, sheep and hogs in one week.

Imperial Valley estimates above a million sacks of grain to be harvested this spring.

With cabbages hovering near the $40, the cabbage growers are feeling very happy.

Seven hundred ostriches have been transferred to the new ostrich farm at San Jacinto.

Extensive planting of orange trees is being made at Shermuttville, Orange county.

County Bee Inspector Pleasants of Orange county reports indications of a good honey crop this year.

A San Marcos, San Diego county rancher, is levelling ground for a large planting of eucalyptus trees.

The Imperial valley has a Japanese melon growers association, incorporated with a capital stock of $5,000.

Ranchers on the peat lands above Huntington Beach report double the planting there was last year of sugar beets.

It is reported that the Yuma Experiment Station, maintained by the Government, will be transferred to the Imperial valley.

Prof. Ralph E. Smith of the Pathological Institute addressed the orange growers of Highland recently on gum disease.

An Eastern syndicate has bought land west of Bloomington, San Bernardino county, and will plant orange trees this spring.

The Imperial valley cantaloupe crop is practically all planted and it is now estimated that nearly 6,000 acres have been planted.

The water is turned out of the ditches of the Covina Irrigation Company and repairs and cleaning of ditches are in progress.

Nine valuable horses were killed in the Antelope valley by drinking of water strongly impregnated with alkali, standing in surface pools.

The car of cotton seed received at El Centro last week was well fumigated and is distributed to the planters. It contained eighteen tons of seed.

Cuttings of spineless cactus supplied by the Plant Introduction Garden at Chico are being planted in the Pala Indian Reservation, San Diego county.

The Imperial Valley Dairymen's Association is raising the standard of dairying in that country and has determined that milk offered at the creameries shall be received according to its quality.

The Fullerton and Whittier sections have decided that the purple scale which has spread largely over that section, is the worst pest which the orange grower has to contend with. One grower alone paid for fumigating his orchard $3000 during the last year.

The Coast

Alfalfa seed is commanding $18.50 per hundred at Spokane.

The Government will make a big display at the Seattle Exposition.

Western Oregon peach trees have been seriously injured by late frosts.

The Roosevelt Dam in Arizona is now 120 feet above the old river bed.

The Horticultural Society at Eugene, Oregon, holds monthly meetings.

Pendleton, Oregon, reports wool prices running about 5 cents in advance of last year.

The Washington County Dairy Men's Association met at Forest Grove, Oregon, last week.

The sheep men of Eastern Oregon are offering a heavy bonus to hunters who are after the coyote scalps.

An effort is now being made by a Wyoming rancher to control the coyote by distributing contagious disease.

The peaches and apricots on Snake River, Washington, have been seriously injured by cold weather in January and February.

Finley, Washington, has opened up as a wool shipping point, owing to the river transportation company making it a stopping place.

Alaska is making an effort to secure an appropriation from the National Congress for $1,000,000 in aid of a good roads campaign.

The Farmer's Union is having a wonderful growth in Western Oregon. At one meeting recently held at Pendleton the attendance was so great the hall would not hold it.

The Puget Sound Warehouse Company has begun to make a charge for handling grain at 50 cents per ton, a reduction of 25 cents on each ton.

Farmers at Colfax, Washington, have organized a Co-operative Farmers Union and are building an immense warehouse for handling next fall's crops.

A bill has been introduced into the Ariozna Assembly, calling for the purchasing of the territorial fair grounds and authorizing the payment of $30,000 therefor.

A tract of land of over a half million acres has been set aside in Western Oregon, in the Olympic National Forest, to be given over for breeding grounds of elks.

A farmer at Montesano, Washington, claims that from six high grade Jersey cows he sold milk so as to net during the year an average of $142.95 each.

Members of the Farmer's Union in Colorado have refused to raise beets for the American Beet Sugar Company in Colorado. The farmers demanded a flat rate of $5.00 per ton or no beets.

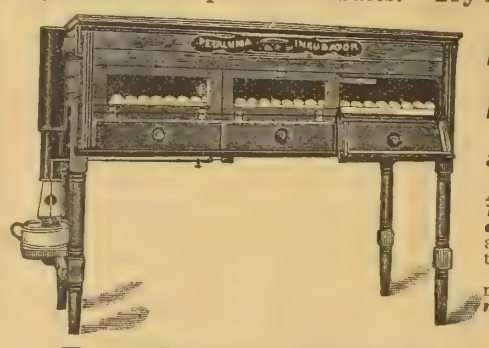
Some wool contracting has been reported in Eastern Oregon, but the producers are slow to sign up at present prices which are ranging from 16 to 18 cents. Montana is reported to be paying 20 cents.

The first dairy association to be formed in Clark county, Washington, is the Lewis River Dairy Association; the object will be to raise the standard of stock and secure better returns to the dairymen.

Don't Forget Quality

MIDLAND Poultry Food

Is based on ***quality*** and it is quality in Poultry Food that produces eggs. ***Cheap filler*** and ***cheap grain*** will ***not*** make eggs. ***Midland Poultry Food*** contains only the ***choicest*** cereals and animal food the market affords. You ***can't*** afford to try and be successful and not get results. ***Midland Poultry Food*** will produce results. Try it and see. $1.95 per sack



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Are still here, after others are gone. ***The Standard of the World Machine.*** Winners of ***more prizes*** awarded by ***World's Fair Judges*** than any other make.

Remember, we make a hot water machine. One of the ***best hot water machines*** on the market.

Send for our Illustrated Catalogue.

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West Coast Chick Feed

Read what others say:

SAMUEL R. KELLAM, former president of the L. A. Co. Poultry Association, says: "West Coast Chick Feed is the best feed for young chicks I have ever used. I have given this feed a thorough test, and have always found that it produced fine, large, healthy chicks."

MRS. A. BASLEY, the celebrated poultry authority, says. "I want some more of your West Coast Chick Feed, for it is excellent. It is purer, cleaner and appears better balanced than other feed I had been using, and to tell the truth, I have been experimenting, feeding both together, and they always eat yours in preference."

Ask your neighbors, for there is more of "West Coast" sold in Southern California than all other kinds put together. If not sold by your dealer send us $3.50 and we will send a 100 lb. sack, freight prepaid within 300 miles.

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Count Your Chicks Before they are Hatched!

Hubermann's Automatic Incubator and Brooder Alarm

watches the temperature in your machine **Day** and **Night** and if for any reason it changes the instrument will call you by **Automatically** ringing the warning bell. Bells may be located at any place, such as in the Barn, the feed house and in the Dwelling. Price Complete $5. Satisfaction Guaranteed. Address nearest Agent, or

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S. C. White Leghorns

(D. W. Young Strain)

Utility Birds. Eggs for hatching $5 per 100. ***Special***—I have a pen of hens testing (Hogan System) 190 and over eggs per year, mated with a male that took 2nd. at L. A. that Mr. Hogan says is a wonder. Eggs from this mating $2.50 per 13.

The Show Poultry Farm

Route One ***Santa Barbara, California***

Profit in the Poultry Yard

By Mrs. Frank Metcalf

We solicit short articles of a practical nature from the fancier and utility breeder, giving their experience with poultry. All inquiries pertaining to feed, management, disease and its prevention will be answered through these columns.

CHICKEN CHAT.

ONE of our valuable contributors wishes practical talks on the profits to be made in raising poultry.

Now, I am going to copy a record from an old note-book of how I made a profit one year a long time ago, back east, and compare prices of feed with prices of feed here, and see wherein the difference lies.

Twenty-seven dozen eggs were set in April, under hens, with eggs at 12½ cents a dozen; 203 hatched, of which 160 were raised. A sudden storm took 27 at one time. Those storms which come apparently out of a clear sky in Ohio, after which one may wander around searching under dock leaves and other big weeds for missing chicks, finding them almost lifeless, stretched out stiff on the ground and only recovering with the best of care, while many are never found.

The rest I lost died young, as chicks will.

I marketed them in September, realizing 50 cents each for them, prices being 15 cents per pound for some and only 12½ for others.

The cost of raising them consisted of $1.00 for 10 shoe boxes for coops being laid upon their sides, and doors made of the fronts fastened on with old pieces of leather for hinges, and buttons. One board was taken out and old pieces of wire netting put on for ventilation, making a vermin (rat) proof coop which accommodated one hen and twenty chicks nicely.

These chicks were raised upon cornmeal, and consumed 28 bushels of corn at 25 cents per bushel, in the ear, we taking it to the mill and having it ground. The eggs cost $3.38. I bought 50 cents worth of oyster shells, making the total outlay for the chicks, $11.88, but they had the run of the whole farm, and picked up half their living around the barns and in the fields.

That is how eastern farmers' wives make their pin money, and they usually have it too. Here the prices of feed would be about twice what it was there, but the chicks can be marketed as broilers at 25 cents a pound at from two months to ten weeks old, so the profit is about the same in the end, if one works equally hard, and does not trust too much to the climate.

The cornmeal would not answer here, and I later learned to use less of it back there in summer, but give these old figures for what they are worth.

Not always did I have as good a record. Many troubles arose from time to time to discourage one. Thieves were one of the things we never could rest easy for, for they visited our roosts at night while we were asleep and robbed us of our whole season's work, often.

Here there seems to be very little thieving, or at least I have never had a moment's worry, nor have I lost any.

The Inglewood Poultry Farm has a market for all its broilers at a price which enables it to pay small producers 25 cents per pound for broilers, and this will be found the best way for a beginner to market his product, until he is in a position to furnish a stated number at regular dates. Sell to the dealer who is under contract whenever possible, which saves the time necessary to hunt up customers, and market singly.

Of course feed is higher in the east now than when this record was kept, and the market reports give the following prices: Saturday, March 20th, prices for feed in Ohio were as follows: Cornmeal, $1.45 per cwt; cracked corn, $1.45; wheat, per bushel, $1,20; barley per bushel, 80 cents; buckwheat, 80 cents shelled corn, 75 cents per bushel; oats, 58; alfalfa meal, per hundred, $1.35 to $1.50; bran or middlings, $1.40 to $1.50 per hundred.

Inglewood prices for same date: Cornmeal, $1.80; cracked corn, $1.90; oats, $2.15; wheat, $2.15; bran, $1.70; shorts, $2.05; wheat bran, $1.50. Barley $1.60 all per hundred pounds.

Eggs in Ohio are quoted 18 cents; eggs in California, 18-22. Chickens quoted in Ohio at 19 to 20 cents per pound, and in California at 23 to 26. So the prices of poultry and eggs keep about enough higher here in California to pay the extra cost of the feed, while the warmth of the climate and the pleasure of working outdoors here as compared with the disadvantages back there, give the chicken business in California a decided advantage over the east. Here one can gain health while working out doors, while there one must be extremely careful or one will lose what health he has. I have chased after chickens in the snow, to come down with a severe and dangerous attack of pleurisy in my old Ohio home more than once, while here the outdoor work for the fowls is a pleasure.—Mrs. Frank Metcalf.

THIRTEEN TENS TO REMEMBER.

Here are a few rules for you, under the decimal system. Though not exactly correct, they are about what should be the case.

Ten hens in a house ten by ten feet are enough.

The yard should be at least ten times as large as the floor of the house.

Ten weeks from shell to the market is the time allotted a chick.

Ten cents per pound is about the average price of hens in market for the whole year.

Ten cents should feed a chick ten weeks, and it should then weigh two pounds if highly fed, the ten cents covering the greatest abundance of food.

Ten months in the year is usually the highest limit of time during which a hen will lay.

Ten hens with one male is about the proportion.

Ten quarts of corn, or its equivalent, should feed a hen ten weeks, if she is of a large breed, but ten quarts in three months is about a fairer proportion.

Ten pounds is a good weight for

males of the larger breeds, one year old.

Ten eggs is the average number to each pound.

Ten flocks each consisting of ten hens, are enough for the acre.

Ten chicks, when just hatched, weigh about one pound.

Ten hens should lay about one thousand eggs during the year. This allows for some laying more than one hundred eggs each, while others may not lay so many.—Poultry Keeper.

A FEW FACTS ABOUT FEEDING.

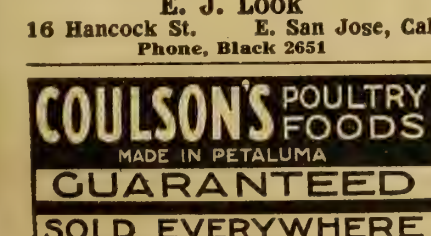
Flaxseed meal added to their morning ration will help make the plumage bright and glossy and will brighten the color of the comb and the ear lobes.

Leg weakness is not uncommon among the larger varieties of fowls, and it occurs most frequently where the growing chickens are being fattened rapidly for market. The best remedy is plenty of exercise and plenty of bone-forming material, such as crushed bone.

For doing their best work hens require a variety of food. Three or four of the principal grains fed whole or cracked, a mixture of bran, cornmeal and beef scraps fed in hoppers or mixed crumbly with milk or water, and a frequent feed of green stuff such as mangel wurzels and cabbage, furnishes a good variety.

Foods rich in oils should not be fed to laying hens except in small quantities, especially in summer. When they are debilitated from attacks of lice a tablespoonful of linseed meal for every six hens given in a soft mash will often be helpful, since it regulates the bowels. Sunflower seed given two or three times a week will often be found beneficial.

Young chicks have very little storing capacity and need to eat frequently. It is best to feed at regular hours, giving them all they will eat up clean at each feeding, and in such variety as to maintain a good appetite. This is especially desirable when the fowls are intended for market, as it promotes quick growth and early maturity.—Kansas Farmer.



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Black and Silver Hamburgs
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and
White Polish Bantams

Some splendid birds for sale. Eggs $3.00 per 13, $5.00 per 26, infertile replaced. My fowls are not related to anything in America and are the finest to be had of their respective varieties. Have won hundreds of first prizes from Los Angeles to Madison Square Garden, New York City, during past twenty years.

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MORE CHICKS **INSURABLE INCUBATORS**

In addition to being recognized as the World's Best Hatcher of stronger chicks than any other,
CYPHERS FIRE-PROOFED, INSURABLE INCUBATOR
for 1909 *Bears the Insurance Label* without which you cannot get insurance on your buildings. Take no Risks. Buy no machine without the label. Our 212-page Free Book tells all about it. Write today.
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Have pure bloods. Eggs for hatching. Hatching chicks a specialty.
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BUFF and WHITE **WYANDOTTES** BREEDER OF Six Varieties of **BANTAMS**
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WHITEWASH FOR POULTRY HOUSE.

At the request of many subscribers, we re-print the following recipe for whitewash, which has been tested and found good:

Slake one-half bushel of unslaked lime with boiling water, keeping it covered during the process. Strain it and add a peck of salt dissolved in warm water. Add also three pounds of ground rice put in boiling water and boiled to a thin paste; one-half pound of powdered Spanish whiting and a pound of clear glue dissolved in warm water. Mix all these well together, and let the mixture stand for several days. Keep the wash thus prepared in a kettle or portable furnace, and, when used, put it on as hot as possible, with painters' or whitewash brushes. This whitewash has been found by experience to answer on wood, brick and stone nearly as well as oil paint, and it is much cheaper.—Pacific Homestead.

SEX OF GEESE.

As to distinguishing sex of geese, will say that where they are running naturally on the farm it is not so difficult to distinguish the sex, but when cooped and in a somewhat frightened stage it is quite difficult because you cannot always make them speak. The voice is the only true guide, the gander's voice being sharp and masterful while that of the goose is a coarse droll tone.

The breast bone is no true guide; in fact, if pressed and placed on the block the breasts of both will have the same appearance; that is, the single and the double breast. It is not the bone that gives it that appearance, but is a sort of fleshy lap and is liable to be double on the goose or on the gander, the age sometimes having something to do with this. The same is true of the neck.

I well recall an instance I had to deal with while superintendent of the poultry department of the Wisconsin State Fair. We had judged the geese and the awards were placed and a protest was made that a certain exhibitor who had won first on his White Embdens had shown two ganders, while the awards had been made on pairs. I called the attention of the judge to this and we both tried by every possible means to dis-

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Fireless Brooders

that will raise every healthy chick.

I handle over 240,000 chicks yearly through the Pioneer Hatchery, I know how to BROOD them. Send for FREE catalogues and circulars.

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112 E. Eighth Street
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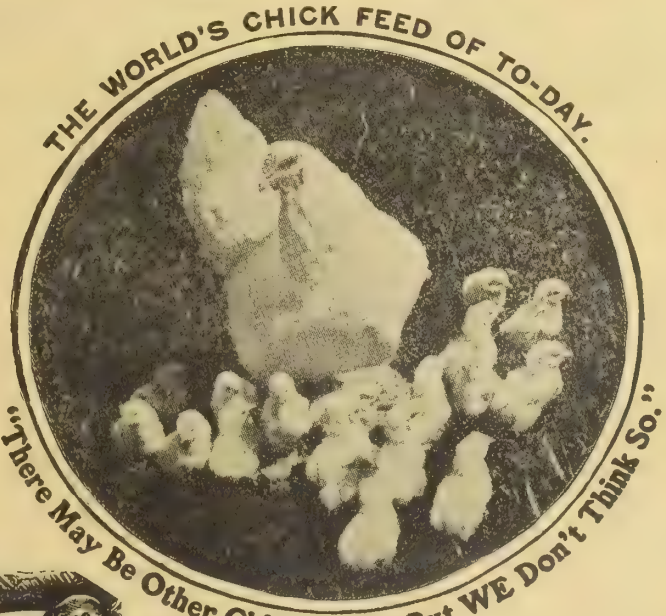
The Only Original Dry Chick Feed for Baby Chicks

Mamma And The Babies All Raised on
CHAMBERLAIN'S PERFECT CHICK FEED



Write for Prices, Booklet, or name of nearest Agent.
W. F. CHAMBERLAIN FEED CO.
(The Perfect Chick Feed Man.) **ST. LOUIS, MO.**

Germain Seed Co., Los Angeles, Cal., Pacific Coast Agents

Baldwin's White Leghorns

1st Prize Hen San Jose and Petaluma, 08.

Have Won Again in the Hottest Competition at the Leading Shows on This Coast

San Jose, Nov., '08, we won ***three 1sts, best display, best pair*** and ***6 other*** prizes.
Petaluma, Dec., '08, ***three 1sts., best collection,*** $50.00 Challenge Cup for best ***Cock, Cockerel, Hen*** and ***Pullet,*** with ***5 other*** prizes.

Heaviest ***layers***
Greatest ***payers***
Any can boast.

The ***prize takers***
And ***coin makers***
Of this coast.

Our Specialty, Heavy Laying, Standard Bred White Leghorns. We hatch more (from Sept. to May), cull closer, and have more high-grade birds left than any other breeder. 3000 birds now. Stock, any size, for sale. Eggs $1.50, $3 and $5 per setting, $6 and $10 per 100, $55 per 1000. Send for price list and ***free booklet.***

Frank E. Baldwin The White Leghorn Specialist
46 Washington Avenue, San Jose, Cal.

Ranch Mirasol
EGGS FOR HATCHING—WHITE LEGHORNS—MITCHELL STRAIN
Large birds, heavy layers, bred for highest utility only. Order book now open for season 1909
Carl C. Curtis, Owner Cor. Lincoln Ave. and Ventura St., Pasadena, Cal.
North Fair Oaks Altadena Cars

Thousands of Chicks

Hatching every week, send today for new 1909 Baby Chick Catalog, tells all aobut our 19 kinds of chicks, ducks, turkeys, etc. Also about our low prices on all kinds of hatching eggs. We ship chicks and eggs everywhere safely. Now is the time to order. We supply 50-chick "SUCCESS" Fireless brooder at $2 and 150-chick brooder at $4, if you order it filled with chicks. Ask about this today.

Pioneer Hatchery

112 East 8th Street

Los Angeles, California

Ward's Fireless Brooders

Save Money

Save Labor

Save the Chicks

Testimonials being received every day.

Write for full particulars and delivered prices.

Coulson Poultry & Stock Food Co.

Box C. Petaluma, Cal.

Germain Seed Co., Agents for Los Angeles

Incubators

A good chance to get a small machine at a big bargain price. We are overstocked with the small size Improved Pacific, 62 egg capacity. Regular price $10.50, now $7.00 till stock is reduced. Not old, second hand machines, but brand new and first-class in every respect. No better made. Hot water heating; best Sheer Regulators; everything the best. Catalogue free.

Also Seed Catalogue and Price List of Poultry Supplies

West Coast Seed Co.

115 W. 7th Street, Los Angeles

Mrs. C. D. Hubbard's White Wyandottes

The largest flock on the Pacific Coast. The largest birds and lay the largest eggs. I have just set my incubator with 2400 White Wyandotte Eggs. Already have a lot of youngsters out. The above shows you that I can give you a better selection than any other breeder on the coast. Write for circular. 100 per cent fertility guaranteed on eggs.

San Fernando, California

Heavy snow banks on the mountains and in the canyons guarantee a good water supply for next season's irrigation.

Southern California was granted a good soaking rain last week, which gives added assurance of the grain and hay crop.

tinguish their sex. They both had a masculine appearance, but as we could not get them to talk there was nothing left for us to do but to probe after the sexual organs, when we discovered them to be a pair. The judge was a man of long experience, but the two of us were at sea, so the reader will see that it is very difficult even for an expert to always distinguish the sex to a certainty, unless they are on their every-day range, when it is easy just from appearance, the gander always standing straighter and quite erect.—Iowa Homestead.

PRESERVING EGGS IN WATER GLASS.

The Washington Experiment Station sends the following instructions as to water glass preservation of eggs:

"The desirability of some simple, cheap and satisfactory method for preserving eggs is apparent to everyone. A method of this sort which would enable farmers, poultrymen and consumers to put away eggs when they are plentiful and comparatively cheap, and preserve them until the winter season, when they are scarce and high in price, would be of very great value. A large number of methods have been suggested, but only two or three have proved practical or satisfactory for general use. Of these the water-glass method, using 5 and 10 per cent solutions, and lime-water-salt-brine mixture method (1 pound of quicklime, half pound of salt and one gallon of boiled water) were tested by Professor Thatcher. He found that eggs can be kept in good condition for home use for at least eight months by immersing them in a water-glass solution or in lime-water and salt brine, although those preserved in water-glass appeared to come out in better condition than those kept in the lime-and-salt mixture.

Other experimenters have succeeded in keeping eggs to their entire satisfaction in solutions of water-glass as dilute as 5 per cent, but the author's experience was that a stronger solution gave a better preservation. It seems probable that a solution halfway between the two which were used, in strength, would be better than either of these, since it would doubtless give a better product than the weaker solution and would not deposit sediment, thereby gradually losing strength, as the stronger solution did.

The cost of preserving eggs in a water-glass solution of the strength just described, exclusive of the cost of the containers, would be less than 1 cent per dozen. Water glass can be obtained of any wholesale drug firm at a cost of about 10 cents per pound, and a pound of it properly diluted should be sufficient to cover 12 or 15 dozen eggs, the exact amount required depending upon the size and shape of the container.

Any vessel which will hold water and which can be covered tightly enough to prevent evaporation will do as a container for eggs put up in this way. Stone jars are preferable, as they are very easily cleaned and prevent evaporation almost perfectly. Wooden kegs can be used, but in case this is done care must be observed to see that the solution does not become too strong on account of the water absorbed from the solution by the keg.

The following directions for pack-

WE INTRODUCED

CRIMSON WINTER RHUBARB

Into New York, Philadelphia and other Eastern Markets

WE UNDERSTAND

Eastern Conditions, Eastern Markets, Eastern People, their Likes and Dislikes

We do not dump our goods on the eastern commission houses and take a chance on getting a price. No! We go right out and create a demand among the high grade dealers under a special brand. Our representatives are working among the eastern trade all the time. Every grower and shipper should write us for information about our methods of introducing CALIFORNIA Products under a guaranteed label.

THE PHALANX COMPANY

513 Chamber of Commerce Building

Los Angeles, Cal.

Eastern Offices, New York and Philadelphia.

Members of Los Angeles Chamber of Commerce

CRIMSON WINTER RHUBARB

$1.50 a Dozen, $6.00 per 100, $40.00 per 1000 March, April & May, best time to plant Rhubarb.

Berry Plants of All Kinds.

J. B. Wagner

Pasadena, Cal.

Rhubarb and berry specialist

GERMAIN'S Eucalyptus Window

A study in Eucalyptus from the seed to the polished wood. The most complete and instructive exhibit ever shown in the country—200 square feet. Don't fail to see it if you are interested in EUCALYPTUS. Literature free.

GERMAIN Seed & Plant Co.

326 S. Main St., Los Angeles

LAND PLASTER

Gypsum will make available the plant food in your soil and bring good returns through small investment.

Wonderful Soil Corrector

Write for prices in car lots.

Acme Cement Plaster Co.

750 So. Alameda St. Los Angeles, Cal.

Don't Wear a Truss

After Thirty Years Experience I Have Made A New Discovery For Men, Women or Children That Cures Rupture.

Costs You Nothing To Try It.

If you have tried most everything else, come to me. Where others fail is where I have my greatest success. Send attached coupon today and I will send you free my book on Rupture and its cure, showing my new discovery and giving you prices and names of many people who have tried it and were cured. It is instant relief when all others fail. Remember I use no salves, no harness, no lies.

I send on trial to prove what I say is true. You are the judge and once having seen my book and read it you will be as enthusiastic as my hundreds of patients whose letters you can also read. Fill out free coupon below and mail today. It's well worth your time whether you try my discovery or not.

FREE INFORMATION COUPON

C. E. Brooks,
215 Brooks Bldg., Marshall, Mich.
Please send me by mail in plain wrapper full information of your new discovery for the cure of rupture.

Name .....

Address .....

City .....State .....

The Tri-Counties Reforestation Committee has arranged for addresses in Southern California by Enos A. Mills, U. S. Forestry Agent.

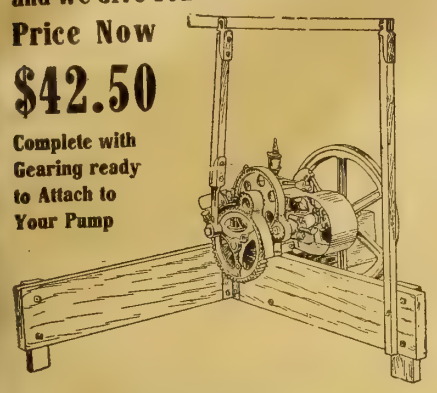
The Manufacturers Have Made Us a

Lower Price

and We Give You the Benefit of the Cut

Price Now

$42.50



Complete with Gearing ready to Attach to Your Pump

Will pump all the time, wind or no wind, and deliver as much water as an 8 ft. Aermotor in a good wind.

From 225 to 1600 gallons per hour, depending on height water is to be raised.

Air cooled, uses Gasoline or Distillate.

A reliable, durable engine at a very low price. Can You Afford to be without one.

Send for Special Circular.

Tanks Towers Pumps Distillate Engines

Smith-Booth-Usher Co

Machinery and Supplies

Successors to
S. J. Smith Machinery Co. and L. Booth & Sons
212-214 S. Los Angeles St., Los Angeles
Home, 10661—Sunset, Main 1090

$50 TO $300 SAVED

We are manufacturers, not merchants. Save dealers, jobbers and catalog house profit. I'll save you from $50 to $300 on my High Grade Standard Gasoline Engines from 2 to 22-H.-P.—Price direct to you lower than dealers or jobbers have to pay for similar engines in carload lots for spot cash.

GALLOWAY

Price and quality speak for themselves and you are to be the sole judge. Sell your poorest horse and buy a

5-H.-P. only $119.50

You Can Make From $5 to $10 a Day

Direct From My Factory on 30 Days' Free Trial. Satisfaction or money back. Write for special proposition. All you pay me is for raw material, labor and one small profit. Send for my big **BOOK FREE.**

Wm. Galloway, Pres.
Wm. Galloway Co.
1455 Galloway Station
Waterloo, Iowa

Poultry Supplies

Write for free Catalogue.

Germain Seed & Plant Co.

326 So. Main Street, Los Angeles

AUCTION

AT 10 O'CLOCK A. M.

Tuesday, April 6th

On the old Cook Ranch 2½ miles southwest of

BURBANK

On Central Ave. 1½ miles northeast of Toluca. Take S. P. train leaving Arcade depot at 7:50 a.m. to Burbank. Teams in waiting.

65 Dairy cows and heifers; 1 thoroughbred bull.

50 Head Fine Dairy Cows, mostly Holsteins and Durhams, a few choice Jerseys, all young and in good condition, fresh and coming fresh, large milkers, in fact as fine a herd of dairy cows as you can find in Los Angeles County. 15 head Fine Heifers.

1 Thoroughbred Holstein Bull 3 years old.

This herd is out of the dairy district and prospective buyers will do well to attend this sale, as everything will not bring the prices that they do in other localities. Anyone wishing to inspect this herd prior to the sale will be met at Burbank by appointment by the owner and taken to the ranch, where you can see this stock milked and tested. Cows will be delivered to Los Angeles, after sale, free of charge if desired.

2 Driving Horses.

Owners are dissolving partnership and quitting the dairy business, and every animal positively must and will go to the highest bidder. No limit or reserve.

Terms: 6 months time on sums over $50 with note and approved Security. Liberal discount for cash.

Don't miss this genuine closing out sale. Free Lunch at Noon.

FUSTER BROS., Props.

RHOADES & RHOADES, Aucrs.

Office 830-832 South Main St. Phones: F1259; Main 1259.

One planter at Beaumont is setting 14,000 eucalyptus trees.

ing eggs in water glass are given:

Use only perfectly fresh eggs. Stale eggs will not keep by any method of preservation. Clean out the vessel in which the eggs are to be packed (preferably a stone jar) by scalding with boiling water. Prepare the solution, using water that has been first boiled and then cooled to ordinary temperature.

To each 15 quarts of water add one quart of water glass. Pack the eggs into the jar and pour the liquid over them, covering the eggs completely. Do not wash the eggs before packing them, as this may injure their keeping qualities by removing a natural protective coating on the outside of the shells.

Keep the eggs packed in this manner in a cool, dark place, such as a dry, cool cellar.

Each day's gathering of eggs may be packed immediately after gathering by placing them in the jar and pouring over them just enough of the solution to cover them. This is better than to hold the eggs for several days at the risk of their becoming stale in order to have a sufficient number to fill the entire vessel at one time. In some of the warmer sections of the state, during the summer months, the temperature often rises high enough to start incubation in eggs. In such localities eggs must be packed soon after they are laid or kept in some cool place until they are to be packed.

Water glass is a somewhat alkaline liquid, but the diluted solution is not injurious to the hands, if they are dipped into it in packing successive gatherings of eggs, or in removing the eggs from the solution.

It is stated that eggs packed by this method will keep for some time (as long as four weeks) after they have been taken out of the preservative solution.

NOTES OF THE POULTRY YARD.

Noontime is the best time to feed the chickens raw vegetables such as cabbages, beets, and turnips.

Grain should not be fed oftener than twice a day.

Thousands of hens are killed every year by feeding too much wet food and mashes. The greater portion of the feed should be dry.

More satisfactory results are obtained from keeping only one variety than in having several, unless a person has plenty of patience and an abundance of room.

Charcoal in a granulated form should always be kept before fowls of all ages.

Large quantities of stale bread may be bought from a baker at 75 cents to $1 per barrel. Soaked sufficiently to soften, it makes splendid chick feed.

A hen should be fed some grain that she doesn't have to scratch for. Although exercise is necessary to keep her in good health, she needs time to rest and dust herself in the middle of the day.

In the damp, spring weather turkeys must be well protected from the weather. A good house is an open-front shed with a roost in the rear.—Farm World.

SCALY LEG.

Scaly Leg can be cured by taking equal parts of sweet oil and turpentine. Shake well and apply every two or three days. Keep this up until a cure is effected.

Thermal is experimenting in planting of dwarf milo.

"Old Trusty" Incubators

120 Egg Size $10.90
165 Egg Size $12.75
240 Egg Size $15.90

WE PAY FREIGHT

Now is the time to get a bargain. Send for 180 page book. Only a few machines left.

E. E. McClanahan

108-112 East 8th Los Angeles

Mandy Lee Incubators

Make money for poultrymen no matter what the results have been with other machines, every Mandy Lee Incubator is furnished with a

New Idea Moisture Gauge

ASK FOR FREE CATALOG

Which registers the amount of moisture during the entire hatch and enables the operator to have the correct amount. Moisture accurately handled in an incubator is a successful hatch insurance.

We are so well pleased with the Hygrometer purchased from you some time ago that we want eight more—one for each of our machines.

D. B. MENTZER, Propr. Mentzer Dutch Farm, Waynesboro, Penn.

Actual test made by the I. X. L. Poultry Farm, Schenectady, N. Y., with the Mandy Lee Incubator:

	No. of Eggs Started.	No. of Eggs Tested Out.	No. of Chicks Hatched
May, 1908	140	10	126
June, 1908	93	9	82
Jan. 1909	40	8	30

HENRY ALBERS CO., 534 So. Main St., Los Angeles

Excelsior Dry Chick Food

If You Are Not Satisfied Try Excelsior

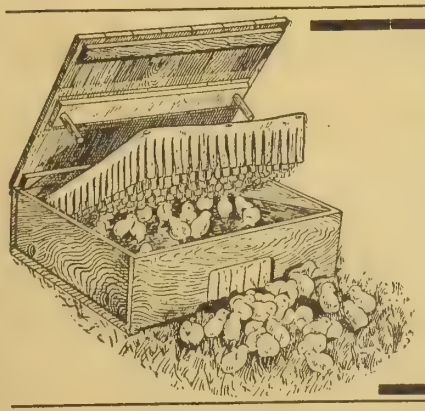
If Your Dealer Don't Keep It Write Us

A balanced ration for the baby chicks. We have been manufacturing Excelsior Chick Food for years, and it is made to meet the conditions of California. Those who feed Excelsior have no trouble raising strong, healthy chicks.

We also make ***Excelsior Egg Food*** and Excelsior Scratch Food; nothing better. For particulars write

Excelsior Cereal Milling Co.

242 Central Ave., Los Angeles, Cal.



Poultry Supplies and Seeds

Petaluma Incubator and Brooders, fireless brooders, Midland poultry food, Steinmesch chick feed, Swift's beef scraps. Send for our large illustrated catalogue of poultry supplies and seeds, it is free.

Aggeler & Musser Seed Co.

113-115 N. Main St., Los Angeles, Cal.

So. Cal. Agents for Petaluma Incubators and Brooders and Midland Poultry Food.

Three towers have been erected in the Salton Sea for weather and evaporation observations.

The Anaheim Gazette is appealing for an Agricultural Polytechnic High School for the "Gem" County.

Coulson's
POULTRY FOODS

Special Dry Chick Food

Makes Them Grow

COULSON'S SPECIAL DRY CHICK FOOD, during the five years it has been on the market has justly earned for itself its great reputation as a life-saver for little chicks by its special adaptation to their needs.

THE UTMOST CARE is observed in the selection of each of the dozen or more articles composing this unequalled feed; tender seeds, cracked grains blown free from dust, steel-cut oats, tiny pieces of dried meat and bone, willow and pure bone charcoal, are combined with other very necessary ingredients; every article being selected with special reference to its quality, strength, and desirability for the needs of the young chick.

FOR YOU TO BUY the many different articles composing Coulson's Special Dry Chick Food is quite impracticable; you could not be certain as to their quality for one thing, and the high cost of certain of them when purchased in small lots might lead to their being left out to the detriment of the chick.

TO MAINTAIN the high reputation of COULSON'S SPECIAL DRY CHICK FOOD, nothing is left undone to make it absolutely the best feed that can be made for the little chicks.

COULSON'S SPECIAL DRY CHICK FOOD can be fed exclusively to your little chicks for the first six weeks, at a cost of about four cents (4c) each; and what is of still greater importance, it will do all that can be done in the way of feed to bring them through that critical period of their lives in full health and vigor.

TO RAISE EVERY CHICK you hatch; to have fine, large, healthy chicks; to have chicks that will stand up and crow when eight weeks old; to raise chicks that you will be proud of, FEED COULSON'S SPECIAL DRY CHICK FOOD, THE LIFE SAVER.

Write Us for Free Samples and Prices

Manufactured Only By

Coulson Poultry and Stock Food Company *Petaluma, California*

GERMAIN SEED CO., Distributing Agents, Los Angeles, Cal.

POTATOES FOR FOWLS.

When digging potatoes, artichokes, or other root crops, store some in a place easily accessible and do not forget to give your fowls the benefit of them.

The poultry needs something bulky and succulent to take the place of the tender grass and other green vegetation on which they have been feeding for months.

Remember an exclusive grain ration is too concentrated.

Give them something "filling" for a change and see how they will enjoy it. Variety is spice for hens as well as humans, and healthy flocks are the result if this truth is kept in mind, and incidentally we might say—healthy fowls fill the egg-basket.

SKIM MILK FOR HENS.

In a recent experiment on the use of skim milk with hens, by the West Virginia Experiment Station, it was found that one lot of hens thus fed increased their egg production practically one egg for every quart of skim milk they received. It will be easy for any man to make his reckoning from these facts.

The reason why table scraps are so much recommended for chickens is because it is a balanced ration. The chickens like it because there is a variety of food in it. Meat, bread, vegetables, everything necessary for egg-production. If plenty of table scraps could be procured no better feed could be found for poultry, but the supply is restricted, of course, and only a few fowls can be benefited therefrom. If, however, poultry raisers would try and vary the food that they give their fowls in conformity to the ingredients found in table scraps, it would materially increase the contents of the egg-basket and redound to the health of their flocks. It is the one steady diet of corn, corn, and nothing but corn, that palls on the appetite of the farmer's fowl and causes the egg supply to fall off.

The right side of the question is to take things slowly. Work an apprenticeship with this the same as with any other business, and graduate with the full honors of a master. A few hens are the best in the beginning, gradually increasing in the work as your knowledge increases in the business. This is the same way to do things with poultry, and the better you lay your foundation, the greater will be your success.—The Feather.

There is no excuse for the filthy, ill-smelling yards and houses, and where these are found they are an evidence of laziness or neglect upon the part of the owner. There is nothing tedious or laborious about the work, but there are little things that must be done daily, and if these are done at the proper time, the fowls need not be anything other than a pleasure and a profitable side line.

The right of the farm poultry to recognition is indicated by the fact that in 1899 the total value of the barley, rye, buckwheat, broomcorn, rice, Kaffir corn, flax, small fruits, grapes, all orchard products, sugar-cane, and sugar-beets raised in the United States, as reported by the census, was less than the earnings of poultry.—F. D. Coburn.

Polly Oil

February 6, 1909.

Dear Sirs:—

I have used your Poultry Tonic for a long time and think there is none so good. But you have one remedy, POLLY OIL, I do not feel you know its worth. I had one little sample bottle given me a few weeks ago. I used it on two cases of swell head and it stopped the swelling right away. I had one pullet on which the lump had stayed for over two months, her bill having grown crooked, but as she was a pet I could not have her killed, but could not drive the lump away until I got the sample of Polly Oil. It then commenced to go away, and in a few days it was nearly gone. I have cured every one since that showed any signs of such trouble. I have used all I have and do not want to be without it.

Very respectfully,

FANNIE L. E. WEBBER,
Pasadena, Cal.

If not sold by your dealer send the price, 50 cents, and we will send you a bottle, prepaid. WEST COAST MILL, Los Angeles, Cal.

WATER GLASS FOR EGG PRESERVING

Why sell eggs at 15c a dozen? Eggs kept in this water glass will keep 12 months or more and are as fresh as new laid. Sold in 25c tins for 150 eggs and $1 tins for 1200 eggs. Egg preserving baskets with cage and cover $1 each. There is only one kind of water glass suitable for this purpose and it is on sale at West Coast Seed Co., 115 West Seventh St., Los Angeles.

Croley's

High protein MEAT SCRAP.
Just what the name implies.

A Meat Scrap High in Protein

Why Not Use the Best

Manufactured by

Geo. H. Croley

Poultry Supplies

631-637 Brannan St. San Francisco. Cal.

Los Angeles Agents, Globe Mills, 925 East Third Street.

"Chicks well hatched are half raised"

CHICKS

We can furnish you strong, healthy day-old chicks from selected utility stock. No. 1 White Leghorns, $9.00 per 100; $25.00 for 300; $40.00 for 500. Special White Leghorns, $12.00 per 100; $34.00 per 300; $55.00 for 500. Brown Leghorns, $10.00 per 100. Black Minorcas, $10.00 and $12.50 per 100. R. I. Reds, $12.50 and $15.00 per 100. Barred Plymouth Rocks, $12.50 and $15.00 per 100. In lots of 50 add one cent each.

San Jose Hatchery

395 E. St. James Street., San Jose, Cal.

Henry Langenschwadt, Mgr.

GEESE

Toulouse Embden

Prize winning stock never beaten at any poultry show.

$1.50 Per Setting

Send your order at once for the best stock in the west.

T. B. C. Sielcken

Calistoga, Cal.

2000 LAYING HENS

East San Gabriel Egg Ranch

S. C. White Leghorns and Barred Plymouth Rocks

Eggs for hatching. We fill orders promptly from our selected matings of great egg-producing birds, at $5 per 100, $45 per 1000. At both Los Angeles Shows, 1909, our Leghorns won all firsts, silver cup and special prizes, and more ribbons than all competitors combined. Eggs from prize winning pens $2 per 13.

San Gabriel car to Masonic Home; two blocks south to ranch.

Swanson & Johnson San Gabriel, Cal.

The Schmeiser Portable Automatic Derrick

The State is Using a Number of These Derricks on the Experimental Farm, at Davis, With Great Success.

No Guy Ropes Required

Any kind of a fork or a net may be used, whichever may be desired.

You can not afford to be without it. Will pay for itself the first season, every year after that doing your work for nothing. Write for descriptive circular and we will tell you how it can be done.

Schmeiser Mfg. Co.
Davis, California

General Agriculture

HOW TO BLAST BOULDERS.

THERE are three generally approved methods for blasting boulders with dynamite. The quickest and most expensive is to place the sticks on top of the boulder, preferably in some depression of the surface, if one can be found, prime with cap and fuse, place several shovelfulls of mud on the dynamite and fire. For a boulder five feet in diameter, the charge would be any number up to ten sticks of 50 per cent dynamite. This method makes much noise, and is unsatisfactory unless the boulder is somewhat flattened in the first place. A round, hard boulder is almost impossible to "mud-cap," as this method of using explosives is called.

Another way is to drive several holes under the boulder with a crowbar, place a stick or so in each hole, use electric exploders to prime the dynamite, and fire the charges all together with a blasting machine. This is the method commonly employed by professional rock-and-stump blasters, or by farmers where such supplies can be had. This method takes less than half the dynamite required by the first method. It is possible, when the boulder has a flat bottom, to make one large hole under it, put the charge all in the one hole, and fire with cap and fuse.

The best way, and the cheapest, is to drill a hole in the boulder an inch in diameter, and about a third of the distance through the rock. Load this hole about one-third to one-half full of dynamite, put a blasting cap with fuse attached into the dynamite, being careful not to allow the fuse to get in contact with the dynamite, fill the rest of the distance with moist earth, tamp it carefully by hand (never with a hammer if you wish to live), and fire. This method takes only about a tenth of the quantity of dynamite required by the first method. A boulder five feet in diameter, drilled 16 inches deep and loaded with a stick of dynamite as described, will be broken up well every time, no matter how hard and tough it may be.

Out-cropping rock can only be blasted out by drilling holes in it and firing as above described. Electric exploders and battery will be of the greatest value for this kind of work, as many holes can be fired together, and you get the benefit of their united strength. The holes should be drilled to a depth of a little below that which it is desired to plow.

Don't cut the fuse so short that the charge will fire before you have time to get out of the way, never less than 18 inches. In firing electrically, use enough wire to allow the operator to work the battery from a safe place, and don't forget that the charge explodes the instant the battery is used —there is no wait and no time to get away; so have it in a safe place to begin with.

For hard boulders and out-cropping rock, the stronger the dynamite the better. Low-freezing dynamites are good as they do not freeze so easily as ordinary dynamite, and thaw more quickly. Don't try to use frozen dynamite—thaw it first. Write to the manufacturers for directions for thawing, if you have not had experience in doing it yourself. The most progressive manufacturers of explosives get up special farmers' catalogues containing full and explicit directions for blasting stumps and boulders, and handling and thawing the dynamite, which they are glad to send to responsible parties.

Dynamite is also useful about the farm for a number of purposes besides taking out stumps and boulders, such as digging post-holes, sinking wells, excavating for foundations, etc. Progressive farmers are finding out more uses for it every year. Handled intelligently, it is a perfectly safe and exceedingly valuable part of the up-to-date farmer's equipment.—Country Gentleman.

"CHINOOK" WIND.

In its present acceptation, a "chinook" is the equatorial trade wind that blows during the winter months from the southwest and, laden with moisture, strikes the Pacific Coast from the northern boundary of California to the Alaskan archipelago. It is now the local name for the soft, balmy, south wind.

But it is a misnomer. In early days in Oregon and even as late as the early '70's, our summer wind from the northwest was called a "chinook," so named because it blew into the Willamette Valley from the coast region inhabited by the Chinook Indians north of the entrance of the Columbia. Among the pioneers and their descendants, a chinook wind was a "clearing up" wind. Now it signifies precisely the opposite; i. e. a wind from the south, followed by rain.

Within the past twenty-five years the word has been grafted into the speech and the written language of vast territory east of the Cascade Mountains and circulates freely throughout Wyoming. It has been carried into Western Nebraska. In recent years it has crept into Boston newspapers with local application. Any soft, balmy wind that springs up in winter is called a chinook.

Thus we see, in an age of high civilization and universal knowledge, the vicissitudes of written words. Within thirty years "chinook" has been turned "end for end."—Portland Oregonian.

DARK PHILOSOPHY.

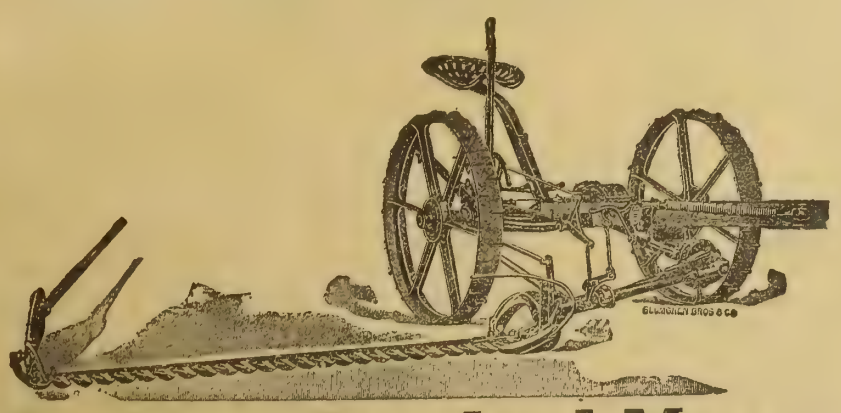
"A man kin allus fix up arguments to quiet his conscience," said Uncle Eben, "but 'tain't no use. No matter how much you turns de clock back, sundown gwinter come jes' de same."—Washington Star.

At Charlie's birthday party John conducted himself with a propriety that would have surprised his mother, while the little host behaved shockingly. "Charles," said his mother at last in despair, "just see how prettily Johnnie behaves. What will he think of you?" "Never mind, Mrs. Jones," John said loftily. "He's only trying to show off. That's just the way I act when I'm home."

A FRICTION STORY

A small boy can slide faster down a smooth, greased board than he can down an ungreased board full of slivers.

MORAL: A mower which comes closest to eliminating friction will require the least power to operate.



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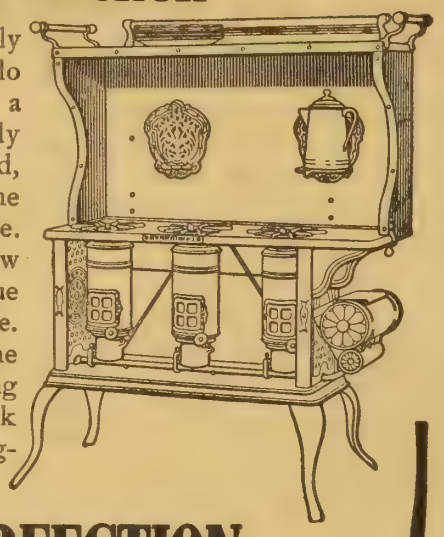

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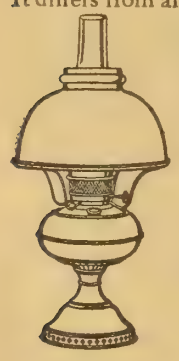
Wick Blue Flame Oil Cook-Stove

is so constructed that it does not add perceptibly to the heat of a room. It differs from all other oil stoves in its substantial CABINET TOP, with shelf for warming plates and keeping cooked food hot, and drop shelves for holding small cooking utensils. Has every convenience, even to bars for towels. Three sizes. With or without Cabinet Top. If not with your dealer, write our nearest agency.



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Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Japanese Iris.

We are considering the culture of Japanese Iris on a commercial basis, for the wholesale cut flower market. Will you kindly advise regarding the culture of this flower—when to plant seed and bulbs, and what demand there is for the bloom in the flower market.—L., Santa Cruz.

Gardeners who are growing it say that the principal requirement is to excavate and line the bottom of the excavation with clay or soil which will retain moisture, this is packed after which the garden soil for the bulbs is placed in it and they are kept supplied with abundance of moisture and never allowed to get dry. It has further been suggested that possibly a long furrow through which water could be kept running at stated intervals would keep the soil thoroughly moist. This flower grows best on the banks of small streams. Have any of our subscribers experience with these bulbs?

Leaking Milk.

I saw in recent issue of the Cultivator reply to El Monte subscriber as to remedy for leaking milk. I wish to say that I have had experience along that line, so that I can give you the result of my experience. At milking time I milk the cow perfectly dry, then rub the points of the teats with fluid extract of witch hazel.—L. G. J., Chula Vista.

The above is surely a most simple and harmless remedy and well worth the trial of our El Monte or other subscribers.

Inflamed Udder.

If your San Bernardino subscriber, who has a cow with a swollen udder will give 15 drops of fluid extract of poke root in bran mash once a day for three days and then skip three days and give again, it will probably help her.—L. G. J., Chula Vista.

Irrigation.

Which is the best method in this locality of irrigation? That is, flooding or the furrow system. If the flooding is the best what time and how often? How late can prunes be irrigated without hurting them.—W. N. S., Hollister.

It will be impossible to give explicit answers to the above questions, for the reason that varying conditions and crops require different treatment. From the last part of the question, we assume this is in a prune orchard, in which case probably the best method would be the furrow method. It is the custom to lay four or six furrows between rows, allow water to run for several hours until saturation of ground is given. The furrow method leaves the surface soil in much better condition than the basin system. The prunes should be kept in good growing condition up to ripening time. As to irrigation injuring them, we do not think that would be the case, excepting where irrigated up to ripening time they would be softer and also dry away more.

Oregon-Washington.

How can I get best condensed description of climate, topography and products of Oregon and Washington. C. L., Burbank.

Write the Chamber of Commerce at Portland, Oregon, or Spokane or Seattle, Washington.

Canaries Eating Eggs.

Seeing the inquiry and answer to the Capay subscriber in a recent issue of the Cultivator, I give the following from my experience with these birds. I have raised canaries for many years, the "English Norwich," but never had such experience as your subscriber suggests. I have many females laying now and am destroying their eggs as I am giving up the business As to what feed may correct the habit of their eating eggs, would say that at this time of year I boil fresh eggs hard and chop very fine, shell and all together with a couple of soda crackers and roll all very fine, mix with a quarter teaspoon of best cayenne pepper; feed of this each morning in addition to their bird diet. They never leave any of this mixture and I have found the birds thrive well on it. I give a little green food as well, and think you will find this a remedy for the egg eating. —Mrs. A. A. Henry, Rumsey.

The management of the dairy department at the State Farm at Davis conducted its first butter test at the State Farm, offering $230 in premiums. Much interest was manifested and it is expected the next test will bring out a greater number of exhibitors.

New York papers report that most of the hold-over dried fruit stock has been cleared off the market.

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The Implement Blue Book, a 460 page volume, weighing two, pounds, listing and describing every agricultural implement, wagon, vehicle and automobile made in the United States, together with the name and address of the Manufacturer, is published by the Midland Publishing Co., Midland Building, St. Louis, Mo., exclusively for the dealers, at $2.00 per copy. The publishers have several hundred copies of the 1908 edition on hand which they agree to send to subscribers of this paper, who will send 20 cents to pay for packing, postage, etc.

BEAUTIFUL CATALOGUE.

The recently issued catalogue of Howard & Smith Nursery Company, 849 South Olive St., Los Angeles, is a work of art and full of information as well as beauty. The illustrations are all specially made for this catalog and are from nature. Especially striking is the front cover with illustration of Hybrids of Delphinium Belladonna and the back cover has a remarkable illustration of Bougainvillea.

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Veterinary

Answers in this column by Dr. R. T. Whittlesey, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Swelling on Ankle.

I have a colt that received a severe cut on one of its hind legs. While the leg was sore it threw its weight on the sound leg, with the result that it injured the ankle on the sound leg; it has been so over a year. The ankle is somewhat enlarged but not a great deal. What shall I apply to reduce the swelling, which no doubt comes from the bone; would a blister be advisable?—C. J., Laton.

If the horse is lame in the ankle blister it with Gumbault's caustic balsam; if not lame, you will get better results from a tight bandage. Saturate a layer of absorbent cotton with glycerine and lay next the skin, then bandage over it as tight as you dare to do.—R. T. W.

Sore Shoulders.

My six year old mare's shoulders become rough or have pimples about the size of a half marble and gradually get so I am compelled to stop working her. After several weeks rest the same condition returns when doing only moderate work. I have tried new pads; also new snug fitting collar.—J. C. P., El Monte.

Advise the use of a strong solution of white oak bark, as follows: One-half pound of bark in one gallon of water. Boil a few minutes. Add about equal parts of alcohol and rub the shoulder once or twice daily.—R. T. W.

Heifer Shy of Milk.

I have a heifer which I have been milking four months—this is the second calf. Has given a good quantity of milk up to within three or four days ago when she discontinued suddenly and since have only been able to get what milk would barely cover bottom of bucket. She eats well, has fine grass pasture, and also chews cud. I thought she might be a self-milker. One night tied her up very short but next morning got no milk. Bag is very limber. What can I do to bring her to her milk—E. W. R., Watsonville.

Cows will frequently let up in the quantity of milk from indigestion and it will usually return in a few days to normal amount.—R. T. W.

Discharge.

Have a mare seven years old that discharges blood at intervals from vagina. She is spirited and works well and has good appetite. Am feeding alfalfa hay and barley. What is the cause of this, and is there a remedy?—Subscriber, Anderson.

There is probably some growth, wart or tumor in the vagina or uterous. An examination with the hand will probably reveal its nature and location. Such growths if not too extensive can usually be removed with an eccrassour.—R. T. W.

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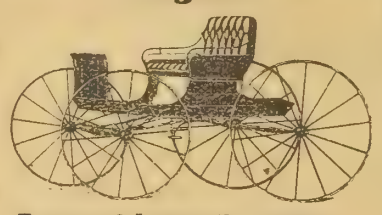

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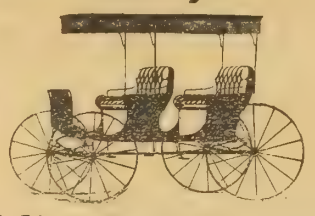

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Bees and Their Care

TROUBLES OF A BEE-INSPECTOR.

THIS is a subject that is rarely touched upon in the columns of any bee-journal, and it may appear to be a little out of the ordinary to present some of the following suggestions to intelligent bee-keepers; but I am of the opinion that Gleanings numbers among its subscribers not a few parties who have no knowledge of bee-diseases, being so ignorant of this important subject that they lose their bees by one disease or another, and never guess the cause.

In my experience as a bee-inspector I find parties who question the existence of bee-diseases, and it is a hard job to convince them that they are wrong, as it usually occurs that a person so ignorant as to question the existence of a contagious disease among bees is conceited, and all of the evidence brought to bear is of no avail. The best way to convince such people is to bring action against them in the court; for, although they may not be convinced they can be convincted of violating the law, and, after once being compelled to pay for their stubbornness, they will yield to the wishes of the inspector on the next occasion. I do not advise indiscriminate prosecution of any one; but when it is necessary I believe in penalizing to the limit. It is folly to let any one maintain a position whereby he disputes facts, established by scientific analysis made in our government laboratories by qualified men who devote their energies to the study of just such diseases.

A bee-inspector is often placed in very embarrassing circumstances. A person capable of fulfilling the duties of inspector should be a competent and well-informed bee-keeper; therefore if he is an apiarist, owning bees near where his services are required, he is placed in a position whereby he can be accused of using his authority to further his own interests. For instance, if it is necessary to destroy some colonies, the owner at once takes this view. Of course, this accusation is fostered solely by parties who are either ignorant of the consequences of the disease when left to itself or by those who are trouble-makers. I have confidence in mankind enough to think that, where the inspectors are apiarists, with the right kind of feeling toward this great and interesting industry, not one in twenty will be found who is doing this inspection for the material benefits derived. An inspector who does his duty is sure to find opposition. In all civilized countries we find neighbors who do not get along together. Sometimes each of these two parties owns bees in an infected district. The inspector may find one apiary contaminated, and order it destroyed, while the other is in splendid condition. This at once leads the first to accuse the inspector of being partial in his methods. Of course, circumstances like the above are rare, but still they exist.

In my opinion the worst hardship the inspector is confronted with is the enforcement of the law when opposed by some influential person. It is not a pleasant duty to start proceedings or legal action against an offender of the statute, as it necessarily calls into court parties as witnesses who rather shrink from the duty, thinking that, perhaps, they may create an enmity with the one they testify against, as often happens.

If any party owning bees does not know the character of the disease supposed to exist in the hives, and after an examination by the inspector still doubts or questions the ability of the inspector in determining what is wrong, and requests that he be allowed to retain a sample of the diseased comb to submit to the government experts for an analysis, he immediately blocks any possible attempt of the inspector to do him an injustice. This kind of test would at once vindicate or convict the inspector of unfairness; and it is not expensive nor unfair to the inspector. I for one gladly submit to such a test. There is a possibility that, in some cases, it might be unfair; but in most instances I believe that it would be of material benefit to the inspector; for, after a few such tests, it could easily be shown that the inspector is either using unlawful and malicious methods or giving a square deal.—Gleanings in Bee Culture.

APICULTURE AT THE UNIVERSITY

We are interested in observing the general movement in the direction of apiculture in our agricultural colleges and experiment stations. This subject in the University of California was first taught during the academic year of 1893-4, and since that time it has formed a part of the regular instruction in this institution. The present instructor in entomology in charge of apiculture came in touch with the work in California in the spring of 1905, when serving as Assistant in Apiculture in the Montana Agricultural College, where, under the direction of the entomologist, he has been in charge of the teaching and experimental work in apiculture since the year 1901.

The past three years have witnessed a distinct advance in the amount and scope of the work being done in apiculture. The number of courses offered, from two repeated twice a year, has been augmented to seven, three of these being repeated twice a year, and two being capable of election indefinitely without repetition of work as research courses. The distinctly apicultural courses are now announced separately from entomology, giving apiculture a recognition and permanence co-ordinate with entomology as a sub-department under agriculture such as has never before been given to this subject in any institution of higher learning in America. It is now not only possible for a student to get his B.S. degree in apiculture, but increased facilities are being provided for research work looking toward higher degrees for those qualified for such studies.

The university apiary numbers forty colonies, and has representatives of each of the six varieties of bees of economic importance. There is now available equipment for thorough instruction in comb and extracted honey production, wax production and manipulation queen-rearing operations, and bee disease investigations. Apiculture will from the first form a part of the school work on the university farm at Davis, where instruction is to be begun this winter. In connection with this instruction work on the farm there is to be established a well-appointed experimental apiary with an apiarist in charge. There are also three out-apiaries with the owners of which the university has made arrangements for co-operative tests of methods of practice and varieties of bees on a more extensive scale. Arrangements have been made with several more of the larger commercial apiaries of the state for advanced students to spend their summers in practical experience in apiary management.

Whether this work of the past fifteen years, culminating in the more recent rapid advances, is to be permanent or ephemeral, as has been the case in every other institution in this country where apiculture has received attention, remains largely with the bee-keeping public. The authorities have been responsive. This has been true in some instances elsewhere. But there seems to be a normal limit to the amount of work that state institutions are willing to do in these untrodden lines, without precedent merely upon the suggestions and recommendations of those personally engaged in the work. The rank and file of bee-keepers must plead their case incessantly and concertedly if they would finally triumph.—Ralph Benton in Gleanings.

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In the High Sierra

THE Mount Goddard quadrangle, in California surveyed during this past season by topographers of the Geological Survey, comprises 40 miles of the crest of the Sierra Nevada. Though difficult of travel, the region can be reached by one day's horseback ride from Bishop or two days' ride from the lumber town of Shaver, on the opposite or west side of the divide from Bishop. The general topography of the Sierra shows an inclined plane running from the San Joaquin Valley 100 miles to the crest, at an elevation of 13,000 to 14,000 feet, and then dropping away abruptly on the east side from 6,000 to 10,000 feet in a distance of 10 miles.

It is up the smoother sides of the mountain that the topographical surveyor endeavors to climb to make his stations on the topmost rocks. When such a gentle, sloping mountain side is found he is profoundly thankful, for some of the ascents are almost perpendicular.

"Within 2,000 feet of the summit of most of the peaks, was as near as it was possible to approach on horseback," said topographer George Davis, in charge of the Government party engaged on this survey. "The rest of the climb had to be negotiated afoot."

Very few roads exist in the Mount Goddard country, but there are numerous trails. Some are straight and afford good going; others are so steep and rough that to take a pack-train over them is next to impossible. Some are well blazed by the characteristic cuts on trees, others by rocks piled upon another; but in most cases these rock-piles or "duck blazes" of the cattle or sheep men have been demolished by the winter snowslides.

"In moving the camp to the head of Bear Creek," said Mr. Davis, "a peculiar trail was encountered. For some distance the blazes on the trees were well cut and regular, although the traveling became rougher and rougher. All the members of the party were praising the kindly trail blazes when suddenly they ended at an impassible cliff; likewise the trail. At the foot of the cliff, however, was a tree with the same old blaze, which appeared in the shape of a diamond, while above it was an artistically carved hand pointing straight upward. We found it advisable to disregard this last sign, and proceeded on our way by another route.

"Meadows in this region are plentiful and are generally located in canyons and glaciated basins, and those that have not been over-grazed by sheep and cattle afford good pasture. Adventurous inhabitants of Fresno, on the west side of the divide, and of Bishop on the east side, as well as the cattle and sheep herders, take advantage of these picturesque spots for summer camping places. Large game, however, deer and bear, are not so plentiful in the Sierra as in the Coast Range, and fishing is limited to certain localities. We had the pleasure of meeting several parties of lovers of outdoor life."

The difficulties and annoyances of the topographer while working in high altitudes are varied. Often he is compelled to climb the same peak two or three times on account of fog, rain and snowstorms, which often have a provoking way of rising just after the ascent is completed and effectually preventing long sights. "Nearly every day last summer," said Mr. Davis, "generally after an oppressive heat in the valley heavy, threatening clouds gathered around the peaks and at about 2 or 3 o'clock in the afternoon formed thunder clouds of tremendous proportions. The lightening often struck in too close proximity for comfort; but outside of scaring the stock, no trouble resulted. One amusing electric phenomenon occured while the party was occupying a station on Mono Pass. Sinister black clouds had been gathering for some time and at last they broke with the usual fury of thunder and lightening. Work became impossible and while preparing to descend to the point where the mules were tied we noticed repeated buzzing sounds uncomfortably close. We proceeded to experiment and found that by stretching out our hands we could induce the peculiar vibrating sound on the ends of our fingers and especially on the end of the tripod, which seemed wonderfully conductive. The electricity seemed to play between the long ears of the mules, making the management of the animals very difficult. At various times during the season we saw huge boulders of rock, for no apparent cause, fall from great heights thousands of feet below, crashing and reverberating like cannon explosions and raising immense clouds of dust.

"Visitors to the Sierra should enter in June and July. After the 1st of September, it is safer and more comfortable to stay away from the mountain region, for the cold and wet season is then at hand. Our party encountered five snow storms in September, and every morning during that month the streams and lakes were frozen hard."

If you raise grain, why not own a fanning mill? It will pay for itself in one season. There is always some grain that needs cleaning or grading before it is ready for the market or for seeding purposes, and the fanning mill is the machine that will put it in condition.

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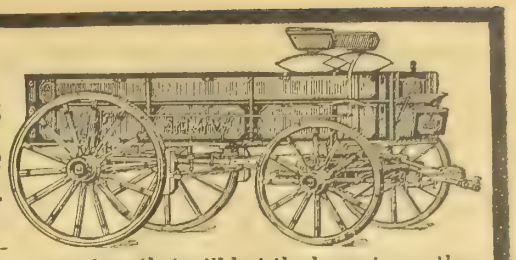

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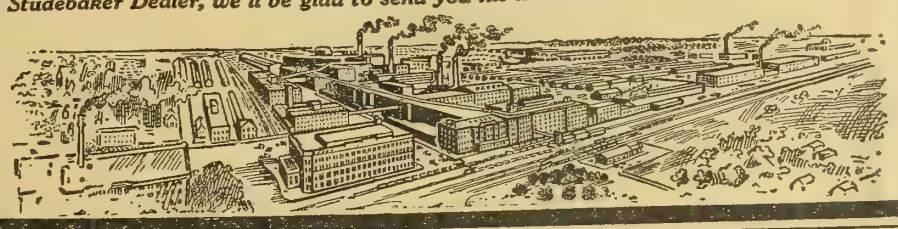

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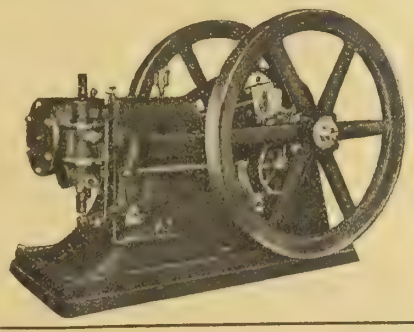

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FULL LEATHER SUIT CASE—ONLY $3.95 guaranteed. This case is full leather, smooth and well finished, deep and wide, very roomy, steel frame, brass lock and catches, heavy roll handle, heavy leather corners. This is a splendid value. Also the new sanitary matting suit case only $2.15. COLUMBIA COMMERCIAL COMPANY, 204 E. 9th, St., Los Angeles, Cal.

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One 25 horse power Olds distillate or gasoline engine. One of the best on the market. Brand new four months ago. You cannot tell it from new now. Cost $450, will sell for $200 cash.
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A "Pomona" air cooled gas engine sprayer complete with two 20-foot lengths hose, 2 poles with nozzles, etc., ready to use. In use only a short time. A dependable machine in perfect working order. Cost $88. Sell for $40.
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PRICE OF CHOICE GRAPE CUTtings and roots reduced. For Rooted Vines—Thompson Seedless, Flame Tokay, Cornichon, Red Emperor and Rose Peru, $1.50 per 100, $10 per 1,000. For cuttings of the following varieties—Thompson Seedless, Flame Tokay, Cornichon, Rose Peru, Muscat, Mission and Red Emperor, 40c per 100; $2.00 per 1,000. J. C. SMITH, Burbank, Cal.

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BARRED ROCKS, RINGLET STRAIN, direct from the famous E. B. Thompson pens, New York. Have taken more prizes than any other Rocks at The Madison Square Garden Shows. For beauty, size and laying quality, unequaled. Eggs per setting $1.50 and up. Reduced rates on incubator lots. Special matings. $3.00 per setting of 15; 2 settings $5. Agent for The Potter System of Selecting the Laying Hen. Price $1.00. A. C. CISSELL, 1812 Santa Monica Ave., Los Angeles, Colegrove car to Swan street.

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BLACK MINORCAS—FINEST QUALity. Bred to lay big white eggs and up to standard size. Eggs $1.50 to $3.00 setting. Grand Cockerels reasonable. J. P. McDONOUGH, Geyserville, Cal.

WHITE WYANDOTTES—EGGS FROM prize winning pen $3.00 per 15; from heavy laying hens $6.00 per 100; $4.00 per 50; $1.50 per 15. J. L. DINWIDDIE, Petaluma, Cal.

WHITE WYANDOTTE EGGS FROM my special bred-to-lay matings, $2.00 for fifteen; $5.00 per fifty. Express paid. A. W. HUSKINS, 713 Waterloo Street, Los Angeles, California.

BLUE ANDALUSIANS, NORTHERN strain. Have bred them nine years, eggs $1.50 and $2.00 per 14; $2.50 and $3.50 per 28; $7.00 per 100, order early. L. A. WILSON, Winters, Cal.

WHITE MINORCAS (EXCLUSIVELY), standard bred, prolific layers, large white eggs. Eggs (after April 1st) $1.25 for 15; $3.00 for 45; $5.00 for 100. L. V. PETERSON, Guerneville, Cal.

WHITE ROCK EGGS FROM MY PRIZE winners at recent Los Angeles Shows, $1.50 per 13; $3.00 per 30. J. W. WHITNEY, R. F. D. 2, Long Beach, Cal.

CHAS. E. SMITH—BREEDER OF Barred Rocks exclusively. Winners of the blue wherever shown. Eggs $3.00 per 15, stock for sale. GARDENA, Cal.

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WHITE ROCKS—SNOW WHITE, prize winning, bred to lay. Eggs $1.25 per setting. W. E. B. SMITH, 820 Elm Ave., So. Pasadena, Cal. Phone Sunset, Main 2866.

FOR SALE—MATED HOMER PIGEons, good, strong, healthy stock guaranteed. For prices and particulars address CLYDE W. ROHRER, Box 252, Reedley, Cal.

WHITE PLYMOUTH ROCK STOCK, eggs, baby chicks for sale. Eleven prizes last State Fair. RICHARDSON, 42 Sacramento Ave., Sacramento, Cal.

MAMMOTH BRONZE TURKEYS—Eggs fifty cents each. None in West larger or finer marked. Laid by old hens. MRS. LAURA E. HARDING, Brawley, Cal.

MAMMOTH BRONZE TURKEYS' eggs—fifty cents each. Mrs. Harding's strain. PETER JENSEN, Brawley, Cal.

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PRIZE-WINNING WHITE MINORCAS. Eggs for setting, $2 for 15; $3 for 30; $6 per hundred, f.o.b. express. C. S. LANE, Santa Barbara, Cal.

FOR SALE—BABY CHICKS, ALL VArieties, 100 lots upwards. J. STANSFIELD, 3301 East 14th St., Fruitvale, Cal.

BRED TO LAY S. C. WHITE LEGhorns, strong healthy stock. Eggs $5.00 per hundred; $1.00 per 15. D. CLAYTON, Colusa, Cal.

S. C. BROWN LEGHORN EGGS $1.50, $2.50 and $5.00 per setting, $5.00 and $7.00 per 100. MRS. C. H. VARY, Pomona, Los Angeles Co., Cal.

RHODE ISLAND RED EGGS FOR hatching, $1.50 for 13, $7.00 per hundred. CHAS. F. TUTTLE, Phone Main 1294. P. O. Box 320, Altadena, Cal.

HOUDAN EGGS SETTING $2.00; 100, $10.00. Fine hoganized stock. MRS. R. HEGI, Dixon, Cal.

MAKING A GARDEN.

(Continued from Page 377.)

tionately large, but all tended to coarseness.

In the boxes and barrels when the guano manure-water was used the second time the flowers were beautifully fine and wonderfully luxuriant. The fences and a rough trellis that concealed the outbuildings were a mass of foliage and blossoms. The trailng plants completely covered the woodwork of the boxes and barrels, and the earth was concealed by growing plants. The rock pyramid was not recognizable, being hidden by a mat of flowering verbenas, some single plants of which covered an area of three or four feet square. Almost every northern species of annual flower was to be seen in full bloom—stately gladioli, white and scarlet phlox and yellow nasturtiums; masses of blue lobelia, petunias, asters, begonia and every variety of fuchsia or geranium.

The Humboldt county creameries at the last pay-day gave the following prices for butter fat delivered: Eel River 39c, Grizzly Bluff 39, Pioneer 39, Central 38½, Capital 38½, Cream City 38½, Ferndale 38½, Riverside 38½.

How many persons are aware that it was Edwin Booth, the brother of the assassin of Lincoln, who saved the life of Lincoln's eldest son? The details of this extraordinary occurrence are given authoritatively in the April **Century**. The number contains four Lincoln articles of unique interest. Mrs. M. Helen Palmes Moss tells the story of how, within an hour, on the day of the shooting, she shook hands with both John Wilkes Booth and the President; and Leonard Grover, manager of Grover's theatre, Washington, during Lincoln's presidency, has written entertainingly of "Lincoln's Interest in the Theatre." There is first publication, also, of two remarkable letters—Edwin Booth's on the President's assassination, written immediately after the event, and that of Miss Julia A. Shepard, now living in Ogdensburg, N. Y., written to her father two days after the tragedy.

POULTRY.

A GOOD INCUBATOR CHEAP—I HAVE a "Petaluma" 300-egg size with all latest improvements. Used but once. Cost $40. Taken for debt. First check for $10 gets it. E. C. ROCHEFORT, Pasadena, Cal.

BUFF ORPINGTON COCKERELS, DIrect from Ross & Tate, $2 to $10. Write E. R. BRISTOL, 209 North Gage St., Los Angeles, Phone Boyle 635.

FOR SALE—CHEAP, 216 EGG INcubatori, or would exchange for bees. A. H. NIEMANN, Tropico, Cal.

O. L. CRANE, BREEDER OF PIT AND Cornish Indian Games. Rural No. 3, Santa Rosa, Cal.

DAIRY FOR SALE.

FOR SALE OR RENT—WELL ESTABlished dairy and milk route, reason age and sickness. H. A. C. McPHAIL, 212 No. Grand Ave, Los Angeles, or MRS. C. S. LANE, proprietress, East end Ortego St., Santa Barbara.

WANTED.

WANTED TO BUY FOR CASH, 2 farm wagons; 2 spans horses, about 2500 lbs. each; 6 of 8-foot disk harrow; mower; rake; and other farming implements. Address, C. R. Care Cultivator.

PHEASANTS.

CHINESE PHEASANTS EGGS, $3.00 for 12; $6.00 for 30; Goldens eggs $4.50; express prepaid. Magnificent book, "Pheasant Farming," 50c, beautiful booklet, 25c. (Send coin.) DILLAWAY'S PHEASANTRIES, Everett, Wash.

Have the Time of Your Life

with my Portable Billiard and Pool Tables.

Send for Catalog and let me show you good, practical Tables at the price of toys. Used anywhere. No special room required. **C. RIDDERHOF**

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Bartlett Pears, Apples, Peaches and Plums *In Variety*

20,000 Asparagus Con. Colossal. **10,000 Mammoth Blackberries**

Write for Price List

MAXWELL'S NURSERIES, ***NAPA, CAL.***

Household Department

ONE PRAYER.

Let me work and be glad,
O Lord, and I ask no more;
With will to turn where the sunbeams burn
At the sill of my workshop door.

Aforetime I prayed my prayer
For the glory and gain of earth;
But now, grown wise and with opened eyes,
I have seen what the prayer was worth.

Give me my work to do,
And peace of the task well done;
Youth of the spring and its blossoming,
And the light of the moon and sun.

Pleasure of little things
That never may pall or end,
And fast in my hold no lesser gold
Than the honest hand of a friend.

Let me forget in time
Folly of dreams that I had;
Give me my share of a world most fair,—
Let me work and be glad.
—Theodosia Garrison, in Independent

BACHELOR AND BABY.

I AM a bachelor with a peaceful disposition and a bald head. My state of single blessedness and my baldness are my misfortune, not my faults. Various girls are to blame for the first, and unremitting application to novel reading in bed may have something to do with the latter.

Like the traditional spinster, a bachelor is authority on the rearing of children, and I have often expressed my views on the subject at some length to a sister of mine who is married and has a small daughter aged five. It so happened that I have seen little of the child, as my hours for calling on my sister are late, and when I arrive Grace; the little girl, is usually in bed.

But the other day my theories on the training of children received a severe shock. My sister said to me: "John, Robert and I have an invitation to visit a friend of mine for the week end. She lives out of town and if we go we don't want to take Grace with us. Now, I've often heard you say that you'd know how to bring up a child, and here's an opportunity. Suppose you come over Saturday afternoon and take charge of Grace until Sunday evening, when we come home?"

This invitation I accepted, although it meant giving up an evening at the club and dinner engagement on Sunday. I went over to my sister's Saturday noon, just before she left, ready for business. She said: "You won't have anything to do, John, except to keep an eye on her, and if you feel like it to amuse her, take her for a walk to-morrow or something of that sort. Maggie, the nurse, will look after her meals, put her to bed and all that; so I don't think you'll have any trouble."

Then she turned to Grace, who had been standing by her side, gazing at me with a wide-eyed stare common to children and which to my disgust made me feel somewhat uncomfortable.

"Grace," said my sister, "mother is going away for Sunday, and Uncle John is coming here to stay with you. Now, be a good girl and do what he tells you."

As she left the room I turned quickly to the child.

"Don't you want to play, Gracie?" I asked.

"Yes!" she responded with enthusiasm; "want to play horsie."

To anyone needing strenuous exercise I can recommend "horsie" as played by my niece or rather as played by her uncle at her direction.

Procuring a piece of string somewhat the worse for wear, she approached me and requested me to take it in my teeth.

"You dets on de floor," explained Grace, so down on my hands and knees I went. The equestrienne sat on my back, kicked me in the sides and pulled violently on the string. I crept painfully about the room, continually urged on to greater speed, until I finally stepped in the hall for rest.

My sister was a careful housekeeper, but my hands and the knees of my trousers showed the traces of their contact with the carpet. As I was examining them Miss Grace said: "Want to play horsie on de piazza, uncle John "

"O, no, dear," I expostulated. "It's cold outside and—" I stopped. Tears were gathering in her eyes and her lower lip was beginning to tremble.

"Very well, we'll go," I assured her, "but you must put on your hat and coat."

I assisted her on with her wraps and we went out on the "Pazazza." It was a clear, cold autumn day, and the sun was shining. A beautiful day for a walk. But I was playing horsie. Up and down on the cold piazza I crept, my hands and knees getting sorer every minute. I hadn't thought to put on a pair of gloves, and after two or three laps decided they'd be useless.

"You is a fat, slow horsie," remarked my rider as I started on what I determined should be the last lap of the circuit. Just as I reached the steps in front of the door Grace suddenly dismounted with a cry of joy and ran down the steps. I raised my head and there on the sidewalk stood the Only Girl, trying to repress a smile, while my rival stood by her side grinning malevolently.

I was a sight. My hands were black my trousers ruined, my hair was rumpled, the string which I dropped was tangled up in my collar and I was dripping with perspiration, cold as it was.

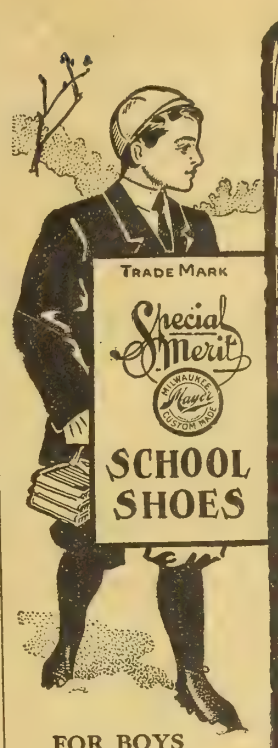
"You look warm, Mr. Blake," grinned my divinity with a smile.

"Having a hot time, John?" grinned my rival.

"My sister left me in charge of Grace," I explained, "and I am engaged in amusing her. This game is known as 'horsie.' It's a little bit strenuous."

They smiled and passed on while I told my niece that it was time to go in and that we'd play "horsie" again some other ady. When it came time for her to go to bed the nurse undressed her. I then picked her up and was about to deposit her in the bed when she reminded me she had to say her prayers.

When she began I felt sinful. When she finished I felt more so. After saying "Now I lay me," as fast as she could, she began her father and mother, all her other relations except me, her cat, her doll, the family dog, the cook and all the other servants. And she finished: "O, Lord, bress uncle John; put some hairs on his head an' make him pretty. Amen."



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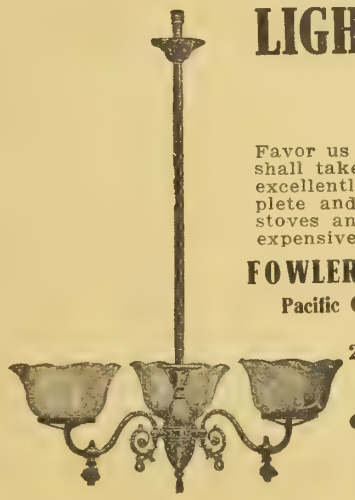

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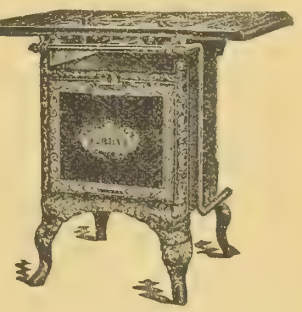

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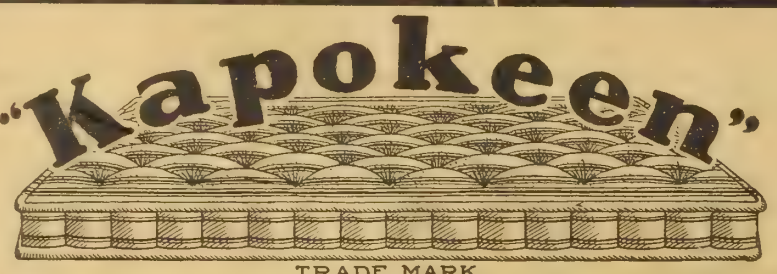

TRADE MARK

The Mattress of Quality

In introducing our Kapokeen Mattress to the readers of The Cultivator, we are taking the first steps toward establishing a National reputation and market for an article, which, on account of its many advantages, has gained a pre-eminent position in its own vicinity.

"Kapokeen" is made from the Kapok or silk floss obtained from the bean of the Eriodendren tree, grown on the island of Java. It is prepared by our own patented process, which removes every particle of seed and preserves in full the resiliency of the natural fibre.

The mattress is made in our own factory where every precaution has been taken to insure absolutely hygienic conditions, by skilled workmen using only the best quality of materials throughout.

NOTE THESE POINTS.

Kapokeen can be "made over" in exactly the same manner as hair.

Kapokeen is sun dried, sun cured, and free from chemicals or other foreign substances.

Kapokeen, no matter how long it has been in use, by being placed for two hours in the sun, will expand and become as resilient as a new mattress.

Price *No. 1 Kapokeen Mattress, 4-4 size, 5 1-2 inch box, Imperial edge satin ticking* **$15.00**

Three-Quarter Size, $12.50 *Single,$10.50*

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John Breuner Co

A postal will bring you a little booklet describing this mattress

Sacramento, Cal.

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The lamp as shown in cut burns 22 hours on 1 quarts of oil.

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About the House

A little later in the spring our city friends will begin to think longingly of green fields and country cream and berries, and soon a letter will come to Country Mouse from City Mouse, so worded that if at all possible Country Mouse promptly replies with an invitation for a "nice long visit." This is all right and as it should be.

But this is only half of the right thing. Along next winter, when work is a little more slack on the ranch, a little bit easier to leave, then let City Mouse, remembering thankfully her pleasure of last summer, write to Country Mouse and gratefully urge her to come and pay a visit in the city at the time when the shops are full and stirring, when there are concerts and plays galore, when Country Mouse can be given the time of her life.

The second half is more apt to be neglected than the first half. But I don't think it is because city people are selfish or heartless, or indifferent. They are busy, and possibly careless; they mean to have Cousin Carry and that lovely Mrs. Peters visit them in their city homes, but there has been no definite time set and the good, honest, but weak-spined intention gets pushed back out of sight and forgotten.

What the sensible country woman should do is to tuck an additional sentence into her warm letter of invitation in the spring. Let her write as joyfully as the spirit moves her when she hears her friends or her kin are coming to visit her in July. And then let her add that she is especially glad of a chance to welcome them this summer as she hopes to be able, herself, to pay a visit to their city homes during the coming winter.

And then, next winter, when she is tired of muddy roads and the monotony that creeps into even the best loved homes at times, let her write a cheerful note asking if it will be convenient for her to visit the city friends at such and such a time, pack her best bib and bonnet, and go serenely away for her well-earned playtime.

And she will be welcomed heartily and honestly by a hostess only too glad to be reminded of her pleasant summer and to be saved from the assaults of her conscience which may otherwise mutter in the spring, "Now, you know you've said time and again you meant to ask Cousin Mary up for a little visit, and here the winter is over and you haven't done it after all."

To make "Hot Cross Buns" for Easter, dissolve one-half teaspoon of salt, two tablespoons of sugar and two of butter, in a cup of hot milk. When this is luke warm, add half a yeast cake which has been softened in a little warm water, and enough flour to make a stiff batter. Beat well and set aside in a warm place; when light, add a small half cup of currants, a little grated rind of lemon, a half cup of sugar, a heaping tablespoon of soft butter, two well-beaten eggs and enough flour to make a soft dough; knead well and set aside until it is light. Then mould into round biscuits and place in a well-greased baking pan. Let them rise and just before putting in the oven dip a sharp knife in flour and cut a cross in the top of each biscuit. Have a hot oven and when the buns are baked, brush the tops with sugar and butter and set back in the oven for a minute or two.

Chocolate crackers are dainties that are easily made at home. Take the little oblong oyster cracker, or the small square crackers, and be sure they are fresh and crisp. Put some sweet chocolate in a bowl and set it over the hot tea kettle. When the chocolate is melted drop the crackers in one at a time. Take out quickly and lay on waxed paper. The chocolate may be flavored with peppermint or wintergreen if you wish.—Elbepe.

WHY WOMEN HAVE NERVES.

Nerves belong particularly to those women who lead what might be called a strenuous life. Not so many women are afflicted who are living out their existence in a more humdrum fashion. Especially are nerves found among women who are employed in a business capacity. To begin with, the majority are criminally careless.

Women have been known to attempt and—more than that—to accomplish a hard day's work in an office on a cup of coffee and a roll for breakfast, and tea and toast or a cup of chocolate and a bowl of milk for luncheon. Frequently you have seen a party of girls making their luncheon on ice cream soda. They probably save their lunch money for ribbons and frills, but they expend ten times their value in vitality.

If a man tried living on that plan he would soon collapse physically, but there is no immediate danger of such a catastrophe, since men care more for their meals than do women.

Another reason for a woman's prominent characteristics is that she never shields her nerves. They are allowed to become too sensitive. If she misses a train she does not sit calmly and wait for the next one, as she might as well do, but she sits on the edge of the seat, taps her foot on the floor and is continually on the alert for the man with the big voice to announce that her coach is ready for occupancy. Then she will hurry as fast as ever she can for fear she will not be able to get a seat. She will contract her eyebrows, bite her lips and clinch her fingers and, perhaps, talk excitedly to herself all the time she is hurrying to the entrance gate, all the time using up her nervous energy instead of storing it up for a time when she may really be in need of it. Then, when the time of need does come, she is all worn out, and is ready to cry with vexation at the slightest thing that goes wrong.

How few women we see now that have that sweet placidity of countenance that is in their grandmother's pictures. Our manner is stamping itself upon our faces as surely as upon our constitutions, and many, many times it is just because we do not keep our stomachs properly filled with wholesome food and plenty of it. A girl had much better throw away her pride and take a good home lunch to her work in a basket than to depend upon such nerve-destroying elements as ice-cream sodas for her daily strength.

HUMAN NATURE'S WEAKNESS.

"I don't mind Mrs. Gigshaw making fun of the way I talk," said Mrs. Lapsling, forgivingly. "It's only her way. We've all got our little peculiarities and idionockrasies."

GREEN TEA.

The green tea is made from the same leaves as the black, although some varieties are best adapted to make each of these respective kinds. The green tea process is the same as that for making black tea, except that instead of withering from twelve to twenty-four hours and fermenting from three to six hours (when oxidation takes place, which renders it black) the green leaves are quickly brought in and placed in a covered double boiler—that is, a saucepan with a hot water jacket (one pound of leaf to a four quart boiler)—and allowed to remain surrounded by boiling water from seven to nine minutes; the cover should be removed and the leaves stirred at intervals. This will render the leaves very soft and flaccid, ready for rolling. During this rapid process the oxidizing agencies of the leaf are sterilized by the boiling water and steam in the hot water jacket surrounding the leaves, and the production of green tea is rendered possible. These flaccid leaves are rolled in like manner to the black tea for about ten minutes, being stirred at intervals until they lose some of their moisture and become sticky; then they are again rolled from fifteen to twenty minutes under all the pressure that can be applied. After rolling they are immediately placed in the oven in a pan and turned at intervals (similar to the black tea) until they are dry and brittle to the touch and a slight scent of tea is given off.—Tea and Coffee Trade Journal.

CHANGE IS REST.

Concentration and system are excellent qualities, especially in work. But overconcentration and overniceness in clinging to one settled rule tell on the nerves in the long run. Relaxation is the great principle that physicians are trying to teach women nowadays.

Recreation need not always consist of social diversion, of the theatre or of a shopping trip, although all are excellent in their way. But people must vary their routine. Men in business life usually have this variety, but nine women out of ten, especially housekeeping women, will go through the same round of duties and pleasure 365 days in the year.

If you begin to suffer from the depression, the despondency, that so often is the precursor of nervous breakdowns, seek a change of some sort. Do something that you are not accustomed to do. Get a flood of new thoughts and new ideas percolating through your mind, and before you know it you will be laughing at the idea of despondency from imagined illness or any other cause.

"ECLAW."

"I heard her boasting that her dinner party was a success from the beginning and ended with the greatest 'eclaw.' What's 'eclaw,' anyway?"

"Why—er—that was the dessert, of course. Didn't you ever eat a chocolate eclaw?"—Philadelphia Press.

A HINT.

"Yes," said the young student thoughtfully, "when I get interested in a subject I never stop until I have embraced it thoroughly."

"That's nice," was the hesitating reply. "Do—do you think I'm an interesting subject?"

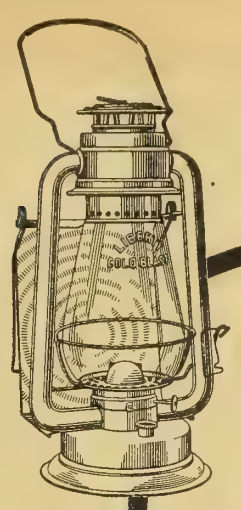
WHY TUMBLERS ARE SO CALLED.

How many times a day do we use words without stopping to think what they mean! Every day at luncheon and at dinner we drink out of a tumbler. But I, for one, never thought why the large glass that holds our milk or water was so called, until once upon a time I happened to have luncheon at All Souls' College, Oxford, where the curiosity of all the strangers present was excited by a set of the most attractive little round bowls of ancient silver, about the size of a large orange. These, we were told, were "tumblers;" and we were speedily shown how they came by their name.

When one of these little bowls was empty, it was placed upon the table, mouth downward. Instantly, so perfect was it balance, it flew back into its proper position, as if asking to be filled again. No matter how it was treated,—trundled along the floor, balanced carefully on its side,—up it rolled again, and settled itself, with a few gentle shakings and swayings, into its place.—Selected.

BEEF TONGUE.

Soak a fresh beef tongue in cold water an hour. Boil until nearly tender. Take out and skin; put aside until cold. Put in a saucepan enough stock to cover the tongue. To this add a teaspoonful of salt, pinch of cayenne pepper, six cloves, chop one carrot, one onion and five stalks of celery fine. Add this to the stock; put in the tongue and simmer until tender. When done take out and add to the gravy one tablespoonful each of made mustard, catsup, mushrooms and Worcestershire sauce, one cup port wine, two tablespoonfuls butter, mixed with three tablespoonfuls brown flour. Boil and stir until smooth. Put back the tongue and simmer ten minutes. Then place on a platter, pour the gravy over it and garnish with slices of lemons and celery leaves.



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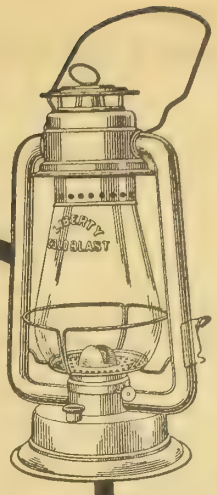

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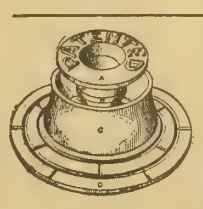

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Catalog free.

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San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, March 31, 1909.

Butter.

Butter has declined during the week 2½ cents and with exceptionally heavy receipts the market at this writing is not strong. Extras and firsts do not suffer as much as the lower grades.

Produce Exchange wholesale quotations are as follows with actual selling price to the trade 2½c advance on Extras.

Creamery ex per roll	52½
Firsts	50
Eastern Creamery ex	50
Dairy	24
Cooking	22½
"Butterine"	16@20

Cheese.

Southern California Anchor	17
Northern fresh	16½
Anchor, Young America	18
Longhorn	22
Eastern singles	17
Cheddars	19
Swiss	17@18
Imported Swiss	30
Daisy	17½@18
Limburger	21
Oregon triplets	18
Twin	17½

Eggs and Poultry.

Selling price on eggs remain as last week with very heavy receipts so that "case count" has been forced down to 19c. Many have been placed in storage. Unless there is juggling with the market there should be but little if any lower quotations this season.

Eggs local candled	23
Eggs case count buying price	19

Dealers pay for live stock.

Hens per pound	15@16
Young roosters	18
Fryers per lb	23
Broilers per lb	26
Roasters	20
Old roosters	8
Turkeys	20
Geese	15
Ducks	15
Squabs	1.25@1.75

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs from 175 to 200 pounds	6½@6¾
Prime steers	4¾@5
Heifers	4@4½
Calves per pound	5
Sheep ewes per head	3.75@4.00
Lambs per head	3.55
Wethers	4.50@5.00

Potatoes.

Wholesale prices are:

Sweets per ctl	1.75@2.00
New per box	1.00@1.50
Early Rose local	2.50@2.75
Early Rose northern	2.50
Burbanks local	2.25
Lompocs	2.25
Highland fancy	1.75@2.00
Salinas	2.50
Idaho's	2.00
Oregon Burbanks	2.00@2.25
Nevada's and Utah's	1.75@2.00
Colorado's	2.00

Onions.

Wholesale quotations:

Danvers	1.75@2.00
Oregon's	2.00@2.25
Nevada's	2.00@2.25
Utah's	2.00@2.25
Red Globe	1.75@2.00
Imperial Bermudas per crate	2.35@2.65
Texas Bermudas	2.50@2.75
Garlic	10@12

Vegetables.

Artichokes per doz northern	50@70
Artichokes locals	25@50
Asparagus green	8
Asparagus per lb white	5@8
Beets per doz	20@25
Bell peppers per lb	18@20
Beans string	20
Beans Limas per lb	8@10
Brussels sprouts per lb	15
Cabbage per sk	1.00@1.50
Cabbage red per lb	4
Celery per crate	4.00@4.50
Chili per lb	20@25
Chili dried	9@10
Chicory per doz	50
Cucumbers per doz hot house	75@3.00
Cauliflower per crate	75@1.75
Carrots per doz	20@25
Green onions per doz bunches	15@20
Horseradish per lb	12@15
Lettuce per crate	1.50@1.75
Lettuce choice	35@75
Mushrooms per basket	3.00
Oyster plant	30
Peas per lb	4@6
Parsley doz	15@20
Parsnips	20@25
Ruhbarb	50@75
Rhubarb Northern per box	1.50@2.00
Radishes per doz	15@20
Spinach per doz	15@20
Turnips doz	15@20
Tomatoes crate	1.25@1.40
Water cress	15@20

Citrus Fruits.

Navels fy	2.00@2.25
Navels ch	1.25@1.50
Tangerines halves	1.50@1.60
Grapefruit seedless	2.75@3.00
Grapefruit seedlings	1.50
Lemons fy	2.00
Lemons ch	1.25@1.75
Limes half box	1.50@2.00
Kumquats basket	25

Fresh Fruits.

Wholesale prices on the market are:

Baldwins 4 tier	1.35
Bellflowers	1.05@1.15
Newton Pippins	1.00@1.50
Red Pearmains	1.35@1.75
W W Pearmains	1.50
Spitzenberg	2.25@2.50
Jonathans	1.75
Grapes Red Emperors	1.50@1.75
Aligator Pears per doz	3.50@4.00
Custard apples per lb	10@15
Guavas	5@6
Loquats per lb	15
Malagas imported per keg	14.00
Pears box	1.00@1.50
Pomegranates per box	1.75
Raspberries	40
Strawberries	6@8
Strawberries ch	4@5

Dried Fruits.

Wholesale prices are:

Apricots	8@10
Evap. apples fy per lb	7½@8
Figs loose white	5
Figs blk	5
Peaches in boxes	7@8
Peaches sacks	6@7
Pears	9
Plums pitted	8@9
Nectarines	7½@9
Prunes 30's to 40's boxed	8
Prunes 40's to 50's	7½
Prunes 50's to 60's	7

Beans Dried.

Wholesale prices are:

Limas per ctl	4.50
Pink No. 1	3.25
Lady Washington	5.00
Small White	6.00
Black eyes	3.75@4.00
Garvanzas	4.00
Lentils California	7.00@8.00
Lentils German	8.00
Bayou	3.50

Nuts.

Almonds IXL per lb	14@15
Ne Plus Uutra	14
Pecans polished	16@17
Peanuts Virginia	6½@7
Peanuts California	5½@6
Walnuts No 1	11@12
Chestnuts	8@8½

Honey.

Wholesale quotations:

Extracted water white	8
Extracted Light Amber	6½@7
Comb W W	16
Comb white	15
Beeswax	30

Hay.

Prices paid to producers f. o. b. Los Angeles are as follows:

Barley No 1	21.00@23.00
Barley No 2	18.00@20.00
Alfalfa northern per ton	14.00@15.00
Alfalfa local	15.00@18.00
Tame Oat No 1	22.00@24.00
Wheat No 1	18.00@21.00
Wheat No 2	18.00@20.00

Grains.

Wholesale selling price f. o. b., Los Angeles.

Wheat new per ctl	2.10
Kaffir corn	1.85
Corn Eastern sacked	1.80
White oats	1.90
Seed Rye	1.80

Feed Stuff.

Wholesale selling price f. o. b., Los Angeles:

Cracked corn	1.85
Shorts	1.80
Bran	1.65
Cottonseed meal	1.25
Oil cake meal	2.50
Feed meal	1.85
Rolled barley	1.50

San Francisco Markets

SAN FRANCISCO, March 30, 1909.

Butter.

Exceedingly heavy receipts of butter during the week have caused a further decline. On Monday the receipts totaled 154,000 pounds for the day.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California flats fy	14½
Firsts	13½
Seconds	12

Cheese.

California flats fy	14
Firsts	13
Cal Young America fy	14½
Firsts	14
Seconds	11½
Young American Oregon fy	16½
Eastern N. Y. Cheddars fy	17½
Oregon flat fy	15

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

Eggs and Poultry.

Eggs remain exactly as last week with no fluctuations during the week. At present receipts are very heavy but all are readily absorbed.

Official quotations of the S. F. Wholesale Dairy & Produce Ex. are:

Fresh ranch extras	23
Eggs first per doz	22
Eggs second	19
Eggs thirds	18
Hens per doz	5.00@7.00
Hens extra	8.00@10.00
Young roosters	9.00@10.00
Old roosters	5.00@6.00
Fryers per doz	8.00@9.00
Broilers per doz	6.00@7.00
Geese per pair	2.50@3.00
Goslings per pair	1.75@2.00
Ducks young	6.00@9.00
Live Turkeys	17@19
Dressed Turkeys	18@22
Pigeons young	2.00@3.00

Live Stock.

San Francisco prices gross weight:

Steers No 1	5¼@5½
Do second quality	4½@5
No 1 cows and heifers	4@4¼
Second quality	3½
Hogs 100 to 140	6¾
Hogs 140 to 250	7
Rough heavy	4½@5
Calves per lb	4@5½
Lambs yearlings	6½
Milk lambs	7@7½
Wethers No 1	5½@6
Ewes No 1	5@5½

Potatoes.

Wholesale market quotations:

River white fy sacks	1.15@1.50
Early Rose	1.85@2.00
River Burbanks	1.35@1.50
Salinas Burbanks	1.60@1.85
Lompoc Burbank	1.75@1.90
Sweets per crate	1.75@1.85
Oregons	1.75
New potatoes	4@4½

Vegetables.

Wholesale quotations:

Asparagus per lb	4@6
Bell peppers per lb	25
Brussels sprouts per lb	3@5
Cabbage sk	2.00@2.25
Cauliflower doz	65@1.00
Carrots per sk	65@75
Celery per doz	30@40
Cucumbers per doz	1.25@1.75
Chili peppers per lb	20@25
Egg plant per lb	25
Green peas per lb	8@9
Mushrooms per lb	12½@25
Marrowfat squash per ton	20.00@25.00
Squash cream per box	50@65
Onions green per box	65@85
Rhubarb per box for bay	1.15@1.85
Rhubarb, Southern per box	1.00@1.25
String beans	10@12½
Tomatoes box Mexicans	75@1.25
Wax Beans	10@12½
Garlic new	9@10

Onions.

Onions Oregons	1.60@1.75
Australian Brown	4.25@4.50
New green per box	25@50

Citrus Fruits.

Navels fy	2.25@2.50
Choice	1.75@2.25
Tangerines per crate	75@1.50
Mandarins	75@1.00
Grapefruit seedless	2.00@3.00
Grapefruit seedlings	1.00@2.00
Lemons ch	1.50@2.00
Lemons fy	2.25@3.00
Limes	8.50@9.00
Limes Cal sm box	1.00@1.25

Fresh Fruits.

Bellflowers	1.00@1.35
Bellflowers No 2	50@90
Spitzenberg	1.25@2.00
Newton Pippins	1.35@1.75
Ben Davis	1.25@1.50
Winter Nellis	1.25@1.50
Other Kinds	75@1.00
Strawberries L. A. per crate 15 bkt	1.75
Pineapples per doz	2.00@4.00

Dried Fruits.

Prunes 4-size basis	2½@3
Santa Clara	3¼@3¾

½c premium for larger sizes

Apricots per lb; Choice 8½; fancy 7@10.

Peaches—Choice	4; fancy 6½
Apples evap	6@7
Pears	4@8
Figs	2½@4
Nectarines	5@6
Pitted Plums	7@8

RAISINS—1908 crop, f. o. b.: Clusters and Layers, 20-lb bxs—Imperial Clusters, 6-crown, $2; Dehesa Clusters, 5-crown, $1.75; Fancy Clusters, 4-crown, $1.40; London Layers, 3--crown, $1.15; do, 2-crown, $1.05. Seeded, 25-lb bxs—Fancy bulk per lb, 5¼c; Choice bulk, 5c. Loose Muscatels, 50-lb bxs—Standard, 4-crown, 4c; do, 3-crown, 3¼c; do, 2-crown, 2¾c; Seedless, 3½c. Seedless Sultanas—Unbleached, 4¼c. Thompson Seedless—Unbleached, 4¾c. Dried Grapes, 2½c.

Nuts.

Walnuts S S No 1	9½
Walnuts No 2	6
No 1 Standard	8½
No 2 Standard	4½@5
Almonds Nonp	11½
Almonds IXL	10½@11
Ne Plus Ultra	9¾
Drakes	8½@9
Chestnuts	9½@14
Peanuts Cal	5½@6

Beans Dried.

Limas	3.75@3.85
Pink	2.75@2.80
Small white	5.35@5.40
Large white	4.35
Black eyes	3.25
Red Kidneys	3.75
Garvanzas	3.75
Bayo	3.50
Horse beans	2.00
Cranberry	3.50@3.75

Hops.

Hops 1908 crop	6@8½
Old Crop	1@3½
1909 crop contracted for at	10@12

Honey.

White comb	15½@16
Light Amber	9@10
Exracted W W	7@8
Extracted light amber	5½@6
Beeswax No 1 per lb	28@30
Beeswax No 2 per lb	23@25

Hay.

Scott & Magner say under date of March 27: The recent storm which we have had in general throughout the state has been particularly beneficial to the southern portion, and came at a time when it could well be used, and was needed. A general report however, from different sections of the interior shows that the season is somewhat late, and it is the general impression here among dealers who are thoroughly posted on the situation, that we have only about enough hay to carry us through, and that prices should be maintained strongly right up to the time when new hay begins to arrive. The immense acreage, however, that is sown to hay this year and the apparent large yield that we are going to have, will change the situation immediately after the first cars of new Hay begin to come in.

Reports from the interior are to the effect that trading has been quiet, being interrupted by the bad weather. This has undoubtedly had somewhat of an effect upon our daily receipts. Export trade has been quiet, but steady, and daily general business has continued with the demand strong and regular.

Alfalfa is weakening, and will probably continue to go off now from day to day, as the green feed begins to take its place. Only the limited supply keeps the price where it is, as any quantity coming in here would immediately cause quite a slump in the alfalfa market.

Choice wheat hay per ton	24.00@26.50
No 1 wheat or wheat & oat	21.00@24.00
No 2 wheat or wheat & oat	17.00@20.00
Choice tame oat	23.00@25.00
Other tame oat	20.00@23.00
Wild oat	19.00@23.00
Stock hay	11.50@13.00
Alfalfa	16.00@18.50
Straw per bale	60@80

Grains.

Wheat No 1	1.90@1.95
Barley	1.42½@1.47½
Corn small	1.80
Oats white	1.95@2.05
Oats gray	1.85@1.95
Rye new crop	1.80@1.85
Corn Egyptain	1.60@1.65
Alfalfa seed, Cal	16@19
Alfalfa seed, Utah	18@19
Mustard yellow	5¾@6

Feed Stuff.

Bran per ton	29.00@30.00
Feed cornmeal per ton	37.00@38.00
Cracked corn per ton	38.00@39.00
Rolled barley per ton	30.00@31.00
Oil cake meal per ton	38.50@40.00
Cocoanut cake per ton	25.00@26.00
Middlings	33.00@35.00
Shorts	31.00@32.50

Citrus Market

LOS ANGELES, March 31, 1909.

About 130 to 140 cars of oranges are going forward daily at this time. The market condition is much better than it has been for the past three weeks. In fact the prices prevailing at the end of February have again been resumed and even better. From present indications a still better condition will prevail and all navels from this time on will command quick purchasers. This condition is not confined to any one section but is general in all Middle West and Eastern points.

Lemons are also improving in market tone and better prices for several weeks now prevail. This is probably only the forerunner of still better conditions as the summer approaches. Foreigns are coming in liberally but do not seem to effect the prices for Californias.

Shipments.

Total shipments to date since November 1st, aggregate 14,436 cars of which 17,247 were oranges, 2,181 were lemons. To this same date last season the shipments were 19,428 cars of which 17,247 were oranges, 2,181 were lemons.

Cream Separators, all sizes, all prices. O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

NEW YORK, March 29.—Forty-eight cars oranges and two cars lemons sold. Market is very strong and higher on oranges. Weather clear and favorable.

NAVELS—	Average.
Cerrito, fy LVW Brown	3.30
Elephant Or OG Cash Assn	3.00
Golden Sceptre Or Rialto O Co	2.75
Success Imp Or Speich & Co	2.55
Success Or do	2.20
Mutual fy Red MO Co	2.45
Flower Or Growers' Ft Co	2.50
Conqueror Xc Ind Ft Co	2.65
Redlands Best Xf MO Dis	2.50
Dulce Sd Harper Ft Co	2.35
Alta Cresta AH Ft Ex	2.85
Robusta do	2.55
Gold Buckle RH Ft Ex	2.80
Lochinvar do	2.65
La Mesa Riv Ft Ex	2.60
Golden Rule do	2.60
Jameson QC Ft Ex	2.80
Alta Cresta AH Ft Ex	3.00
Robusta do	2.80
Victoria do	2.90
Crocus SB Ft Ex	2.55
Canna do	2.60
Pointer Imp ACG Ft Ex	2.55
Queen Bee QC Ft Ex	2.65
Royal do	2.40
Swan RH Ft Ex	2.45
Pet SA Ft Ex	2.30
Blue Globe Riv Ft Ex	2.95
Dan Patch SB Ft Ex	2.65
Laurel QC Ft Ex	2.70
Corona Lily	2.50
Quail OK Ft Ex	2.50
Home Grove SA Ft Ex	2.50
Planet SS Ft Ex	2.60
Electric SA Ft Ex	2.45
Niagara fy Stewart Ft Co	2.45
WT. Michael	2.35
Titus Ranch fy San Marino GPA	2.50
Pointer ACG Ft Ex	2.60
Victoria AH Ft Ex	2.25
Orchard Imp Or National O Co	3.15
Standard Imp So do	2.85
Orchard Or do	3.00
Producers' Fy Red OP Co	2.60
Old Mission Fy C C Chapman	2.90
Golden Eagle Sd do	2.50
Mt. Harrison Fy Sewall	2.85
Naralimo Or Sparr Ft Co	2.55
SEEDLINGS—	
Titus Ranch Fy San Marino GPA	2.45
Conqueror Xc Ind Ft Co	2.00
VALENCIAS—	
Planet SS Ft Ex	2.45
Sunset do	2.30
LEMONS—	
Independent Fy Growers' Ft Co	2.55
Independent Ch do	2.15
Rialto Girl Fy do	2.25
Rialto Girl Ch do	2.05

ST. LOUIS, March 29.—Weather cool. Market is very strong. Nine cars sold. Nine cars navels and three cars lemons on track.

NAVELS—	Average.
Stork SA Ft Ex Claremont	2.30
Greyhound do	2.30
Cosmos SB Ft Ex Yerke's Spur	2.30
Lochinvar RH Ft Ex E. Highlands	2.55
Truth Riv Ft Ex Riverside	2.55
Pride of California do	2.30
Pico ST Ft Ex Whittier	2.30
Canoe SA Ft Ex Pomona	2.35
Transcontinental SS Ft Ex El Mod	2.60
Goldfinch do	2.35
Orchard National Orange Co	2.65

CLEVELAND, March 29.—Showing market is higher. Four cars sold, five on track.

NAVELS—	Average.
Big R SB Ft Ex Rialto	2.10
Camp Fire ST Ft Ex Nordhoff	2.25
Security do	2.45
Jasmine DM Ft Ex Monrovia	2.40
Lochinvar R-H Ft Ex E Highland	2.55

BOSTON, March 29.—Sixteen cars sold, thirty-one on track. Weather favorable. The market is doing better.

NAVELS—	Average.
Laurel QC Ft Ex Corona	2.65
Gold Buckle RH Ft Ex E Highland	2.85
Rey ST Ft Ex Fernan	2.80
La Mesa Riverside Ft Ex Riv	2.70
Golden Rule do	2.60
Pine Cone SB Ft Ex E Highland	2.70
Mision Indian AF Ex Hemet	2.55
Dan Patch A F Ex Bloomington	2.60
Elephant OG Cash Assn	2.95
Orchard National O Co	2.85
Alpha Riverside Ft Co	2.75
Standard National Orange Co	2.50
Elk Riverside Ft Co	2.50
Yuletide Redlands MO Co	2.50
Golden Sceptre Rialto Orange Co	2.45
Signet OG Cash Assn	2.65
BLOODS—	
Vista Bonita AF Ex Hemet	2.45
Dan Patch AF Ex Bloomington	2.50
BLOODS—Halves	
Vista Bonita AF Ex Hemet	1.20
Dan Patch AF Ex Bloomington	1.25
Pony do	1.20
LEMONS—	
Canna SB Ft Ex Yerkes Spur	2.75
Cosmos do	2.65
Coral do	2.30
Pet SA Ft Ex San Dimas	2.65
Greyhound do	2.50

PITTSBURG, March 29.—Market is very strong on navels; a little higher on lemons. Thirteen carloads sold; sixteen on track.

NAVELS—	Average.
Orchard National O Co	2.80
Naralimo Sparr Ft Co	2.29
Del Oro do	2.15
Criterion Penn Ft Co	2.40
Hacienda do	2.30
Aurora E Peycke Co	2.40
Golden Sceptre Rialto O Co	2.40
La Mesa Riv Ft Ex Riverside	2.35
Victor SA Ft Ex Claremont	2.20
Electric SA Ft Ex Pomona	2.35
BLOODS—	
Squirrel AH Ft Ex Arlington	2.35
Palm Tree do	2.30
Electric SA FeF Ex Pomona	2.30
Victor SA Ft Ex Claremont	2.25
TANGERINES—Halves	
Squirrel AH Ft Ex Arlington	.95
Palm Tree do	.85
LEMONS—	
Whittier S Ft Ex Whittier	2.00
Pico do	1.90

PHILADELPHIA, March 29.—Weather clear and cool. Market is stronger on navels and unchanged on lemons. Nine carloads navels, one car seedlings, three mixed cars and one car lemons sold. Ten carloads Florida grapefruit and five carloads Florida oranges sold. The market is strong on oranges; steady on grapefruit.

NAVELS—	Average.
A-One E Peycke Co	2.67
Native Sons King Ft Co	2.55
Lone Palm McGowan & Willard	2.46
Beach do	2.49
Salt Lake King Ft Co	2.52
Tahoe Red OG Assn	2.44
Pointer ACG Ft Ex Glendora	2.39
Blue Jay OK Ft Ex	2.41
Cosmos SB Ft Ex Yerkes Spur	2.57
Electric SA Ft Ex Pomona	2.46
Yellow Beauties AF Ex Hemet	2.87
Electric SA Ft Ex Pomona	2.42
Carmencita SA Ft Ex Fullerton	2.62
Colombo ST Ft Ex Fullerton	2.50
BLOODS—	
Native Sons King Ft Co	2.67
Vista Bonita AF Ex Hemet	2.81
LEMONS—	
Las Fuentes Crocker Sperry Smld	1.67
Montecita Crocker Sperry Sumerl'd	1.52

CINCINNATI, March 29.—Weather cool. Market is steady. Two carloads navels, one car seedlings and two cars lemons sold. There are eight carloads on track.

NAVELS—	
Whittier ST Ft Ex Whittier	2.45
Carmencita ST Ft Ex Fullerton	2.35
Colombo do	2.45
SEEDLINGS—	
Carmencita SA Ft Ex Fullerton	2.65
Conqueror Ind Ft Co	2.60
LEMONS—	
Bridal Veil Limoneira Co	2.05
White Cross do	1.90
Circus Sparr Ft Co	1.85
Senorita do	1.60

THE PROBLEM OF SUMMER COOKING.

The weather man says it's going to be a hot summer. This is setting good housewives thinking about the kitchen work—wondering if last summer's toil and worry over a hot stove in a hot kitchen must be all gone through again—wondering if there isn't some way of roasting, toasting, broiling, frying, ironing and washing without having the kitchen like a boiler room.

There is. No longer need the approach of summer be viewed with dread by the woman who keeps house, for science has made is possible for her not only to do all her stove work quicker and better than ever before, but to do it without the kitchen temperature being intensified to any noticeable degree provided she uses a New Perfection Wick Blue Flame Oil Cook-Stove.

The "why" of it is to be found in the wonderful burners of the "New Perfection," which produce intensely hot blue flames, and yet so concentrate the heat that it is not thrown off into the room to cause discomfort. In this way the housewife is enabled to do her kitchen work in comfort—to say nothing of the time saved in lighting—of having no hot fire when the stove is not needed—of being able to get a flame of any required size at will, from one for simmering to one for quick boiling or any other purpose. In fact, while one flame is working away at full blast, the other two can be at medium and low heat—something that cannot be done with a coal or wood stove.

When washing day comes around there is no need for carrying in coal or wood—nor is there any waiting for the fire to get started. The same holds true on ironing day and baking day. All this, added to the splendid results, makes the "New Perfection" an unusually convenient stove to have in the house.

Then there is the cabinet top, which gives the "New Perfection" the appearance of a modern steel range. Its commodious top shelf is extremely useful for warming plates and keeping cooked food hot. Also has two drop shelves on which to stand the teapot and coffee pot. In fact, the "New Perfection" has every convenience—even to bars for towels.

"The "New Perfection" burns ordinary kerosene and effects no small saving in fuel expense in the course of a single season.

Another member of the "New Perfection" family is the Rayo Lamp—an all round house lamp in which illumination by means of kerosene approaches more nearly perfection than in many expensive and complicated systems of lighting. Its latest type of central draft burner and its beautiful porcelain shade unite in producing a light of great brilliancy—yet so mellow as not to tire the eyes.

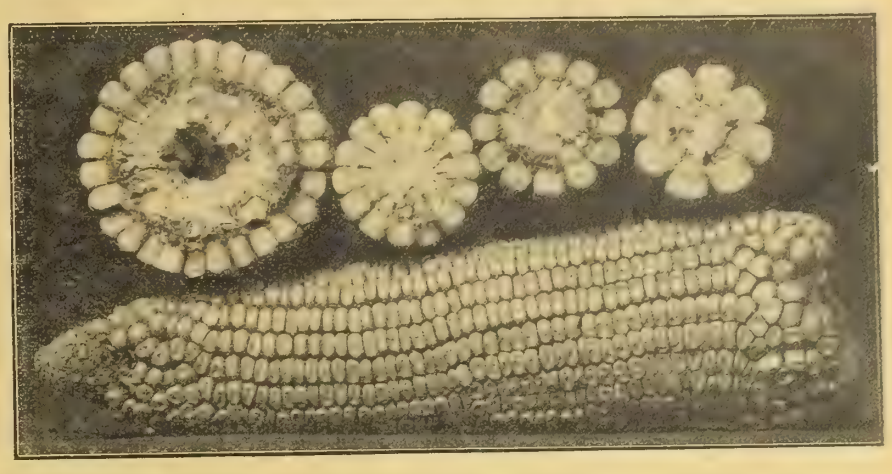
Whether used in library, parlor, bedroom or dining-room the Rayo Lamp is never out of place, as it harmonizes with the furnishings of any well kept room.

The New Perfection Wick Blue Flame Oil Cook-Stove and the Rayo Lamp, combining as they do beauty, convenience and low price, should be in every home where real comfort is a consideration.

The Seed House of the Great Southwest

CORN CORN CORN

1 2 3 4



1 El Monte Monster. 2 Orange Co. Prolific. 3 Pride of North. 4 Hickory King.

The above cut shows a full ear and a cross section of the El Monte Monster, a large-eared, white dent corn, as compared with the Hickory King, Orange County Prolific, and the Pride of the North. Twenty-six and twenty-eight rows is not unusual.

Mr. Thos. Herbert, El Monte, says if he would have had a good stand, he would have averaged nearly 100 bushels to the acre. All of his neighbors have purchased of this variety for next season. Matures in one hundred days.

Price, per 10 lbs. $1.00; 100 lbs., $7.50.

Orange County Prolific

A Medium Sized, White Dent Corn

Our attention was called to this wonderful, remarkable corn by Mr. McLaren of Santa Ana, who says his crop averaged 110 bushels per acre. Many stalks matured fine, full-sized ears, while few had less than three. Like the El Monte Monster, McLaren's neighbors have already bought much of our supply. As an ensilage corn there can be none better because of the profuse foliage and numerous ears. Matures in one hundred days.

Price 10 lbs. $1.00; 100 lbs. $7.50.

Hickory King

We have secured an exceptionally pure strain of this variety. It is too well known to need description, but we call attention to the large, white dent grains and the very small cob. Mr. Chas. Fawcett, El Monte, says he has the best success with this variety, as it yields nearly twice as much on his land as the yellow dent varieties. It is a late variety, requiring one hundred ten days to mature. It is a rank grower and an all-round favorite.

Price 10 lbs. 50 cents; 100 lbs. $3.50.

Pride of the North

A ninety day yellow dent, has long been a favorite in Southern California. Mr. Thurman of El Monte planted twenty acres about the middle of last July, and harvested more than one thousand bushels of corn. For late planting on damp land, or for early planting on dry land, this variety should always be selected. It never disappoints, but always surprises.

Price 10 lbs. 50 cents; 100 lbs. $3.50.

OTHER VARIETIES OF CORN mentioned below are too well known here to need detailed description; they have long been the leading sorts, and we always carry a large stock on hand for each season's demand.

Early Mastedon.—Having grown and sold the Early Mastedon corn four years, we recommend it as being decidedly the best of all yellow Dent varieties. Everyone who has seen it grow is enthusiastic in its praise. Large ears, deep grains, and as many as 24 rows on a cob. **Eastern grown, per 100 lbs. $3.50.**

The Iowa Silver Mine.—A large White Dent. The grains are as large as the Hickory King, but longer, having a small cob. It is the most desirable of all White Dent varieties. **Per 100 lbs. $3.50.**

Red Cob, Ensilage.—A large stalk with a profusion of leaves which makes it the most desirable for ensilage. **Price, per 100 lbs. $3.50.**

Reid's Yellow Dent.—This is the variety that has been brought to a high state of perfection by the Illinois growers, and drew the medal at St. Louis because it averaged the greater number of pounds per bushel. **Price per 100 lbs. $3.50.**

King Phillip—90 days. A small, yellow variety of Flint corn; very popular in this market. Price on application.

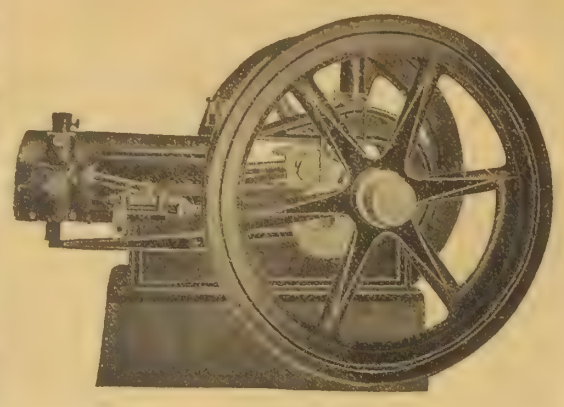
Oregon Evergreen Sweet Corn

Oregon Evergreen corn now has the endorsement of every gardener that grows for the Los Angeles market. We are safe to say that any gardener growing this corn for any other market, will have the lead of all competitors just as soon as he will show to his customers its superiority over all other sweet corn.

This is the fifth year since we first offered this new and distinct variety. The demand has grown each year until it is now practically the only variety offered on the Los Angeles market. The peddlers will have no other and one no longer hears the consumer complain about the poor quality of the California sweet corn. The advantages of this corn over all others, is its earliness, its large size, rarely less than eight inches long clear of husk. The grains are full to the tip. The husk is very thick and folds tightly over the grains that the worm does very little damage compared with other varieties. The thick husk is also desired by the peddler and the grocery man, because it can be held over two days before it appears old and wilted. It is very productive, averaging three good ears to every stalk; often bearing five marketable ears.

It can truthfully be said that Oregon Evergreen has excluded every other variety of sweet corn from our local market. **Price, ¼ lb. 5 cents; ½ lb. 10 cents.; lb. 15 cents.** By mail add 10 cents per lb. extra. **100 lbs. $8.00.**

Aggeler & Musser Seed Co. **113-115 N. Main St. Los Angeles, Cal.**



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5000 H. P.

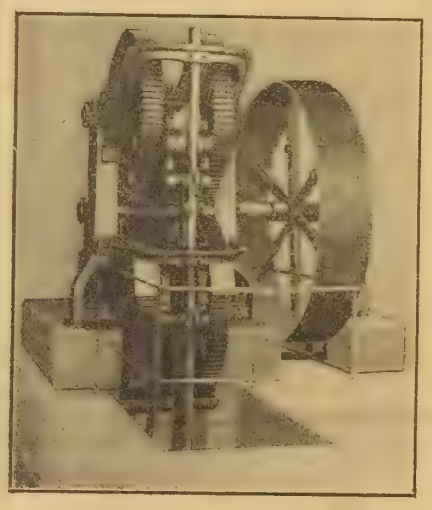
Install
a
Western
You'll
Smile and Smile and Smile

Least Fuel
Most Water
Fewest Repairs

Western Gas Engine Co.

Factory and Main Office:
908-32 N. Main St., Los Angeles, Cal.
Northern Branch: 22 First St., San Francisco, Cal.

The Smooth Running, Noiseless Pomona Deep Well Pump



It is thirty to fifty per cent more efficient than any centrifugal pump ever made. No high speed bearings to cut out. All breakages and rod troubles eliminated.

This is the only pump you can afford to buy if you consider your own interests. Hundreds of satisfied users testify to this.

Used by the best water companies who know what a good pump is.

Send for a catalog or what is better come to POMONA and let us show you some of these plants in operation.

POMONA MANUFACTURING CO.
POMONA, CALIFORNIA

THE
Latest Deep Well

Turbine Pump

Guaranteed to deliver from 100 gallons per minute upwards, depending on the diameter and capacity of well, from a depth of 50 to 300 feet below the surface. Can be either belt driven or direct connected to electric motor as occasion requires.

Write for Catalogue 46B.

A deep well pump that has no valves or plungers to wear or get out of order, no gears, consequently no noise or breaking of teeth.

Compact, durable, always primed and ready to operate, constant flow, hence increased capacity of well.

This type of pump is fast taking the place of Vertical Steam, Deep well Plunger and Propeller Pumps.

Byron Jackson Iron Works

Main Office and Works:
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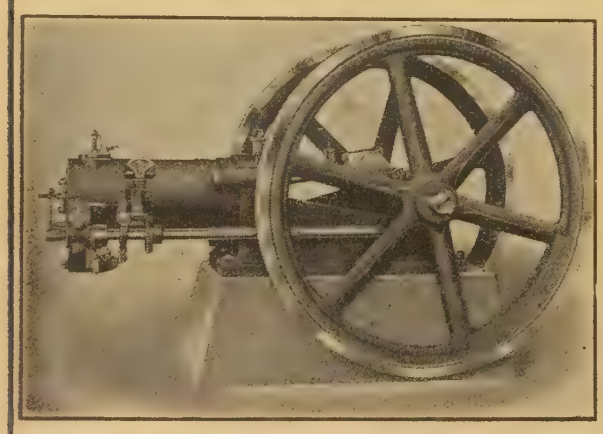

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Hoisting and Marine

All sizes from 3 H. P. to 50 H. P. carried in stock.
Write for our catalogue "C".

Doak Gas Engine Co.
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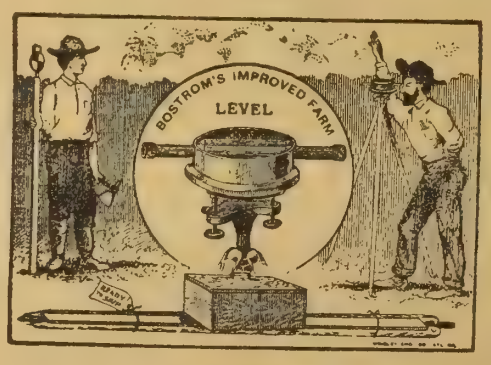

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PALACE HARDWARE COMPANY
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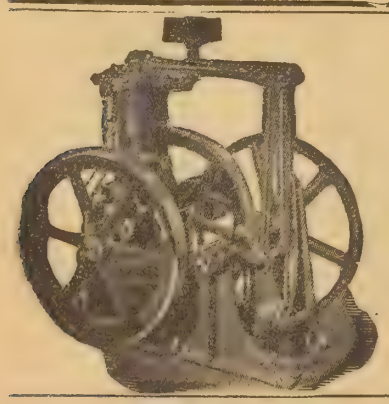

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The Little Wonder

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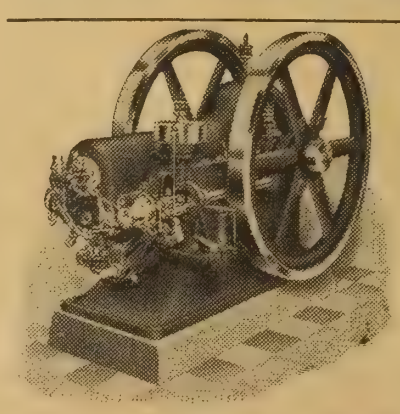

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Is amongst us and if you are in need of power you should investigate this one. You will find that it possesses the most desirable features of all the old timers and the price is right. Plenty of catalogues for distribution.

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LOOK Most wonderful invention. Twentieth Century New Idea Indelible Stamping and Monogram Outfit. Postpaid 35c.
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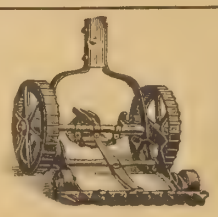

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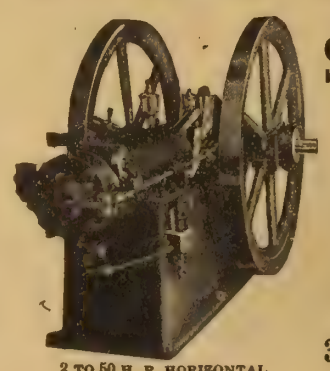
Clipper Lawn Mower
Dixon, Illinois.



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A

California Cultivator

Published Weekly — One Dollar a Year

Los Angeles — April 8, 1909 — San Francisco

In the San Bernardino National Forest

This area has been "sheeped to death." Every bit of grass and ground-cover is gone – nothing left but the trees.

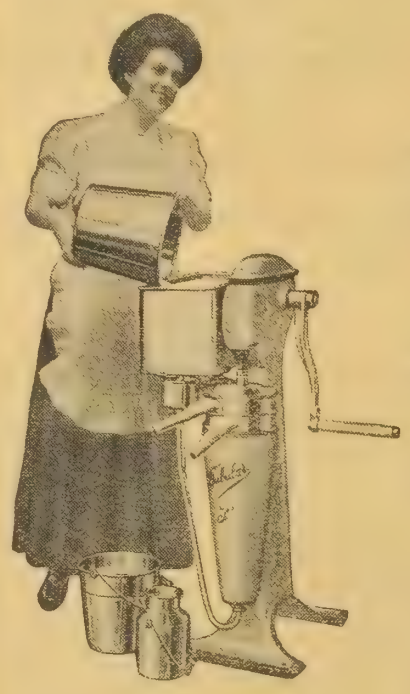
The same range after sheep had been excluded for three years. Brush, grass and ground-cover returned. Cattle only allowed to graze.

Courtesy Out West Magazine.

How The Farmers Voted

TRADE Sharples MARK 29 Yrs

We recently offered a beautiful calendar to **every** farmer sending us his name and address and telling us how many cows he had and **what make of cream separator he owned.** We received many thousand replies. **Every one of these farmers told us the name of the separator.** It was just as though the farmers had **voted** to decide which cream separator is best.



Tubular supply cans are low, steady, and need not be removed to take the machine apart. A plumb bob is attached to the back of our 1909 Tubular "A" for quickly leveling the machine.

Almost Half Say Tubular

More than 41 per cent.---**almost one half**--of all the separators owned by these many thousand farmers are Tubular separators. There are **more than twice as many Tubulars** as the three leading "bucket bowl" separators **combined.** This absolutely proves that **farmers like Sharples Tubulars best.**

This is the farmers' verdict. Farmers are so thoroughly convinced that Tubulars are way ahead of the very best "bucket bowl" machines that they have bought over twice as many Tubulars as they have of the three leading "bucket bowl" separators combined.

You will make no mistake in buying a Tubular. Made in the world's greatest separator factory. 1908 sales way ahead of 1907--out of sight of most, if not all, competitors combined. The additional fine features of our 1909 Tubular "A" are making 1909 better yet. Write for catalog No. 260.

Sharples Tubular Cream Separators run so easily that the medium sizes can be turned by one who is seated.

The Sharples Separator Co.

Toronto, Can. **West Chester, Penna.** Portland, Ore.
Winnipeg, Can. Chicago, Ills. San Francisco, Cal.

WILLIAMS' GOOSE-NECK CULTIVATOR

Patent applied for
ARNOTT & CO., General Distributers,
112 So. Los Angeles St., Los Angeles, Cal.

Especially adapted for citrus orchards. Sizes 7 to 14 ft. Lightest draft. Write today

The following is a sample of the unsolicited testimonials received regarding the Williams Goose-Neck Cultivator:

Merle, San Diego County, Cal., March 25, 1909.

Arnott & Company,
Los Angeles, California.

Dear Sirs:—You may recall that I recently purchased one of your Williams Goose-Neck Cultivators. I wish to say that I am exceedingly well pleased with it. In fact, as I told Mr. Jones, your representative in Oceanside, I would not take $500.00 for it if I could not get another. This is not an exaggerated statement, I mean it literally. In this section we do not have irrigation and everything depends on proper cultivation, so that good tools are very important. There are three points in which the Williams Goose-Neck Cultivator surpasses all other cultivators which I have seen, viz:

First. The draft is very light. My two horses weigh 900 lbs. each and they have no difficulty in drawing the 7 ft. cultivator.

Second. The Williams Goose-Neck Cultivator stirs the soil well without exposing the subsurface, thus preventing the escape of moisture.

Third. The cultivator being of low construction, one can cultivate under the trees as easily as harrow.

I was showing my cultivator to a neighbor the other day and had him take it home to try it. The use of it for half an hour so thoroughly convinced him of the merits of the tool that he has, through Mr. Jones of Oceanside, given you an order for one-half dozen cultivators.

Messrs. Williams & Son of Orange certainly deserve great credit for inventing the Goose-Neck Cultivator.

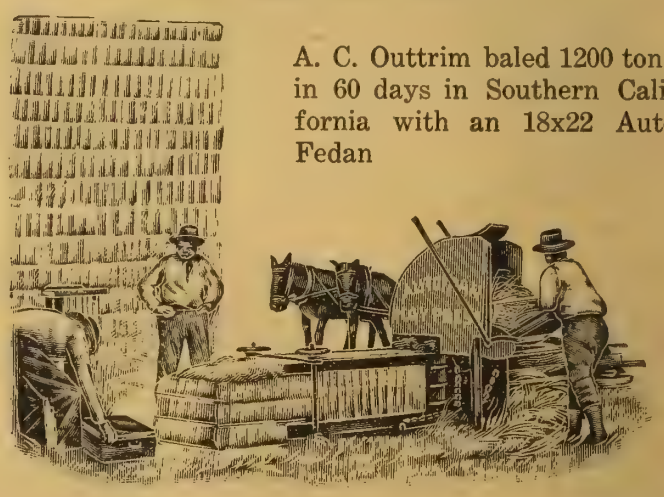
Sincerely yours

LOUIS C. LUHR.

WILLIAMS & SON, Mfrs., Orange, California

The Auto Fedan 3-Stroke Self-Feed Hay Press

Two Men Can Run It



A. C. Outtrim baled 1200 tons in 60 days in Southern California with an 18x22 Auto Fedan

The only successful self-feed, two-horse-power press made. Guaranteed to give satisfaction or no sale. All steel and iron. Will bale one-third more hay easier and better than other horse-power machines with one-third less labor. Will bale cheaper and easier than power presses. **Ask for Catalogue No. 28.**

The Auto Fedan Hay Press Co.

1521 West 12th Street, Kansas City, Mo.

AGENTS FOR CALIFORNIA—John Schilling, Jr., care Davies' Warehouse, Los Angeles, Cal. J. C. Gordon, Box 167, Sacramento, Cal.

Olds Complete Power Spraying Outfit

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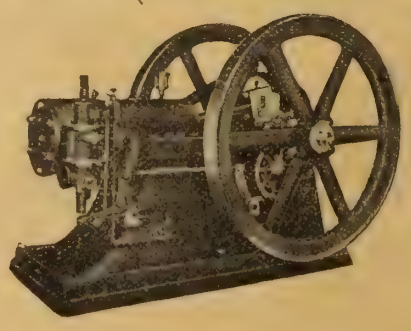

They are self starting and simple in operation. They are best in durability, appearance and price. They operate at a low cost and develop the maximum power. They embody every improvement in gas engine construction. A full line of repair parts and accessories always on hand. Write for catalog and estimates on complete pumping plants.

Harrison Machine Works

719-21 N. Main St., Los Angeles

California Cultivator

Vol. XXXII—No. 14 Los Angeles, California, Thursday, April 8, 1909 Subscription $1 a Year

Some Products of the Hawaiian Islands

Written for the Cultivator by W. B. Thomas of Wahiawa, near Honolulu. Mr. Thomas is now a Pineapple Grower, but Will be Remembered by Many as a Former Owner of the Cultivator

AS IS pretty generally known everywhere, the production of cane sugar is the principal industry of the Hawaiian Islands—indeed, the value of the sugar crop is about eight times that of all others combined. Instead of thousands of small farms, owned by individuals, this sugar is grown on vast estates of thousands of acres, each owned by corporations with a capital of from one to five million dollars.

Plenty of Fertilizer.

Intensive culture is the rule and every means known that will increase the output in field or mill is used. Fertilizers are liberally applied—from $40 to $50 an acre per crop. Eighteen months from time of planting is required to mature the first crop. One year later a second crop is harvested from same planting. Then mammoth steam plows turn over the land to a depth of 24 to 30 inches and the field is replanted. The same goes on year after year. No rotation of crops and no rest for the soil. In spite of this heavy drain, the annual yield per acre does not seem to decrease. Some of the most productive plantations produce an average of ten tons of sugar per acrde and occasionally thirteen tons have been produced on an acre. To do this, over 100 tons of cane must be grown. I am sure it would be hard to convince some farmers in the states that one hundred tons of anything could be grown on an acre of land in one crop, but it has been done here frequently. Even with the application of a ton or more of fertilizer per acre a year, it is surprising how the land will continue to do this year after year without rest or change of crop.

Irrigation.

Immense quantities of water has to be used. During the greater part of the year the crop is irrigated every ten days. Most of the water supply comes from artesian wells at or near sea level and as the land rises from the sea to the mountains, huge pumps are required to lift it. In some instances as high as 700 feet, but 450 feet is as high as it is generally considered profitable to pump water. Single plantations pump from 40 to 50 million gallons per day—as much water as the city of San Francisco uses.

Labor.

From two to three thousand laborers are employed on a plantation. Wages are from $18 to $23 per month, with free house, fuel and physician's services. There is no necessity for them to lose any time either. They can work every working day in the year. Thus it will be seen a laborer can average as much per year as he could in the states where the pay per day is higher.

Before the islands became a part of the United States, the labor question was easy, as there were no restrictions on emigrants coming from any country. Chinese came in large numbers and they made splendid workers. Several thousand Portugues also came and they too proved good workers, thrifty and law-abiding. After annexation, when Chinese were no longer admitted, the planters turned to Japan and thousands of men and women from there were brought in to work the rapidly growing plantations. Within the past two years, however, that source of supply has been cut off and the world is being searched for people to carry on the work.

Over $300,000 was spent by the sugar planters in the past two years in bringing about 5000 Spaniards, men, women and children, from their homes across the seas. All their expenses were paid by the planters from the time they left their homes till they reached Honolulu. After they arrived here they were free to go where they pleased, but most all of them took the work offered them on the plantations, and are satisfied and doing well. On some plantations each family is given an acre or more of ground on which to grow vegetables, etc., and make a home.

Following their custom of returning to China as soon as they accumulate some money, or as they grow old, the Chinese have been leaving the islands or drifting into other lines of work, until now there are not many left on the sugar fields and thousands of Japanese went to the Coast States before the law preventing them was passed. The result is the sugar growers see a serious shortage of help in the near future unless something is done soon to induce others to come.

To raise the necessary funds to do this, a number of prominent planters appeared before the Territorial Legislature this month and asked it to pass a law levying a tax of two per cent on all individual incomes of $4000 or over. It is claimed

A Scene on Mr. Thomas' Plantation.

about $400,000 could thus be realized, and of this about three-fourths is to be used for immigration purposes and to balance expended in conserving the forests and water supply of the islands. It is proposed if possible to bring Europeans who will in time affiliate and become citizens, and thus help carry out the purposes of the National Government in Americanizing the islands.

Although this tax will have to be paid only by the rich, there is considerable opposition to it by some of the native members of the Legislature and a few cheap politicians who try to curry favor with the native vote. The natives say they are afraid if large numbers of possible citizens are brought in they will eventually rob them of their control of the islands at the polls.

Conservation.

To show the importance of something being promptly done towards conserving the forests and water of the islands, Mr. E. D. Tenny, a prominent planter, addressed the Special Legislature Committee and gave some figures on the artesian water consumption of the island of Oahu that I think would be interesting to the readers of the Cultivator.

Mr. Tenny first gave the area of the Island, the area of the cane plantations, and the water drawn, with water terms, Mr. Tenny showed

Island of Oahu Area is 600 square miles or	384,000	acres
Area of Cane Plantation about	37,500	acres
Daily Pumping Capacity of Plantations	351,250,000	gals.
Daily Pumping Capacity of Honolulu Water Works	11,250,000	gals.
Hawaiian Electric, Rapid transit, Hon. Brewing & Malting Co., Young Hotel, Hon. Iron Works Co., Oahu Ry. & Land Co., Pacific Fertilizer & Guano Works	4,000,000	gals.
Rice Plantations and Dairies, Individuals, Etc.	50,000,000	gals.
Total Daily Draft on Artesian System	416,500,000	gals.
Total Yearly Draft on Artesian System	152,022,500,000	gals.
or say, in round numbers	150.000,000,000	gals.
or	20,000,000,000	cu. ft.
or	429,137	acres

After presenting the situation in tabular form Mr. Tenny drew attention to the fact that outside the plantation wells and the Honolulu Waterworks the figures could not be absolutely accurate, as the exact number of wells supplying rice plantations and private places was not exactly known. These had to be estimated, but the figures given were considered very conservative.

Putting the figures in a popular form, as a million gallons does not mean much to the citizen not familiar with water terms, Mr. Tenny showed that the amount of water used from the artesian system alone on this island was equivalent to 1.2 feet or 14½ inches depth of water distributed over the entire area of this island.

To deliver the 416,500,000 gallons used daily would require a ditch 40 feet wide and 5 feet deep, flowing at a speed of 180 feet per minute.

The yearly supply would fill a lake three miles wide and 20 miles long and 10 feet deep.

The rainfall in Honolulu for the past 24 years, from 1885 to 1908 inclusive, averaged 29.28 inches.

Cotton.

The Hawaii Agricultural Experiment Station for a couple of years has been experimenting with different varieties of cotton, and from results obtained it gives promise of taking a prominent place in the islands' industries. The Sea Island and Caravouica "Wool" types give the greatest promise. The former is said to supply the highest quality of lint in the world, and brings twenty cents and upwards a pound.

(Continued on Page 407.)

P & O

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Planters, Listers, Cultivators
Stalk Cutters, Potato Diggers
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67 Years of "Knowing How" Hammered Into Every One of Them.

Over **1400** Different Styles and Sizes, to meet all conditions in all kinds of soil. Noted for Strength, Simplicity and Ease of Operation. We are the originators of many of the best known implements made, and the exclusive features are protected by patents. When you pay out your money **get the best.** Experiments are expensive. Insist on getting **P. & O.** implements from your dealer. A Beautifully Illustrated Pamphlet, and a P. & O. Catalog, will be mailed free on request. Remember P. & O. Canton Implements have been in the lead for over two-thirds of a century and are backed by an unqualified guarantee. **Ask for Catalog No. 123**

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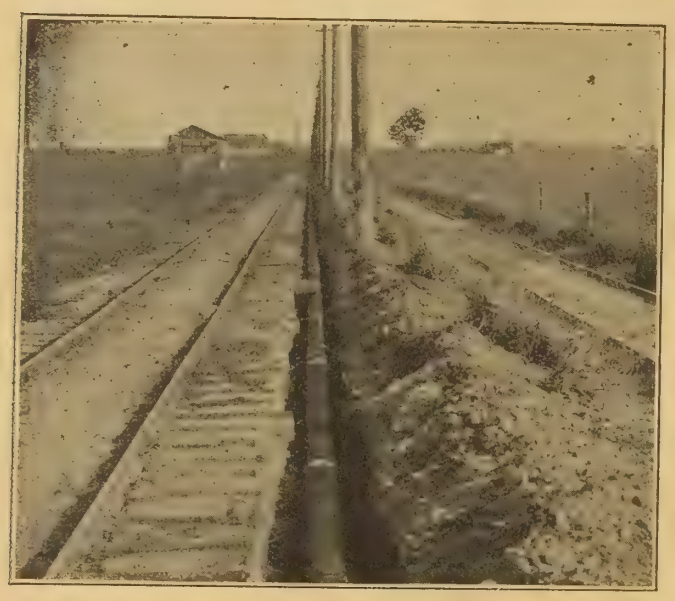

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2 Inches to 10 Ft Diameter

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The only positive eradicator of the SAN JOSE SCALE, RED and BLACK SCALE and other insect pests

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HAAS BARUCH & CO., " "

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Grower and Dealer in Citrus and Deciduous Trees of all Standard Varieties

Soft Shell Walnut Trees, 1, 2, and 3 years old. Grafted Placentia on Native Black Walnut Root and Soft Shell Root. Street and Ornamental Trees, Palms, Dracænas, Blue, Red and Sugar Gums (large stock.) Write for prices.

Sales Yard—Corner Sixth and Main
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who have used our goods once, will always come to us for their fertilizers. We are making a special study of plant life and are therefore in a position to manufacture fertilizers that exactly meet the requirements of each plant. Let us know what you intend to plant, and we will name your special compositions. Write for our new booklet "The Farmers Friend," for 1909.

THE PACIFIC GUANO & FERTILIZER COMPANY
268 East Market St., San Francisco, Cal.

Large Orange Seedlings for Orchard Planting

Eureka Lemons, Pomelos. Santa Barbara Soft Shell Walnuts, Phoenix Canariensis and Washingtonia Robusta Palms, Camphor Trees, Acacias, Roses, etc.

Southland Nurseries, F. H. Disbrow, Prop.

Phones: Main 949; Home 2520
PASADENA, CAL.

When writing advertisers, mention Cultivator.

With the Citrus Growers

THE REAL MENACE OF WHITEFLY

FROM the Jacksonville Times-Union we take the following which gives an insight into the true situation as to Whitefly:

It has been calculated by Prof. P. H. Rolfs that the whitefly population in mid-summer, of a fully infested umbrella tree of medium size, bearing about 20,000 leaves, may be 20,000,000 larvae. Dr. A. W. Morrill, basing his calculations upon a tree of similar size, gives an estimate of about 11,000,000. Both of these investigators, in order to be well on the conservative side, accepted the lowest figures of their calculations; whereas the average number of insects per leaf, according to their actual counts; would have given something like 70,000,000 to 80,000,000 as the number of larvae per tree. From this last estimate, it is evident that a large umbrella tree may harbor 100,000,000 or whitefly larvae at one time. Allowing a dozen large umbrella trees to a town, we may have upwards of 1,200,000,000 adult whiteflies coming out of these trees during the latter part of summer.

What Becomes of Whiteflies.

Careful observations have shown

A Great Aid to Fumigation

It is impossible to estimate the great benefit which the hydrocyanic-acid gas treatment has been to the fruit and especially the citrus industry of California. While it is not probable that the class of people engaged in the fruit industry here would have allowed their trees to have been destroyed by scale pests had not this treatment been discovered, it would yet have been far more difficult than it is with this effective remedy at hand. Spraying had the preference with many growers of Southern California for many years principally because of its greater economy and while it is yet much cheaper than the fumigation treatment, the latter has been so perfected and the methods of its application so much more thoroughly understood and applied that it is today by all means the best remedy for eradicating insect pests.

One of the most serious hindrances to its success in the earlier periods of its use was the unequal character of the cyanide used. It was soon determined that some applications burned the trees far worse than others. Methods of correcting this evil were studied by many, and many experiments failed. Different proportions of acid and water were tried all of which tended to perfect the system. Along another line chemists took up the study of the action of the acid of cyanide and also the quality of the chemicals.

Amongst those who have been of greatest assistance in developing along the lines of the chemical betterment, we may mention Mr. F. W. Braun, Los Angeles. Mr. Braun began studying this question as far back as '88. He soon succeeded in learning many of the mistakes which were being made by fumigators and for the past ten or eleven years the chemicals practically as used now have been at the command of the citrus growers, and largely because of Mr. Braun's investigations. Mr. Braun has been a persistent and a consistent believer in fumigation.

F. W. Braun, Los Angeles.

If this paper were contemplating a series of articles regarding men who have done things in a large way for the benefit of the citrus industry, the subject of our first article might well be of Mr. F. W. Braun.

Mr. Braun is now putting out an instructive circular on fumigation which he will be glad to mail on request. Write F. W. Braun, Los Angeles.

that these swarming millions of winged whiteflies deposit only a comparatively small number of eggs upon the leaves of the Chinaberry and umbrella trees at this time, but quit these trees and deposit eggs upon evergreen food-plants, principally citrus, privet and cape jasmine. Whether they do this instinctively, because the Chinaberry trees lose their leaves in the fall and winter, so that the larvae from any eggs laid on their leaves must die, or whether the leaves of these trees have developed some repellant quality; or whether the quitting of these trees is caused by overpopulation; does not affect the result. The fact is that these whiteflies swarm about and either fly or are driven by the wind for long distances many of them finding at last suitable plants on which to deposit their eggs.

Last summer the small citrus trees at the experiment station were free from whitefly; but in August and September thousands of whiteflies were hovering about and depositing eggs, so that by the end of fall these citrus trees were as heavily infested as citrus trees commonly become. The nearest infested trees from which the whiteflies could have come were umbrella trees in Gainesville about a mile away, so that the whiteflies had to travel at least a mile. That many whiteflies must have gone farther out into the country than the experiment station, can hardly be doubted considering the great numbers in which they were swarming about, not only on citrus trees, but on other plants, on clothing, windows and vehicles. The principal food plants in Gainesville and North Florida are Chinaberry and umbrella trees, there being only enough citrus, privet and other evergreen food plants to bring about the restocking of the deciduous trees every spring.

What Is To Be Done.

That hundreds of millions of winged whiteflies may become matured on Chinaberry and umbrella trees, and that these hordes of insects may swarm for the distance of at least a mile, and perhaps several miles, from their place of breeding is an established fact. Therefore these trees should be destroyed before next spring, and before they become infested again by the spring brood of whiteflies. They should be destroyed for three reasons.

1. Because these trees reduce the efficiency of all measures for the control of the whitefly by one-half or more, or perhaps nearly nullify them, by setting free swarms of whiteflies into the citrus trees at a time when the fruit is maturing and it is most desirable to have the trees free from whitefly.

2. Because in newly infested localities these trees are hastening the dissemination of the whitefly into the non-infested groves. Besides the spreading of the whiteflies from them through the air, teams are hitched under such trees and the vehicles become agents in carrying to other Chinaberry and umbrella trees, but which the team might again be hitched.

3. Because of the nuisance to man and beast from the myriads of whiteflies which frequently fill the air in whitefly infested sections. That this nuisance is principally due to the presence of Chinaberry and umbrella trees is evident from the fact that it occurs in sections where there are Chinaberry and umbrella trees, but where few or no orange trees are grown.

KEROSENE EMULSION.

From the slips handed out on the Demonstration Train to inquirers asking as to making kerosene emulsion, we quote the following directions as recommended by the State Horticultural Commissioner:

Coal oil (150° test)	4 gallons
Laundry soap	1 pound.
Water	2 gallons.

Dissolve the soap by boiling in the water, and when dissolved and while boiling pour with a dash into the kerosene. Churn the mixture for 10 or 15 minutes, either by pouring back and forth from one vessel to another, or by the use of the pump by pumping the liquid back upon itself. The emulsion should have the consistency of cream.

No. 1—For a winter wash when trees are dormant, use: One gallon of emulsion to six gallons of hot water.

No. 2—For a summer wash use: One gallon of emulsion to 10 gallons of hot water.

For black scale and peachtwigborer spray in December, January and February with No. 1.

For prune aphis, rose aphis and woolly aphis use No. 2.

All About the Orange and Lemon

Is told in our new book on Citrus Culture, embracing every phase of the subject from the seedling plant to the final disposition of the fruit in the Eastern market. The largest and best book on the subject ever printed—60,000 words, 100 illustrations. You will want a copy, which we will send you for the small sum of 25 cents. Remember we are the largest growers of orange and lemon trees in the world.

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This Ad and Get My Big FREE Book and Save $50

Buy direct from the biggest spreader factory in the world—My price has made it—Save dealer, jobber and catalog house profit. No such price as I make on this high grade spreader has ever been made before in all manure spreader history. Here's the secret and reason: I make you a price on one based on a 25,000 quantity and pay the freight right to your station. You only pay for actual material, labor and one small profit, based on this enormous quantity on a

GALLOWAY

Get my bran new proposition with proof—lowest price ever made on a first class spreader, with my agreement to pay you back your money after you try it 12 months if it's not a paying investment.

How's that for a proposition? If I did not have best spreader I would not dare make such an offer. 20,000 farmers have stamped their O. K. on it. They all tried it 30 days free just like I ask you to try it—30 DAYS FREE. **Five Sizes—including New Complete Steel Gear Spreader—70-bu. Size.**

Drop me a postal, and say—"Galloway, send me your new proposition and Big Spreader BOOK FREE with low prices direct from your factory."

Nobody can beat it. Freight Prepaid

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Fits Your Own Wagon — 1459 Galloway Station, Waterloo, Ia.

Orange Seed

Selected from choice groves. Can supply any quantity at reasonable prices.

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Orange Trees For Sale

Dormant buds, Navel and Valencia.

J. S. Killian, El Monte, Cal.
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FOR DRY SPRAYING

TO EXTERMINATE THE

Red Spider of the Orange

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RESUBLIMED FLOWERS SULPHUR

ABSOLUTELY PURE
FINE LONG FIBRE
FLUFFY AND VELVETY

Horticultural Supply Dept.

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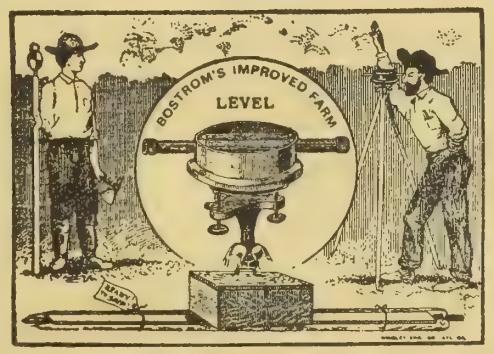
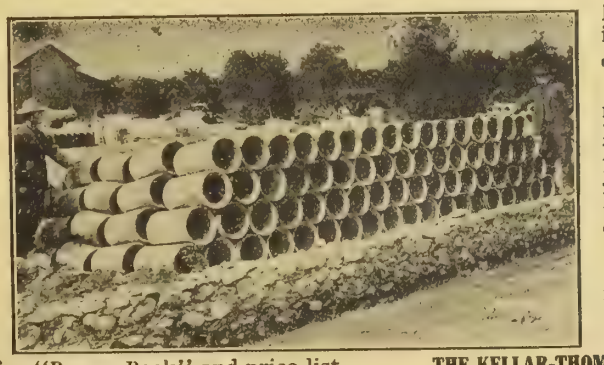


BOSTROM'S IMPROVED FARM LEVEL

Used for irrigation and drainage work. Cheapest and best level yet invented for farm use. Has the latest patented improvements in simplicity and usefulness. Can be operated by any one. Price including telescope tripod and target rod $15.00.

PALACE HARDWARE COMPANY
581 Market Street, San Francisco.
Coast Agents. Send for Circular.



From photograph showing amount of

Ten-Inch Pipe

made by four men from 10 bbls. of cement in 9 hours — 280 two-foot joints, or 560 feet. This pipe was made with the

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An equal amount can not be made with any other tools in the same period of time. Write for "Brown Book" and price list.

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One of the Finest Stocks of HARDY PALMS

in California is Now Offered for the First Time at the Lowest Possible Prices

You had best clip and preserve this as it may not appear again. This stock is located at 578 Orange Ave, Long Beach, Cal. and is easily reached by taking the "Redondo Ave." car at the foot of Pine Ave., Long Beach; alight at Descanso Ave. and walk three blocks north. Address

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ALL KINDS OF
STREET AND ORNAMENTAL TREES
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We can furnish palm and other ornamental trees eight feet high, which add greatly to the value of a place as soon as planted. We also have a large stock of Eucalyptus Globulus, Corynocalyx, Rudis, Rostrata, Tereticornis, Diversicolor, Robusta and Ficifolia. Our special eucalyptus circular, telling how we grow and handle our eucalypts by the Carroll method, mailed free.

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The Anaheim Evergreen Nurseries, Tim Carroll, Proprietor
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The oldest nurseries in Southern California, established in 1868 by present owner. Nurseries located 200 yards west of West Anaheim station (S. P. R. R.) Sunset Phone Main 413.

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Seeds That Grow Just Sow
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The best that grow
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Last Shot
20,000 E. Rostrata (Red Gum)
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$10.00 per 1,000 to close them out quick.
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Peaches 4 to 6 feet, $15.00 per 100; 3 to 4 feet, $13.00 per 100.
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All the Varieties No. 1 Trees
San Fernando Nursery Co.
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125 to 140 lbs. of Grapes to the Vine
Raised by Ex-Postmaster Rush Stevens of Sacramento on his ranch with
Tom Lewis' Fertilizer
My Fertilizer is lower in price than other fertilizers and guaranteed to give results. I have hundreds of testimonials. Send for circular and prices.
Tom Lewis, 1916 1918 10th St., Sacramento, Cal.

Grand Clean-Up
Satsuma Plums, $18 per 100. Bartlett Pears, $15 per 100. Peaches, $15 per 100.
Phillips, Orange, Henrietta, Tuscan, Winter Clings and Muir. Strong, fine first grade trees. We still have a good assortment of other fruit trees; persimmons, grape vines, raspberries and roses. Ornamental nursery stock all the year around.
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are Better Engines than you have been using.
See One Buy One
So will your neighbors.
Send for Bulletin No. 12
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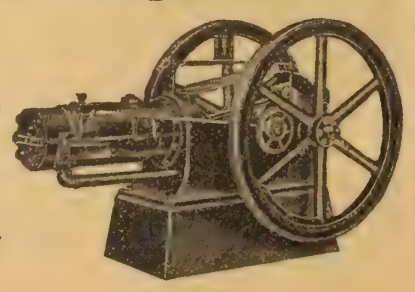


Deciduous Fruit Culture

By J. W. Mills

THIS YEAR'S APRICOT CROP.

THE Cultivator has begun to gather so far as possible at this date, the information in regard to the coming year's apricot crop. Various sections of the state have been written to and by another week we hope to have a liberal number of answers which will give a fairly good indication of the situation all over the state. From the number we have sent out a few given below have already been sent in. These are all from the southern end of the state excepting one from Mr. Coates at Morganhill. From these reports we would infer that the coming crop will be if not a bumper one, at least a good sized crop. With a fairly clear market it surely seems as if the returns should be good, and with the good crop promised must look good to every apricot grower in the state. From the replies so far received we quote:

G. H. Waters, Canner, Pomona, Los Angeles County.

There is a fine showing for apricots in Pomona valley, but the acreage is decreasing all the time. No new orchards are being planted to apricots, there will be 1000 tons of green fruit to market in Pomona valley this season unless something hapens to the crop very soon. Peaches are blooming very heavy.

J. A. Wilson, Secy. Chamber of Commerce, Santa Ana, Orange Co.

I have made enquiry as to the apricot crop of Orange county, and I find we will have a full crop, as the indications show today. Perhaps some orchards will have to be thinned, or the fruit will break the tree. Rain did not injure the crop at all.

Leonard Coates, Morganhill, Santa Clara County.

The apricot crop, except of Moorpark, promises fairly well about Morganhill, and it varies in the county from poor to good. It is too early to tell the effect on the crop of the present cold winds.

C. Thorpe, Cashier F. & M. Bank, Santa Paula.

Relative to the probable apricot output this coming season, will state that I believe we will have about 350 tons in the Santa Paula district and about 1300 to 1400 tons in the entire county. The trees are heavily loaded and the ground in fine shape and the fruit should be of fine quality and I believe will be good sized. The above estimate is for dried fruit.

CALIFORNIA RAISIN DAY.

The raisin men of California have decided on April 30th as "Raisin Day" and are organizing to make it a success. The co-operation and assistance of railroads, steamship lines, hotels, and mercantile establishments throughout California will be asked.

A meeting was held in Fresno on March 10th attended by representatives from over the Valley of the raisin interests and by representatives of the Southern Pacific Company.

At this meeting the Executive Committe of the Chamber of Commerce decided to raise $35,000 or more to tell in simple language just how much good it will do the average citizen to eat raisins and how to prepare them. This on Raisin Day, with the hope that hereafter they will help to dispose of the 25,000 tons of lucious fruit Fresno has on hand.

The campaign is not confined to California but is to be pressed vigorously throughout the East.

The Southern Pacific Company has agreed that all of its traffic forces shall work to make Raisin Day a success. In all of its stations, in all its suburban trains, in all its ferry boats, on all its Atlantic steamers, it will put up posters advertising Raisin Day.

On all Southern Pacific diners and in all eating stations raisins are to be served gratis on Raisin Day with compliments of the California Raisin Growers. The other Harriman Lines will co-operate and without doubt take similar action. The lecture bureau of the Harriman Lines in the East, under charge of Mr. J. W| Erwin, will have a series of lectures delivered on the use of California Raisins and the observance of Raisin Day, reaching probably 25,000 people.

The San Francisco hotels have already signified their intention of aiding, and will no doubt take concerted action.

A million raisin primers with recipes will be distributed over the United States, telling people how to serve raisins and instructing them in their uses. Every business man in California will receive a request to help observe Raisin Day by making his friends and patrons more familiar with one of California's choicest products. Altogether it is expected to discount Thanksgiving records on April 30th, and to make the people of the United States generally sit up and take notice of California Raisins.

Subsequently an advertising campaign will be undertaken to keep raisins to the front throughout the country.

RHUBARB ASSOCIATION.

The Southern California Rhubarb Grower's Association is making a persistent effort to market this product in a way so as to secure for its members compensation for their labor in growing this luscious product. The organization which was formed some weeks ago includes in its membership more than 95 per cent of the growers of the southern part of the state. The members are enthusiastic and it is believed that a successful basis of marketing will be reached by which fair returns may be had. A membership fee of only 50 cents is exacted from those who join and a sinking fund is to be made up of 2 per cent of the amount shipped by each member. The officers are S. D. Teel, Santa Ana, president; H. M. Bateman, Monrovia, vice-president; J. A. Holland, Santa Ana, Secretary. The directors for the remainder of this year are J. B. Wagner, Pasadena; C. R. Haines, Norwalk, A. L. Page, Chino. The year ends in September. The marketing will be largely in the hands of Mr. J. W. Beasley one of the large fruit and vegetable dealers of Los Angeles. The brand which has been adopted by the association announces in large type on the end of each box that the contents were packed by the Southern California Rhubarb Grower's Association and is "a product of Southern California, unequaled for sauce, pies, jellies, jams and fine confectionery." The association is worthy the ablest support of the rhubarb growers and will, we believe, lead to greater profits to the entire industry.

HAWAIIAN PRODUCTS.

(Continued from Page 403.)

The Caravouica, of which there are several types, was originated in Queensland, Australia, eight or ten years ago, and is said to be a cross between two strains of Sea Island cotton. Although the quality is not quite so good as the Sea Island, the percentage of lint to seed is much higher. Offers have been received here of from 16 to 23 cents per pound for all that could be supplied of this cotton. It is thought this crop can be profitably grown in the islands as a perennial. Individual cotton trees ten years old and over have been reported in different parts of the islands. A test picking of the Caravouica was made at the Station last August which gave a yield of over five pounds seed-cotton per plant. At that rate, figuring 625 plants to an acre, and 20 cents per pound, the value of crop would be $625 an acre.

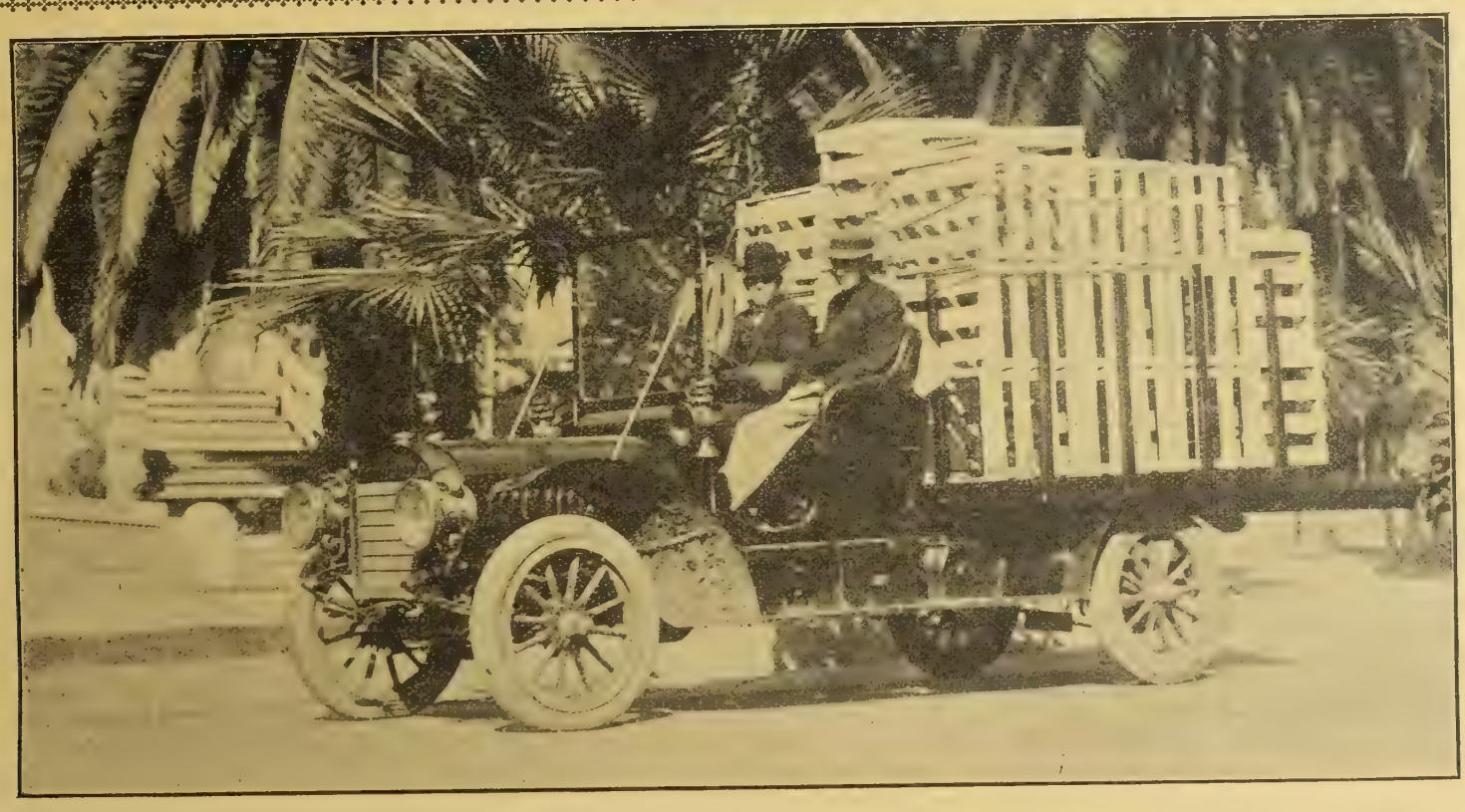
There are thousands of acres of land unfitted for any of the crops now grown that are admirably suited for cotton, and since a great many individual experiments are being made of from one to fifty acres, in a year it will be known just what can be done with it in the regular way.

The Luscious Pineapple.

Pineapples, a comparatively new crop, are firmly established now, and eight or ten thousand acres are devoted to them. Last year's output of canned pineapple amounted to 400,000 cases of two dozen each. The quality is as much superior to that grown in other countries as a Riverside or Redlands navel orange is to a coast seedling, and in order to let the public know it and to increase the consumption the Pineapple Growers' Association the first of this year started a systematic campaign of advertising in the leading magazines of the country. About $35,000 has been expended so far, with gratifying results, and it is intended to continue the work indefinitely. Each member of the association is assessed in proportion to the number of cases he packs.

Heretofore pineapple has been looked upon as a luxury by the majority of the people; to be eaten only on special occasions, but now this delicious fruit can be bought at prices no higher than is asked for the same grade of peaches, apricots and other fruits. There are nine canneries in the islands, all located on or near to the fields. The pines are left on the plant until fully ripened and canned the same day. Practically all the work in the canneries is done by machinery,—the paring coring, sizing and slicing,—and every employee handling the fruit wears rubber gloves, so that from the time the pines enter the cannery until they are in the cans they are untouched by human hands.—W. B. Thomas, Wahiawa, Hawaii, March 18, 1909.

Owners of 850 acres of orange trees at Riverside have combined to buy fumigating outfits.



RAMBLER AUTO TRUCK WITH LOAD OF GARDEN PRODUCE.

Along the San Fernando road, near Los Angeles, California, people who get up at daylight frequently see a large commercial vehicle rolling smoothly along with a ton of boxes and crates piled high up on the body. In these boxes and crates are celery, apples, beets, onions, potatoes, lettuce, cabbage and cauliflower.

This auto truck is a Rambler Chassis with a special interchangeable body built in Los Angeles.

J. Q. Adams, of Eagle Rock, has adopted this method of making his morning deliveries of garden produce in that section. This market gardener has been using three wagons to transport his merchandise, but found that in muddy weather there was a great loss of time on the road. The car is making good and carries three ordinary wagon loads of produce at a faster rate than a horse-drawn vehicle could make a single trip with one-third of the load.

The car has a forty horse power motor and is driven with side chains. The tonneau of the car has been removed, the frame lengthened fifteen inches, thus giving the car a wheel base of 127 inches. Solid tires have been placed on the rear wheels and the car has a capacity of a ton or more.

CONGO NEVER LEAK ROOFING FREE SAMPLE

A Genuine SURETY BOND GUARANTEE with every roll of Congo

So many guarantees are given nowadays that to a certain extent they have lost their value; but the one which accompanies each roll of Congo is different from all others.

It is a genuine Surety Bond backed by the National Surety Co., one of the largest and best known Surety Companies in this country. It protects you absolutely.

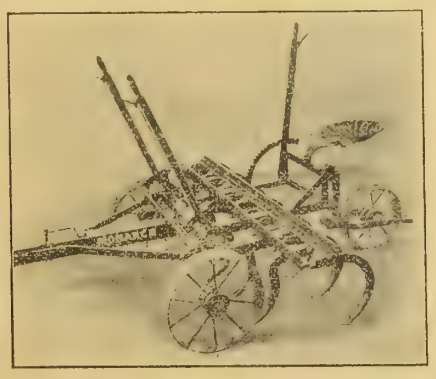
It is a distinct, clear-cut guarantee, and any man who desires the best roofing for his money, and wants the same backed by a reputable house as well as by a Surety Bond, can do no better than invest in Congo.

Samples will be sent for the asking, and we know if you test it thoroughly, as a roofing should be tested, there will be no hesitation on your part in securing it quickly.

Further information, samples, etc., on request.

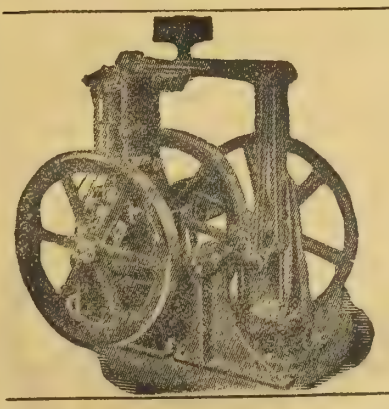
UNITED ROOFING AND M'F'G CO.
Successors to Buchanan Foster Co.
CHICAGO 567 WEST END TRUST BLDG., PHILADELPHIA, PA. SAN FRANCISCO
Blake, Moffitt & Towne, Los Angeles Agents

OUR MONARCH CULTIVATOR



Is designed for heavy work. Has great clearance (17 in.) between front and rear standards, which permits the working of trashy or lumpy ground, and lightens draught. While designed more especially for field use, it is now becoming a favorite among orchardists where deep cultivation is desired. By the arrangement of levers it can be carried level or deeper on one side if desired. Write

Killefer-Griffith Mfg. Co
1336 Palmetto Street.
LOS ANGELES, - CAL.



A Handy Little Engine

Just the thing to run the feed cutter, the pump, the churn, the grinder, or anything on the ranch. It's well named

The Little Wonder

Write or call on

Wm. Gregory
602 No. Main St. Los Angeles, Cal.

When writing advertisers, mention Cultivator.

C. C. Morse & Co.

Seeds Plants Trees

Seasonable Plants and Trees

We have a good stock left of the following, all of which can be planted out with safety until the latter part of April:

Monterey Cypress	Laurustinus
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Casuarinas	Pimellia Decusatta
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Spruce (all kinds)	Arbor Vitaes
Japanese Privit	Pepper Trees
Grevilleas	English Holly
Magnolia	New England Flax

Palms of All Sorts

If Interested in large lots of the above, write us. REMEMBER:—We are headquarters for ALFALFA, CORN, BEANS and MELON SEEDS; all kinds of Vegetables, Flower Seeds, Grass acd Clover Seeds.

C. C. MORSE & CO.

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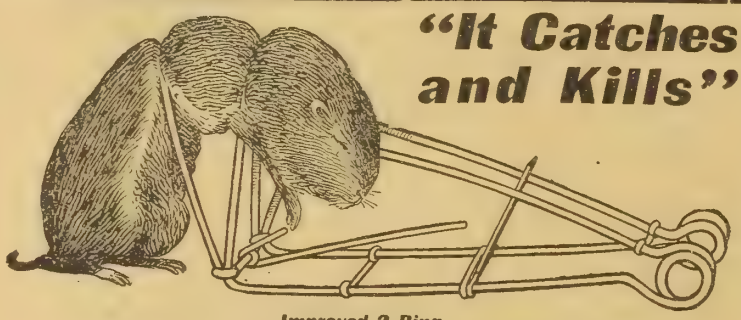

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Improved 2-Ring

C. V. GOPHER TRAP

Impossible to squirm out. Two rings and a set of sharp claws sieze and instantly disable the animal and cause almost instant death. A perfect trap—no other ever used where the improved "C. V." is once introduced. Superior construction, non-rusting finish. If your dealer has n one, send us his name and 25c for one or $2.50 for a dozen, post paid.

FALLS MFG. CO., Factories, San Francisco

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TREES PLANTS BULBS

If you are interested in the Best Seeds, Etc., write for our 1909 Seed and Plant Annual, which we will mail to you free. Please mention this paper.

Trumbull Seed Company

Successors to Trumbull & Beebe

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SEED

75 varieties of Sweet Peas Separate Colors, 5c per Pkt. 15 Leading Varieties, post paid, 50c. 4 Varieties, that bloom in 45 days, 25c. This is the besttime to plant.

Onion Seed First Quality Yellow Danvers and Australian Brown for Main Crop. Germination over 95% by test. Per lb $1.75.

Get Our New Catalogue

Eucalyptus All the Leading Varieties in seed @ 15c per package, (Six of the leading varieties, E. Rostrata, E. Leucoxylon, E. Rudis, E. Globulus, E. Corynocalyx, and E. Tereticornis for 50c, with cultural directions). 500,000 Plants, all varieties. State your wants and get prices. Send 10c for large packet each of our new Cabbage Head Lettuce, King of May and Brown Dutch, earliest and finest flavor.

MORRIS & SNOW SEED CO. 425 So. Main Street Los Angeles, Cal.

Sweet Potato Plants

All kinds of Sweet Potato Plants in any quantity. $2 per thousand.

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EUCALYPTUS We have all the leading varieties

VIGNOLO EUCALYPTUS NURSERY, Anaheim, Cal.

Small Fruits and Vegetables

AS TO VEGETABLES.

THE list of vegetables generally used for table comprises nearly 100 varieties. Each of them is grown in some locality, grown and used with profit. Perhaps not one gardener in the United States grows them all, and very few grow as many as fifty sorts in the same season. There are a dozen leading products of the vegetable garden, which should be found in every farm cellar in the winter, yet as a rule very few carry over five or six in stock. And the number of families fully satisfied with two, the ever-present potato and cabbage, is legion.

The use of vegetables, as other foods, is largely a matter of habit. We get into ruts, and do not care to try new things. And yet all these different vegetables have a special value, if we fully understood it. Some of them answer the same purpose as drugs, only doing the work better, cheaper and more pleasantly. Spinach, kale, mustard and dandelion, are needed in the spring. They act on the kidneys, and purify the blood. Lettuce contains enough opium to be soporific. Onions and cabbage used in moderation cleanse the system, quiet the nerves and many times forestall the need of a physician.

Celery for the nerves has an established reputation. Asparagus and parsnips, cucumbers and radishes, beets and squash, green corn and beans, each in its season, supplies something for the physical system, some needed help which is not found so conveniently in any other form.

It is worth while to educate ourselves into the more frequent use of all of these aids to health. Health, individual and national, would be better, if we depended less upon the butcher, and more upon the gardener, for our table supplies.

We have good examples before us in Japan and Italy, which are practically vegetarian nations. Very little meat is consumed there by the masses of the people, yet they are strong, vigorous and healthy peoples. The art of properly cooking vegetables is not as yet fully mastered by many cooks, who are experts in other lines of cookery. The best practice is to put all vegetables on to cook in boiling water, and in uncovered kettles. If covered they cook too rapidly and the flavor is lost. Use salted water for fresh vegetables, except for those that grow underground. In the latter case salt is apt to harden them. Too fast cooking toughens the fiber and makes them tasteless. If vegetables change color it indicates improper cooking.

THE STRAWBERRY.

The strawberry has been under cultivation for centuries but systematic attempts at improvement are of comparatively recent date, extending back a little more than 200 years in Europe, and only about half a century in America. The earliest horticultural variety of which there is any account is the Fressant, which dates from 1660. Wild species of strawberry are few in number, certainly not more than a dozen, and only a part of these wild forms have ever been brought into cultivation. Nevertheless, so wide has been the variation under cultivation, that at the present time there is the anomaly of a fruit, appearing within a little more than a century, which the botanist does not refer to any species. Here then is a remarkable and practical example of experimental evolution. The history of this evolution has been fully worked out by Bailey, and a few brief notes of his investigations are given in this connection.

The systematic improvement of the strawberry began in England. The first foreign species to reach Europe was Frageria virginiana, the common field species of New England and the whole Atlantic coast. This is recorded in 1624, but does not appear to have varied greatly, and never found favor on the continent.—Green's Fruit Grower.

THE EVERGLADES.

The most successful growers of tomatoes and vegetables in Dade county have been those men who have farmed along the edge of the Everglades.

They are now experts in the culture and their opinion is the most valuable of any now available on the practical value of the draining of the Everglades, considered as a whole.

A careful investigation has been made among that class of growers, and they are almost a unit in opposing any general drainage plans.

They have come to believe that after years of observation and experiment, that they are protected by the waters on the Everglades and that the continual rise and fall of the waters, varying from times of drought to times of heavy rainfall, has a good effect on the soil, and that thereby their crops are enlarged.

Permanently removing the waters of the Everglades would destroy the vegetable raising of Dade county upon which the prosperity of this section has been built up.

The substitution of cane raising is a doubtful experiment at best, and its adoption would certainly destroy one great industry without replacing it with one whose success is positively assured.—Ex.

VEGETABLES IN THE KLONDIKE.

Dawson is to be credited with the discovery of the agricultural possibilities of the great valley of the Yukon.

A few seeds were first brought into the country by some of the "old-timers" who did not expect them to amount to anything.

They were planted on the sunny side of a cabin roof and they created a great deal of surprise and joy when they grew into an abundant supply of radishes and lettuce.

Today, hundreds of acres in the Klondike are being tilled and the vegetables grown are as fine as can be—equal to those that can be found anywhere in Canada.

The potato crop alone was over two hundred tons and the farmers and gardeners expect to double their potato acreage this year.

The territory of Arizona has appropriated $5,000 for the erection of a monument on the brink of the Grand Canyon in memory of John Wesley Powell of the U. S. Geological Survey. Mr. Powell was one of the first explorers to ever investigate the Grand Canyon of the Colorado.

Berry Plants

Buy direct from the farm. Strawberries, Black and Red Raspberries, Giant Himalaya Blackberry, Burbank's Phenomenal Berry, Mammoth Blackberry, Logan Berry and Dewberries; also Burbank's Crimson Winter Rhubarb.

Our catalogue is free and tells you how to grow berries of all kinds. Address

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Into New York, Philadelphia and other Eastern Markets
WE UNDERSTAND
Eastern Conditions, Eastern Markets, Eastern People, their Likes and Dislikes

We do not dump our goods on the eastern commission houses and take a chance on getting a price. No! We go right out and create a demand among the high grade dealers under a special brand. Our representatives are working among the eastern trade all the time. Every grower and shipper should write us for information about our methods of introducing CALIFORNIA Products under a guaranteed label.

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CRIMSON WINTER RHUBARB

$1.50 a Dozen, $6.00 per 100, $40.00 per 1000 March, April & May, best time to plant Rhubarb.
Berry Plants of All Kinds.

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Rhubarb and berry specialist

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Balled in moss and leaf mould. Need less water and can be planted later. Uniform size and being balled have fine roots. Fine to grow. Boxes of 100, sample lot, in flats and protected tops, only $1.60. Try them and you will use no other. Write for circular and special prices on large lots.

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Pacific Seed Co.

C. Bagnall, Prop.
GROWERS AND IMPORTERS OF
Grass, Vegetable and Flower Seeds
All Kinds of Bulbs and Onion Sets
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Send for Catalogue. Please mention Cultivator.

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Gypsum will make available the plant food in your soil and bring good returns through small investment.
Wonderful Soil Corrector
Write for prices in car lots.
Acme Cement Plaster Co.
750 So. Alameda St. Los Angeles, Cal.

The Ornamental Garden

BULBS IN GLASSES.

Culture in glasses is no doubt the most interesting, and at the same time the least troublesome. Considering the price of really good bulbs it is a great wonder that they are not in every home. We periodically hear of many societies and charitably inclined individuals, giving out seeds free to children, to stimulate a love for plants, and when their plants have matured prizes are given to the most successful. We have not as yet heard of them distributing bulbs; and we offer the suggestion. It might be a trifle more expensive, but homes would be made brighter in winter; when even a green thing in a crowded tenement is a welcome sight.

The influence that this touch of nature exerts on the young mind is not at all, or only very little, considered or understood. The writer is placed in a better position than many others to study this.

The young mind is at its most receptive period, and is daily craving for excitement, or outlet for its animal spirit. Our reformatories, and truant schools are full of young boys and girls who have been deprived of some ennobling influence, whose animal natures have got the upper hand for lack of something that would interest and stimulate, in many cases, an abnormally active mind.

The proper channel has been withheld or denied, and the only channel left open—usually the street—has been the means of nearly every downfall.

From actual experience boys and girls that are incorrigible when kept at an indoor occupation, have become tractable, nay, even dispassionate, lovable and pliable when allowed to work among flowers and nature's surroundings; all of which goes to prove that the nearer you can keep to nature the less desire there is for the exercise of animal passions.

But we are digressing; this is a cultural article.

For culture in glasses the most suitable subjects are single "Hyacinths," "Chinese Sacred Lily," and "Polyanthus Narcissus."

Suitable glasses must be procured. They have a bowl-shaped cavity at the top, and the neck below this is contracted to keep the bulbs out of the water. Many object to this formal style of glass, and others cannot afford to buy them for this exclusive purpose. Any to whom these objections apply can use instead an ordinary bowl, and if expense be not the obstacle, any kind of a glass, or crystal dish such as is used for dessert, will also be suitable.

First fill up such a dish with (preferably white(stones—marble chips. If such cannot be got conveniently, any other kind of stone or pebble will answer the purpose, and also a few pieces of charcoal to keep the water sweet.

Fill up with water almost to the top, then set in your bulbs. It will depend upon the size of your dish how many bulbs it will hold. If it measures 6 inches across at the top it will hold 4 bulbs; if 8 inches, it will hold 8 or 10, and so on. Have the bottom of the bulbs as close to the water as possible without touching it, and put a few more stones around them to keep them in position.

Put them away in a dark, cool place until they have made six or eight inches of root growth, then bring them out in the room and stand them near the window. As the water gets used up, keep adding more, and also some fresh pieces of charcoal to keep the water pure.

When the dish is full of roots and the flower spikes are pushing ahead, one or two drops of household ammonia may be given about twice a week. This will help the flowers considerably.

By having several dishes in use, and starting them one at a time, with an interval of one or two weeks between, a continuous lot of flowers can be had all winter. Start with the early varieties first. Your bulb merchant will tell you which they are, or you can find out for yourself in the catalogue.—Gardening.

THE SURROUNDINGS OF OUR HOMES.

In traveling through a farming country one usually sizes up the occupants of a farm house by the neatness, or lack of it, evidenced by the surroundings. A little old house, with neat fence, clean yard, a few trees and a nice green lawn may look far more homelike than a large imposing looking house with confusion reigning around. The ash pile need not be near the door, nor an old stack of broken machinery near the front gate, nor need the hitching post be too close to the house. Trees grow so rapidly under irrigation that every one can have a few. To my mind they are indespensible to the home.

Next thing after trees, or perhaps before them, is a grass plot around the house. Blue grass and white clover seem to be the best combination here. The grass is the nicer alone, but the clover more hardy, and more easily and quickly started. Then let us have a few clumps of shrubs and flowers scattered around through it. Dahlias do very well, asters also. Cosmos make a showy clump for late summer and fall, but is a little too easily grown, and I fear may spread more than we like if we do not watch it carefully. When a climbing rose will grow vines eight or nine feet long the first year one need not lack for shade over windows and porch. The ramblers are so easily propagated by layering them. And a few grape vines cover a walk to the well or cave so nicely and give fruit the next year after planting.

LICE ON ROSES.

The lice on your rose plants can be gotten rid of. Dip the bush in water slightly warmer than the hand will bear, repeating the treatment several times at intervals of a day or two.

Dusting thoroughly with tobacco powder will also be effectual.

The white and green lice which attack the tender rose plants early in the spring may be destroyed by hot suds from the Monday's wash. Dash it on from different angles, as hot as can be handled, and the pests will disappear.

Such an application once a week will keep the foliage clean and promote the growth and health of the plants.

On extensive grounds where the grouping of shrubbery becomes an important factor in the architecture of the place, curved walks and circular drives are most pleasing and effective.

SEEDS

Of Superior Quality

A large assortment of choice Garden, Flower, Tree and Palm Seeds.

Roses, Carnations
and other Flowering Plants.
Fruit Trees
and Berry Plants, all the leading sorts.
Eucalyptus
Seed and Trees.
Ornamental Trees and Shrubs.
Catalogue mailed free upon application.

Theodore Payne
SEEDSMAN and NURSERYMAN
345 So. Main Street
Los Angeles, Cal.

The Seed House
OF THE
Great Southwest

Just received, one carload of **Eastern-grown Seed Corn,** and our **Colorado-grown Cantaloupe seed.** We have three strains, the **Eden Gem, Netted Rock,** and **Solid Net.** All of these have been tried, and proved more satisfactory than any other strains of the **Rocky Ford.** Dealers and Associations are requested to write for special prices.

Our carload of **Corn** consists of the several varieties best suited to the different sections of the Southwest. See page 112 of our catalog for description, and write for prices on large quantities.

Aggeler & Musser Seed Co.
113-115 No. Main St., Los Angeles, Cal.

300,000 Eucalyptus

Fruit Trees
Shade Trees
Roses Shrubs
Palms Ferns

And everything that you need for your ranch or garden. Send for free catalogue

Sycamore Grove Nurseries
SAINT & WARNER
4584 Pasadena Ave. Los Angeles

Vigorite Brand Hydrated Lime

Our **Hydrated Lime Department** is constantly gathering practical and scientific data on use of **Hydrated Lime** as soil **Fertilizer, Dust spray, Etc.** which is at your disposal. References furnished showing great **Efficiency** and **Economy** in its uses. Correspondence solicited. Write for sample and prices to

The Holmes Lime Co.
Incorporated
Mutual Savings Bank Building, San Francisco

Seeds & Plants

Write for free Catalogue.
Germain Seed & Plant Co.
326 So. Main Street, Los Angeles

BOOK ***ON***
DOG DISEASES
AND HOW TO FEED
Mailed FREE to any address by the author.
H. CLAY GLOVER, D. V. S., 118 W. 31st St., New York

Edison Phonographs, Victors, Zonophones
Records and Supplies, $10.00 orders delivered at your nearest railroad station upon receipt of full retail price. Write for catalog.
Peter Bacigalupi & Sons, 941 Market St. San Francisco

Legal Queries

Edw. L. Payne, attorney, 301-304 Douglas Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Payne is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Chattel Mortgage.

Will your query department please inform me as to whether a chattel mortgage holds after its maturity, and if so how long? The mortgage in question matured more than a year ago, but almost monthly or at least occasionally there has been paid various amount on the note. Does this renew it and is it perfecly safe to allow such a matter to rest without having a new mortgage made and recorded?—M. B., Los Angeles.

A chattel mortgage executed within this state holds for four years after maturity. Payments, monthly or otherwise, do not renew a promissory note. It is safe, so far as your right to enforce payment is concerned, to let the note and mortgage stand without renewal.—E. L. P.

Telephone Poles.

What can a property owner do to get two telephone poles removed from his property; they are about 30 feet inside the propery line, are there for several years (less than five). The Home Telephone Company and the Sunset Telephone Company say they do not think they own the poles and give no satisfaction to an order given to them to remove the offending poles. Can the property owner cut them down or dig them out, or burn them?—J. H.

Inasmuch as the poles constitute a private nuisance, the owner of the property upon which they stand has a right to remove them without unnecessary damage or to bring an action for ejectment. He should not burn them or cut them as that would be inflicting unnecessary injury on the company.

Waste Irrigating Water.

Can a railroad company or other property owner prevent me from running waste irrigation water from my land on the right-of-way, or other land, when there is no other place for the water to run? Before this railroad was built this irrigation water was run on and across what is now the right-of-way, and said railroad failed to provide an outlet through right-of-way for this waste. It has been more than five years since the road was built, and during all that time waste water has been running on the right-of-way and no legal steps have been taken to prevent it.—A subscriber.

Generally speaking, you have no right to turn waste water onto another's land to his damage.

If the water has been running uninterruptedly and without objection on the part of the railroad company for five years, and you have during that time claimed the right to have it run on the company's land, you now have acquired the right to run the water as heretofore.—E. L. P.

In addition to the attorney's answer, we may add that usually water is too valuable to waste on another's land. There are methods of irrigation by which such water and the fertility it carries off may be saved. —Ed.

Right of Way for Ditch.

I am pleased to see a space given for legal questions in the Cultivator. According to a recent paper, B would have a right of way after five years' use for water ditch. Can B get a statement in writing to that effect from A for right of way? Can B make A fence said right of way from stock? Suppose there should be a mistake in surveying and the ditch moved to correspond with the new survey (supposed to be on the line between two pieces of A)? Should B get a right of way from A for the new ditch before the old ditch was given up? Where can I get laws governing water rights of California?—A Subscriber, El Centro.

B can only get such writing as A is willing to give.

Generally speaking, it is B's duty to maintain his right of way, and he may go upon A's land for the purpose of keeping it in repair. A has no right to damage B's way; but A cannot be required to fence from stock if the stock only damage the ditch in the course of using the land in the ordinary methods, as for pasturage. And if the injury is negligently caused, your action would be for damages; you could not compell A to fence.

B should, by all means, get A's consent to move the ditch, as one has no right to change the location of a ditch on another's land after it has been once located by user of grant. I know of no compilation of the water laws of California. They are scattered through the codes and court reports. Well's Water Rights in Western States might be interesting and instructive.—E. L. P.

Railroad Right-of-way.

Has a railroad which has been in existence for over forty years, and with a right-of-way two hundred feet wide, any right to condemn land in order to lighten grades and shorten the distance, on the plea of wanting a double track?—Subscriber, Auburn.

The length of time the road has existed is not material, but perhaps the fact that its right-of-way is 200 feet wide would indicate that there is no necessity for more land in order to lay a double track. The right to condemn private property can be exercised when necessary, and at any time the railroad company can show that the location of the road can be improved. The question, as to whether the exigencies of the public can be adequately met and provided for in any other way, than by condemnation of the particular property sought, is generally determined in favor of the railroad, as it is regarded as a quasi public corporation.—E. L. Payne.

Executor Selling Property.

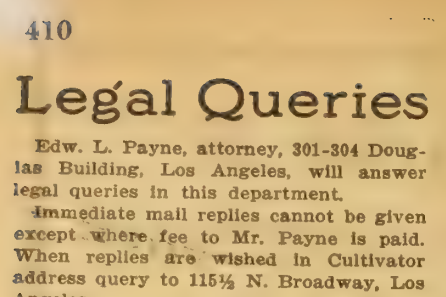
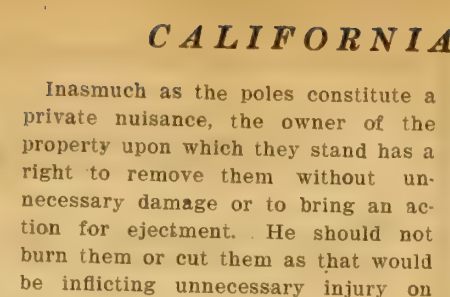
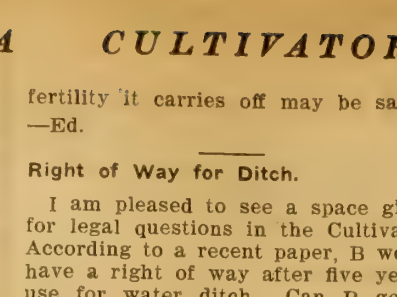
I will my real and personal property to my wife and children to share equally and I make my son executor without bonds, does the law permit him to dispose of property before my youngest child becomes of age?—J. J., San Diego.

The executor may, with the consent of the probate court, sell property at any time before the estate is distributed if necessary to pay debts of the estate or decedent, expenses of administration, or if for the best interests of the state.

Excess Land.

I bought the north half of a 40 acre tract on Contract. The seller thinking he was selling me 20 acres. It turns out that the 40 acres over runs. Do I have to pay for the excess.—A. J. B.

If both vendor and purchaser thought that only 20 acres was being sold and by mistake the description included more, the purchaser has no right to the excess; but if the description calls for the North half of a certain lot of land and there are no words limiting the amount conveyed and both parties intended the deed should convey a half, whatever that might be, the purchaser then retains all conveyed. Again, if the purchaser knew that the deed called for more land than the vendee intended to convey and permitted him to make the deed thinking it called for less, the purchaser has no right to the excess without paying for it.—E. L. Payne.

Implements for the Ranch

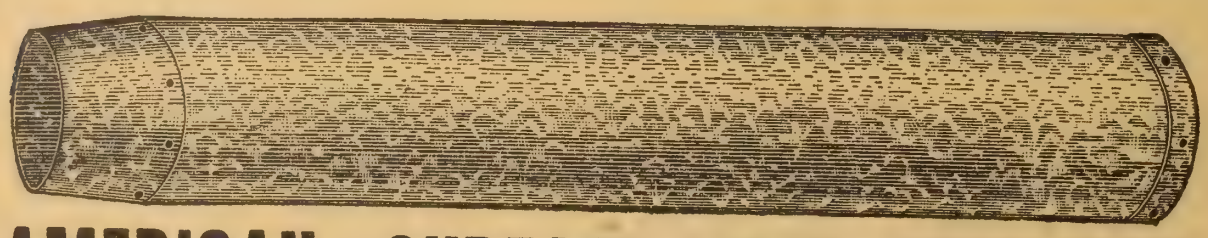
We can supply **everything** that is needed in ranch implements. You can't afford to buy without first getting our prices and inspecting our goods. Note the following—a few of the excellent lines we carry. Is there not something in the list you need? If you can't call, **write** us. **Do it today.**

Deering Mowers
Deering Rakes
Deering Binders
Deering Reapers
Deering Headers
Deere Plows
Deere Harrows
Deere Cultivators

Dain Buck Rakes
Dain Stackers
Dain Hay-loaders
Southwick Hay-presses
Western Steel Hay presses
Dain Hay presses
Buckeye Fertilizer Drills
Buckeye Grain Drills

Schuttler Wagons
Burg Wagons
Winona Wagons
Farmers Handy Wagons
Great Western Manure Spreaders
Dicks Feed Cutters
Hay Forks and Carriers
Carriages and Harness

Hawley, King & Co. 224-228 South Los Angeles Street Los Angeles, California



AMERICAN SURFACE IRRIGATION PIPE

SAVES WATER, GRADING AND TIME

The **only** way to **Irrigate Alfalfa. Cheaper** than **Flumes.** This is only **one** of our **specialties. We make Riveted Water Pipe** in lengths of **ten feet** from **single sheets.** Let **us prove** to you that **we make Pipe** and **Tanks right.** WRITE FOR CATALOGUE.

AMERICAN STEEL PIPE & TANK COMPANY

FORMERLY TALLERDAY MANUFACTURING COMPANY

636-7 Pacific Electric Building **Los Angeles, Cal**

ROOFING GUARANTEES.

When a maker guarantees his roofing, it merely mean that he puts his claims for it in writing, and if there is any dispute afterwards, there are thousands of way in which the maker can evade responsibility if he chooses.

The makers of Congo Roofing, however, have devised an interesting plan which gives the buyer absolute protection. With each roll of roofing is furnished a Surety Bond issued by the National Surety Company of New York, guaranteeing the faithful performance of the guarantee by the manufacturers. This gives to any possible complainant a Court of Appeals to which he can go, over the head of the manufacturer. In fact, this guarantee bond so pledges that if the manufacturers of Congo Roofing should go bankrupt or close out their business, the Surety Company would still continue to guarantee the reliability and satisfaction of Congo Roofing. The guarantee on the three ply is for 10 years.

A copy of the Guarantee can be obtained by addressing the United Roofing and Manufacturing Company, Philadelphia, or Blake, Moffitt & Towne Los Angeles, Cal.

Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

By Mrs. Minna E. Sherman

ANTHRAX IN CATTLE.

ANTHRAX, or charbon, may be defined as an infection disease which is caused by specific bacteria, known as anthrax bacilli, and which is more or less restricted by conditions of soil and moisture to definite geographical localities. While it is chiefly limited to cattle and sheep, it may be transmitted to goats, horses, cats, and certain kinds of game. Smaller animals, such as mice, rabbits, and guinea pigs, speedily succumb to inoculation. Dogs and hogs are slightly susceptible, while fowls are practically immune. The variety of domesticated animals which it may attack renders it one of the most dreaded scourges of animal life. It may even attack man.

Cause.—The cause of anthrax is a microscopic organism known as the anthrax bacillus. In form it is cylindrical, or rod-like, measuring 1-5000 to 1-2500 inch in length and 1-25000 inch in diameter. Like all bacteria these rod-like bodies have the power of indefinite multiplication, and in the body of infected animals they produce death by rapidly increasing in numbers and producing substances which poison the body. In the blood they multiply in number by becoming elongated and then dividing into two, each new organism continuing the same process indefinitely. Outside of the body, however, they multiply in a different way when under conditions unfavorable to growth. Oval bodies, which are called spores, appear within the rods, and remain alive and capable of germination after years of drying. They also resist heat to a remarkable degree, so that boiling water is necessary to destroy them. The bacilli themselves, on the other hand, show only very little resistance to heat and drying. It has long been known that the anthrax virus thrives best under certain conditions of the soil and on territories subject to floods and inundations. The particular kinds of soil upon which the disease is observed are black, loose, warm, humous soils, also those containing lime, marl, and clay, finally peaty, swampy soils resting upon strata which hold the water, or, in other words, are impervious. Hence, fields containing stagnant pools may be the source of infection. The infection may be limited to certain farms, or even to restricted areas on such farms. Even in the Alps, over 3,000 feet above the sea level, where such conditions prevail in secluded valleys, anthrax persists among herds.

Aside from these limitations to specific conditions of the soil, anthrax is a disease of world-wide distribution. It exists in most countries of Europe, in Asia, Africa, Australia, and in our own country in the lower Mississippi valley, the Gulf states, and in some of the eastern and western states. It seems to be gradually spreading in this country and occurs in new districts every year.

Meteorological conditions also have an important share in determining the severity of the disease. On those tracts subject to inundations in spring a very hot, dry summer is apt to cause a severe outbreak. The relation which the bacillus bears to these conditions is not positively known. It may be that during and immediately after inundations or in stagnant water the bacilli find enough nourishment in the water here and there to multiply and produce an abundant crop of spores, which are subsequently carried, in a dry condition, by the winds during the period of drought and disseminated over the vegetation. Animals feeding upon this vegetation may contract the disease if the spores germinate in the body.

Another source of the virus, and one regarded by many authorities as perhaps the most important, is the body of an animal which has died of anthrax. It will be remembered that in such bodies the anthrax bacilli are present in enormous numbers, and wherever blood or other body fluids are exposed to the air on the surface of the carcass there the formation of spores will go on in the warm season of the year with great rapidity. It will thus be readily understood how this disease may become stationary in a given locality and appear year after year, and even grow in severity if the carcasses of animals which have succumbed to it are not properly disposed of. These should be buried deeply, so that spore formation may be prevented and no animal have

Sheep Grazing on National Forests.

Squelching One Of The Users of Abandoned DE LAVAL Cream Separator Inventions

Our attention is called to the recent advertisement of the Vermont Farm Machine Co., makers of the so-called "U. S." cream separators, which bristles with assertions likely to convey a false impression to those who may have read it.

They refer to the Houston & Thomson patent in a way to imply that DR. DE LAVAL was not the inventor of THE FIRST PRACTICAL CONTINUOUS FLOW CENTRIFUGAL CREAM SEPARATOR, when they know that the Houston & Thompson patent as well as the De Laval patent BOTH belonged to the DE LAVAL Company, that a usable machine was never built according to the Houston & Thomson patent, and that they themselves helped other infringers sued by the DE LAVAL Company to have the courts decide that the Houston & Thomson patent DID NOT show a continuous separator, even in a technical patent sense, let alone a machine capable of practical use.

They say "No discarded or abandoned inventions are used in the United States separators," when they know that since DE LAVAL separators forced them to abandon their antiquated gravity creamers and take up cream separaors they have twice escaped the penalty of infringement suits brought against them by the DE LAVAL Company by narrow legal technicalities alone, such as a patent having been taken out by two men together, one of whom had added to the inventive work of the other, when the American law, different from that of European countries, requires two separate patents being taken out in such circumstances.

And furthermore they know that their so-called "1909 MODEL" machines utilize merely the curved vertical "blade" bowl construction of the NOW EXPIRED NINETEEN (19) YEARS OLD DE LAVEL PATENT NO. 432,719 ISSUED JULY 12, 1890, which "blade" type of bowl construction, while DE LAVAL owned, was NEVER GOOD ENOUGH for DE LAVAL use,—and that any child can see the "new" U. S. utilization of it now by reference to a copy of the patent obtainable from the Commissioner of Patents, Washington, D. C.

They hark back again to a skimmilk "record" claimed to have been made at the Buffalo Exposition in 1901, which has been exploded so often that it's threadbare and at most is a pretty ancient basis to seek patronage upon in this progressive age in the year 1909.

They print a "testimonial" letter from a man who has long been THEIR OWN AGENT, posing as the "president" of a little creamery near Poughkeepsie, N. Y., which letter they have been simply changing the date of and varying a little from year to year for ten years.

While most of this letter is untrue it is true that this agent of theirs did sell a few "U. S." machines to patrons ten years ago, but they were sold at half-price, or less, as a sort of "stage-play," because of the nearness to the De Laval Works, to farmers who were led to believe they were getting "bargains" at the price, some of whom have never used the machines, while others have long ago abandoned their use or traded them in at "scrap" values for DE LAVAL machines.

In this connection it may be remarked that in 1908 the DE LAVAL agents made competitive "trade allowances" for more abandoned "U. S." separators to be thrown into the scrap pile than for any other make of separator, even of the trashy "mail order" kinds, which bears out the judgment of the agents NOW advertising "U. S." separators at "mail order" prices—manifestly putting them in their right class.

We should not devote this much space to the "U. S." machine—which we consider a "dead duck" competitively—but for the fact that this kind of advertising by their makers is more or less typical of that of would-be competitors generally in their desperate effort to keep all 1909 business from going to the Improved DE LAVAL machines.

De Laval Dairy Supply Co.

108 S. Los Angeles St. LOS ANGELES.
42 E. Madison St. CHICAGO.
165-167 Broadway, NEW YORK.

General Offices
101 Drumm Street
San Francisco

107 First St. PORTLAND, ORE.
1016 Western Ave SEATTLE.
Box 1052. VANCOUVER, B. C.

The Separator Used by Prominent Dairymen

W. J. GILLETT of Rosendale, Wis., owns the **Holstein Cow**

COLANTHA 4TH'S JOHANNA

that holds the **World's Record** for milk and butter.

MR. F. H. SCRIBNER of Rosendale, Wis., owns the celebrated **Jersey Cow**

LORETTA D. No. 141,708

who won in the most famous dairy cow test held in America.

MR. CHAS. L. HILL of Rosendale, Wis., owns the famous **Guernsey Herd** and Champion and Grand Champion Cow

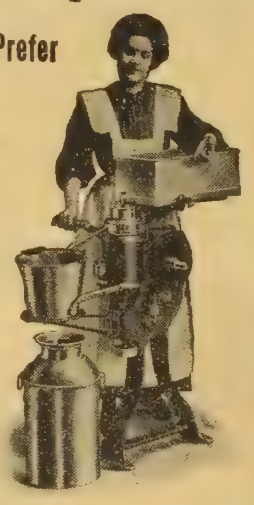
TWILIGHT LONAN No. 12,484

ALL THESE FAMOUS DAIRYMEN USE

United States Cream Separators

In fact the

Most Progressive Dairymen Everywhere Prefer the UNITED STATES and USE IT.



Remember the **U. S. Separator** holds the **World's Record** which record was made in competition with the leading separators of the world.

The 1909 Model

has Greatly Reduced Diameter of Bowl, making them operate easier—and still retain their great milk capacity.

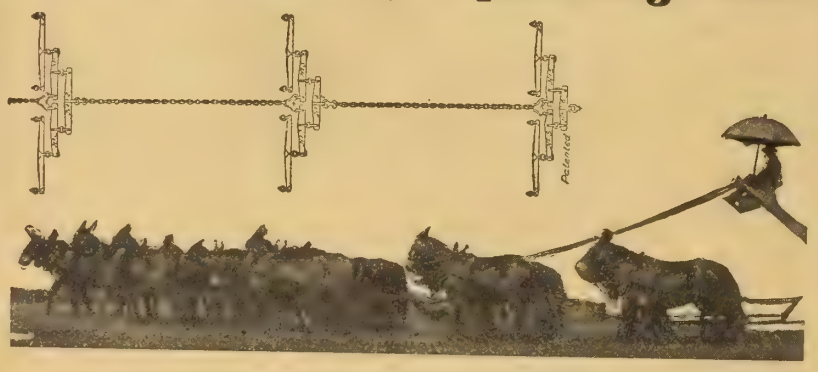
Send for Illustrated Catalog No. 20

Warehouses in every dairy section of the U. S and Canada.

Vermont Farm Machine Co.,
Bellows Falls, Vermont.

Prompt Delivery Assured California Customers from Stockton warehouse. No delays. Address all letters to Bellows Falls, Vt.

The Schandoney Equalizing Hitch



Positively Prevents Runaways

They are more expensive than these HITCHES. Why take the chances? Anybody can drive, it doesn't require an expert. Over four thousand of these HITCHES now in use, and not one a failure. Write today for further information, Catalogue, etc., to

Schmeiser Manufacturing Company Davis, California

The Frictionless Empire

Have you seen the ballbearing in the Frictionless Empire Cream Separator? If not, you should do so and examine it!

It prevents all wear on the bowl spindle.
It reduces oiling to the very minimum.
It consists of a bushing, through which the bowl spindle passes and this bushing revolves with the bowl on the balls encircling it, thus making it practically frictionless and protecting the spindle from wear, and which helps to make the Empire the easiest running machine on the market. This is only one of the many leading features of the Empire.
Send for catalogue.

Empire Cream Separator Co. Ltd.
No. 85 North Sixth Street, Portland, Oregon

Makes Horses Sound—Keeps Them So

In over 100,000 stables horses with bad legs and other troubles, such as Distemper, Founder and Colic, are made sound and kept in prime shape with

Tuttle's Elixir Cures Spavin Lameness, Curb, Splint, Sprain, Bunches. Send for the proofs. Don't experiment. Use Tuttle's and be **sure.** Ask also for Tuttle's Worm Powders, Condition Powders and Hoof Ointment. At dealers or by express. **Valuable Veterinary Book Free.** The best guide for horsemen in all emergencies. Write for it today.

TUTTLE'S ELIXIR CO., 117 Beverly St., Boston, Mass.
WILLIS A. SHAW, Los Angeles, California Agent

access to them. By exercising this precaution the disease will not be disseminated by flies and other insect pests.

We have thus two agents at work in maintaining the disease in any locality—the soil and meteorological conditions and the carcasses of animals that have died of the disease. Besides these dangers, which are of immediate consequence to cattle on pastures, the virus may be carried from place to place in hides, hair, wool, hoofs, and horns, and it may be stored in the hay or other fodder from the infected fields and cause an outbreak among stabled animals feeding upon it in winter. In this manner the infection has been introduced into far-distant localities.—Dr. D. E. Salmon, of the Bureau of Animal Industry.

INCREASED GRAZING ALLOTMENTS.

Material increases have been made on the grazing allotments on the National Forests of California for the coming year. At the request of the Forest Service, the Secretary of Agriculture has authorized the grazing during the season of 1909 of approximately 207,855 cattle and horses, 10,400 hogs and 430,500 sheep and goats within the National Forests of California. The authorization for the season of 1908 was about 185,000 cattle and horses, 6,700 hogs and 426,137 sheep and goats. The actual number grazed during the season of 1908 was approximately 174,900 cattle and horses, 2,584 hogs, and 379,193 sheep and goats. Grazing on the recent additions of the California, Shasta, Modoc, Tahoe and Cleveland Forests will be allowed during the season of 1909 without fee and without permit.

Although climatic conditions were very unfavorable last season the ranges throughout the District carried the usual number of stock through the season without serious injury. This is due to an effort on the part of the Forest Service to restrict the number of stock allowed to graze on the National Forests to the capacity of the range under normal conditions in an average year. It means that in very good years there will be a surplus of feed and at least a reasonable amount of natural reseeding so that in unfavorable seasons the ranges will carry the usual number of stock through in good condition and without injury to the forest. On the whole the stockmen are heartily in favor of the grazing regulations and sentiment grows stronger as local difficulties are adjusted. The fees charged on National Forests are about one-half of those charged on private and railroad lands and less than one-third on an average of those charged on Indian reservations.

PUMPKINS FOR COW FEED.

Pumpkins are an excellent succulent feed to feed milch cows. Of course they will not keep long and must be fed out. Do not let your neighbors dissuade you from feeding pumpkins. Pumpkins contain 1 per cent digestible protein, 5.8 per cent digestible carbo-hydrates and 0.3 ether extract or fat. Rutabagas contain 1 per cent protein, 8.1 per cent carbo-hydrates and 0.2 per cent ether extract or fat. Mangles contain 1.1 per cent protein, 5.4 per cent carbo-hydrates and 1 per cent fat. As the per cent of protein indicates largely the value of the food for dairy cows,

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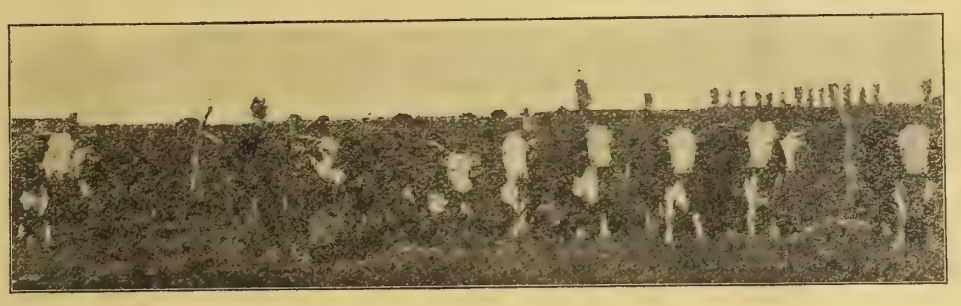
because we have all the carbo-hydrates we need, you can readily see that pumpkins are worth as much, ton for ton, as rutabagas or mangles, and I know of no other succulent food that is relished better by cows after they once acquire a taste for them. It certainly is not policy to feed too many pumpkins any more than it is to feed too many beets. They are valuable largely because of their succulency.

I suppose if one would attempt to make nearly the entire ration for a dairy cow out of pumpkins, the cow would fall off in her milk and it is barely possible that if we should turn the cows into the field and allow them to eat all they care to, some of them would eat so much that it would get them out of condition and off their feed, consequently would dry them up. The proper place to feed pumpkins as well as anything else is in the cow stable.

The Vermont Experiment Station a few years ago made a test of pumpkins and corn silage, and this test seemed to show that two and one-half tons of pumpkins were equal to one ton of corn silage. I think that the growing of pumpkins should be encouraged. A piece of well-prepared land planted to pumpkins exclusively will many times yield profitable returns and they make excellent and handy feed to feed for succulency in the Fall before one cares to open the silo. Some have the idea that pumpkin seeds work on the kidneys of animals as a diuretic and that seeds ought to be removed before feeding them. This, however, is simply another notion. There is nothing in it and the seeds are as valuable as any part of the pumpkin.

With mixed hay and cornstalks for roughage, the grain ration should be rich in protein, because the roughage is quite deficient in it. Corn meal will not balance a ration of cornstalks and mixed hay. We must have some grain ration much richer in protein. You could make a fairly good ration by feeding corn meal and wheat bran and mixing the corn meal and wheat bran in the proportion of equal parts by weight. It would be a more economical ration, however, to mix corn and wheat bran by bulk or by measure and then feed a pound of cottonseed meal night and morning with it. Because you have to buy the grain food, if you have good cows you cannot afford to scrimp them on their grain ration. A cow that is giving a good, liberal flow of milk ought to have from six to ten pounds of grain every day. If it is not convenient to get the cottonseed meal you could substitute oil meal or gluten meal.—Spokesman Review.



Imperial Valley Stock.

CO-OPERATING MILK PRODUCERS.

About a year ago a few dairymen around Artesia, Norwalk and Cypress, Los Angeles county, formed an organization for the purpose of getting a living price for their milk. The buyers in Los Angeles controlled the market to such an extent that they could and did pay what they pleased regardless of the cost of production. This forced the dairymen to either organize and handle their own milk in the city or quit the business.

It has always been said that the farmers could not be held together in any organization even where it was to their interest to do so. That remark is a slur on the farmer and they resent it. They have perfected an organization that assures them absolute independence, and among the tedious process of working out the details, have shown a determination of purpose that cannot fail to win out in the face of the strong opposition that they have encountered on every hand. They have given freely of their time and willingly taken a low price for their milk rather than submit to the dictates of the trust.

The scheme of the organization is so absolutely fair to the farmer whether he produces a thousand or a hundred pounds of milk a day, that there can be no argument against it.

The milk is to be sold in the city and after deducting expenses the balance is to be divided pro rata according to the butter fat. Each member must be an actual producer of milk and can hold but one share of stock. There are to be no dividends, so that there can be no temptation to benefit by manipulating the stock.

From the small beginning a year ago, the growth has been so rapid that today there are over three hundred members, with about 50,000 pounds of milk per day, comprising the Southern Califronia Dairy Association. The Downey Co-operative Creamery Company and the Hynes Co-operative Creamery Association. These three organiaztions are to be operated under the name of the Mutual Dairy Association. The main office will be at 1236 Victoria St., Los Angeles, where the Southern California Dairy Association is erecting a creamery to cost about $25,000, and is to be equipped with the latest appliances for putting the milk on the market in an absolutely sanitary condition.

This is strictly a dairyman's proposition and all are invited to join as the more milk handled the smaller will be the proportionate cost. The stock will remain $100 per share until April 1, 1909, after that date it will advance to $150 per share.

What is really the first great step by the government in the conservation of natural resources is expected to be taken up by the reclamation service in the great Iron Canyon dam in the Sacramento Valley.

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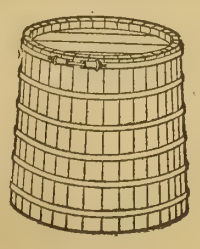

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Contents

IN THE SAN BERNARDINO NATIONAL FOREST, Cover.

SOME PRODUCTS OF THE HAWAIIAN ISLANDS, 403.

CITRUS.—The Menace of White Fly; A Great Aid to Fumigation; Kerosene Emulsion, 404, 405.

DECIDUOUS.—This Year's Apricot Crop; California Raisen Day; Rhubarb Association, 406, 407.

SMALL FRUITS AND VEGETABLES.—As to Vegetables; The Strawberry; The Everglades; Klondike Vegetables, 408.

ORNAMENTAL GARDEN.—Bulbs in Glasses; The Surroundings of our Homes; Lice on Roses, 409.

LEGAL QUERIES.—Chattel Mortgage; Telephone Poles; Waste Irrigrating Water; Right of Way for Ditch; Railroad Right of Way; Executor Selling Property; Excess Land, 410.

LIVE STOCK AND DAIRY.—Anthrax in Cattle; Increased Grazing Allottments; Pumpkins for Cow Feed; Cooperative Milk Producers, 411, 412, 413.

EDITORIAL.—Permanent Roads; Cooperative Egg Producers; Horticultural Commision; Eat Raisins; Cooperative Fumigation; Tax the Gun; Next Demonstration Train, 414.

AGRICULTURAL NOTES OF THE PACIFIC COAST.—Northern, Central, Southern, the Coast, 415.

PROFIT IN THE POULTRY YARD.—Lay Sermon on Lice; Possibly Poisoning; Geese Dying; Hints on Water Glass; The Housing Problem; Trap Nest in Egg Production; A Good Rooster, 416, 417, 418, 419.

IRRIGATION AND FORESTRY.—Caring for Electric Motor; Legislation to Prevent Forest Fires, 420.

BEES AND THEIR CARE.—Bee Paryalsis, 421.

QUERIES & REPLIES.—Australian Onions; Violets—Roses; "Beer Seed"; Hillside Grass; Eucalyptus; Girdled Orange Trees; Peanuts; Fertilizer Spoiling; Sour Orange Seed; Forcing Cows to Dry Off; Garget; Cow Pox; Grapes not Bearing; Sorghum; Summer Manure Crop; Sorghum for Poultry Shade, 422, 423.

GENERAL AGRICULTURE.—Ground Limestone for Alfalfa; What is the Davis Bill; Grain Weevil; Dry Farming, 424, 425.

HOUSEHOLD.—Don't Knock; A Slight Miscalculation; About the House; Just for the Girls; Breakfast Professorship; The Woman at the Bottom of It, 427, 428, 429.

PRODUCE MARKET.—Los Angeles, Markets; San Francisco Markets; Citrus Markets, 430, 431.

PERMANENT ROADS.

The menace to good roads in their destruction by the automobile is demanding more serious consideration than it has ever done. As a rule the farmer appreciates the beneficial advantage of better roads and is submitting in some cases to high taxes in order to secure them. The taxation falls more heavily on him in proportion to the benefits than upon any other industry, but with it all he stands it with fairly good grace.

Unless something is done, however, to lessen the wear on these roads by rapidly moving automobiles, the farmer may be compelled in self-protection to rebel at further taxation. This would not be satisfactory and we trust some plan can be devised to protect our roads from this destructive agency. It is not expected that the automobile may be compelled to disappear to accomplish this because that institution has come to stay, but automobile owners and others must take up the question and help to solve it.

Regarding the destructiveness of the automobile, the Scientific American in a recent issue, comments as follows:

"A serious problem which grows in importance every year is that of the relation of the automobile to the public highways. That the automobile is the most active of all agents in the breaking down of Macadamized roads is a fact that has long been recognized by our state engineers, and of late years it has become evident, that not even the most enthusiastic automobilist can deny that great damage is done. When a new stretch of Macadamized roadway is thrown open to the public, it offers such strong attraction to automobile owners that, even in cases where its use involves a considerable detour as compared with shorter routes over roads of inferior quality, it is certain to become so popular with the rubber tired vehicles that they will frequently constitute the majority of the traffic. The initial breaking down of the carefully prepared surface is almost immediate. The so-called "suction" of the swiftly-revolving rubber tires picks up the finely crushed binding material of the surface, and throws it to the rear, exposing the broken edges of the top course of Macadam. These in their turn are broken down, ground into dust, picked up by the passing wheels, and carried by the wind into the adjoining fields, or sifted upon the lawns and buildings of adjacent property. The process of disintegration goes on at a speed proportionate to the density of the traffic, until finally the heavy underlying foundation rock of the macadam is exposed. When this condition has been reached, there is nothing for it but to practically rebuild the roadway, or at least the upper half of it. The destructive action of automobile traffic has been greatly intensified in recent years by the introduction of chains and other non-skidding devices, which are undoubtedly active agents in breaking down and pulverizing the surface dressing and the upper, broken stone layers of a Macadamized road.

"Finally, as we have frequently pointed out in this journal, our whole system of maintenance needs to be thoroughly revised. Our present methods of allowing a road to go to ruin, and then spreading a layer of so-called top dressing upon it, and calling this procedure a repair job, is simply barbarous. Eternal vigilance is as necessary in the upkeep of a modern highway as it is in that of a steam railroad track. Locl indications of subsidence or wear should be immediately repaired. The constant day-by-day attention of a repair gang, scattered at intervals over a stretch of state highway, will keep the surface in first-class condition for many years. They will do successfully, and for far less cost, what the periodic and spasmodic repairs under our present systems of maintenance fail utterly to accomplish."

'But that all costs—throws a heavy burden on the land owner. As suggested in this paper before, may there not be a license issued to automobiles, the returns from which shall aid in the upkeep of roadways.

CO-OPERATIVE EGG PRODUCERS.

The Egg Producer's Association of Southern California is still engaged in an effort to perfect an organization and to put the poultrymen in a position where they may at least not be compelled to accept dictation, if not in a position to dictate. The poultrymen have just cause for making a desperate effort for this co-operative movement. Their wares have been knocked about from pillar to post on the market and handled at the whim of speculators regardless of rights of producers until there is slight money in the poultry interests.

We recently heard a competent business man who has had experience in the city of Los Angeles in the egg industry for years say that if the producers will stand together, responsible houses may be found which will handle the goods and insure eggs and poultry products always being handled at a fair price, but the fear expressed on the part of the gentleman referred to was that the poultrymen would form such a loose organization that the members should be able to break away from it the moment a little more immediate personal advantage might be secured from parties anxious to disrupt the organization. As the gentleman remarked: "There are large dealers in Southern California who place in storage thousands upon thousands of dollar's worth of eggs." He said: "For instance, I will mention one firm," and he gave the name of a small concern of which we had never heard, and, he added, "This is one of the smallest firms in the city handling eggs, yet it will place in cold storage this year in excess of $20,000 worth of eggs." If this is an indication of the business it may be seen that these men will be anxious to retain the egg handling absolutely in their own power. They can afford to lose money in large quantities for a year or two in order to discourage members of any co-operative organization from remaining true to it. The question now before the poultrymen is will everybody stand up and be true to the organization when outsiders offer prices more liberal than the association will secure when it starts.

We hope the poultrymen will organize and then stand pat.

HORTICULTURAL COMMISSION.

The district attorneys of some counties have seemed to be somewhat muddled as to the situation regarding the old horticultural commission, pending appointment of the board of examiners by the Governor and later the appointment of the single horticultural commissioner. In most counties, however, the district attorney has ruled that the old commission does not terminate until the new commissioner has been examined and qualified.

It is understood that the Governor has appointed the examining board, but at this writing the announcement has not been made as to who will constitute the board. We assume that the examination will proceed as soon as the board has once been appointed and organized.

EAT RAISINS.

The announcement of Raisin Day to be observed on the last day of this month has attracted some attention to the raisin and creating interest which will, we believe, lead to the financial betterment of those engaged in the raisin industry. For instance, Mr. George Robertson of Fresno, has discovered that the people of the United Kingdom eat five times as many raisins as do those of the United States. This is possibly to a certain extent due to a larger amount of fruits in this country of other kinds and the need is not so great for that particular fruit. However, we believe this campaign will attract attention to the healthfulness of the raisin in a way which will increase its consumption not only on April 30th, but many other days thereafter.

CO-OPERATE IN FUMIGATION.

The co-operative movement which we have often referred to in fighting scale and other pests of fruit trees is appearing more and more. In fact it is the one sensible way for the smaller fruit grower. The expense of investing in tents and effective spraying devices is too much for the small orchardist. The contract system has proven satisfactory and again it has proven decidedly unsatisfactory. Some contractors have been doing effective work; others again have only compensation in view. A neighborhood combining to own their fumigating or spraying outfit can by co-operative work, with one good superintendent who thoroughly understands the work, secure maximum effectiveness at minimum cost.

The pests combine against the orchardist, let the orchardist be as wise.

TAX THE GUN.

The suggestion has been made that a tax of two dollars be placed upon all guns, pistols and in fact fire arms of all kinds manufactured or sold in this country as an aid in raising the internal revenue. It certainly would be a satisfactory way of raising the revenue and would place it upon a product which is in no sense a necessity. Many farmers, and in fact others who wish protection in the house, find it desirable to own one or more guns, but as noted they are in no sense a necessity and this tax would perhaps aid in keeping this which is often a trouble maker from the hands of irresponsible persons who at times get into serious trouble from having weapons too handy. If this is done coupled with registering of each purchaser of fire arms we believe it would prevent much crime.

NEXT DEMONSTRATION TRAIN.

Definite dates are not yet fixed for the next trip of the Demonstration Train, but probably a start will be made next week. Our issue of the 15th will give the dates if possible.

Agricultural Notes of the Pacific Coast

Northern California

Anderson, Shasta county, is planning for a rose carnival.

Hop growers are encouraged at the better outlook for the coming season.

One company has planted 11,000 acres to walnut trees at Santa Rosa this season.

The Gridley Herald states that farmers of that section cannot help getting rich.

A coyote bill which passed the recent state legislature offers a $5.00 bounty on every scalp.

During the month of February, San Francisco shipped 115,000 pounds dried applies to Germany.

The recent effort at combination of Luther Burbank with certain capitalists has been declared off.

One packing house in Sacramento has fifty girls engaged in sorting and packing asparagus to Eastern markets.

Hayward reports the fruit blossoming time on the hills thereabout as "A beautiful site in this modern Garden of Eden."

The recently organized Sebastpol growers association has purchased a large building which will be used as a packing house.

The Riverside Creamery at Port Kenyon, Humboldt County, has been purchased by the Central Creamery Company of Eureka.

The field manager of the Sacramento Valley Sugar Company reports extensive planting of beets in the vicinity of Woodland.

Dairymen of the upper Coast counties have suffered heavy losses this year from exposure of stock and lack of housing facilities.

The Government Plant Introduction Garden at Chico is experimenting with the spineless cactus. About five thousand cuttings will be planted.

Asparagus growers of Sacramento Valley are complaining because of its products being shipped from Sacramento under Southern California brands.

Land which was earlier in the season planted to grain crops and then destroyed in the January floods has been planted to sugar beets for the Hamilton factory.

Farmers near Chico predict that that secton will become one of the greatest alfalfa sections of the country. There has been seeded this season over 500 acres.

A scheme to conserve waters for summer irrigation is on foot in the upper canyon of the Feather river. It is practically the building of "bins" for the storing of snow.

Creameries in Marin, Sonoma, Humboldt and Mendocino counties which had expected large government contracts on high grade butter this year have not received them because of prices being higher than Eastern creameries.

G. W. Peavy of United States Service is inspecting lands near Gridley, Butte county, on behalf of the Forest Service and to give advice to a large lumber company which expects to plant these lands to eucalyptus trees.

Central California

Prunes are moving out somewhat more freely.

Santa Clara county cherries now promise an exceptionally good crop.

The town of Exter, Tulare county is discussing the abvisability of incorporation.

Lindsay has rejected shipments of orange trees which came to the station infested with scale.

Tulare has three creameries which are paying to farmers of that section about $75,000 per month.

Orange packing houses are running in Sanger, Fresno county. The fruit is small but of good quality.

The San Joaquin county table grape growers recently held an enthusiastic meeting at Lodi and drew up plans for the proposed grade shipping system.

The Saratoga blossom festival was granted some beautiful weather for its great celebration and immense throngs paid honor to the prune blossoms.

A eucalyptus company with a ranch near Pixely, Tulare county, is planning for setting out 3000 acres of which 1600 acres is to be planted this year.

The Madera county horticultural commission caused the arrest of a fruit seller for selling in the Madera market fruit alleged to be infected with scale.

Saratoga has a committee at work formulating a plan for co-operative fruit marketing. The committee is investigating the advantages offered by the farmers union.

Secretary Blanchard of the Kings county Chamber of Commerce is suggesting that every Californian mail leaflets to eastern friends suggesting the observation of Raisin Day.

The citizens of Fowler are organizing an improvement association which have to do with the best interests of the community and especially with the beautifying of roadways.

Tulare county is somewhat elated over the recent sale of an orange grove near Lindsay where eight and one-half acres sold for $34,000 or $4000 per acre. The trees were all Valencias.

Prune growers of Santa Clara county are working to secure better returns for dried fruit and a committee of fifty has been organized to work out a plan which we hope will be successful.

Biggest sale of fat cattle ever consumated in Porterville section was made recently when a thousand head of steers were purchased by a San Francisco house. The cattle are to be sent in lots of 250.

The grand jury of Tulare county after a short session found no indictments against County officials, but resolved: "Inasmuch as the ground squirrels are growing more numerous each year, and their depredations are so great in many sections of our county as to make farming almost profitless, therefore be it resolved: That we memorialize our board of supervisors of this county to the end that they take some further steps toward the destruction and eradication of this particular pest."

Southern California

Lima beans at Oxnard are now being quoted at $3.55.

Orange picking was stopped by last week's storms.

Orange County's celery crop is practically all shipped.

The Victoria orange packing house at Riverside has installed a new grader.

"Oranges by the peck" is the slogan of the eastern groceryman on the California oranges.

The California Vegetable Union handles over 150 cars out of Coachella Valley each year.

Work has begun on the fire trails of the forestry reserves to clear them up for the summer campaign.

The market has been supplied with new hay; alfalfa especially has been a factor in the earlier sections.

One Orange County cabbage grower has received an offer of $50.00 per ton for a small local shipment.

White frosts with peach trees full of bloom caused some uneasiness last week, but no damage is reported.

Work is progressing actively with the first planting of cotton seed in a large way in Imperial county.

A project is on foot to drain between four and five thousand acres of land near Newport in Orange County.

Oxnard and other Ventura county bean growers are formulating plans for co-operative marketing of beans.

Water users at Escondido are compelled to make extensive improvements on the water system this year.

It is now thought that the crop of cantaloupes in the Imperial Valley will be later in marketing than last year.

It is now estimated that the southern part of the state will ship at least 1,000 cars more oranges than last year.

The Anaheim Walnut Growers Association has agreed to join hands with the Southern California Association.

The grain crop about San Jacinto, Hemet and Winchester will aggregate over a quarter of a million dollars this year.

Oranges which were depressed in price by large shipments after the earlier storms are now recovering their former price.

Imperial county has sent branches of apricot trees to Los Angeles Chamber of Commerce showing fruit larger than large marbles. The branches were cut the last of March.

An orange grower and packer at Riverside has established what he calls "millionare special brand" which will be used on only the finest grade fruit with a special gilt edge pack and only half boxes.

A special train of oranges over the Santa Fe placed its fruit in the market in the Middle West so that the fruit was only seven days from tree to consumer. The train was made up of 35 refrigerator cars.

The recent rains over the southern part of the state came just in time to be of immense benefit to hay and grain growers. The aggregate of the storm varied from one inch to three inches in different sections.

The Coast

Cold storage of eggs has begun at Portland, Oregon.

Vast numbers of homeseekers are entering Western Oregon.

The State Grange of Oregon will convene in McMinnville in May.

Over a million apple trees were shipped into the state of Washington last year for planting.

The dairying industry is developing exceedingly rapid in the Klamath Falls, Oregon, section.

The spring tree-planting at Lewiston, Idaho, is the heaviest that has ever been made in that section.

The criminal court of Dalles, Oregon, had a strange case in a man who stole a whole field of potatoes.

One of the largest and finest stock ranges in the state of Oregon is under the management of a woman.

Farmers of Umatilla county, Oregon, have contracted for a million and a quarter grain bags at 6¼ cents.

The demonstration train for Western Oregon has as one of its exhibits a premium hen which has a record of 256 eggs.

The markets of Oregon City, Oregon, are supplied with wild strawberries which grow on the hills thereabout.

Vast numbers of applications for filings on land recently thrown open for settlement in Western Oregon were made.

The University of Idaho has passed its 500 mark of enrollment. This is the youngest state university in the United States.

A number of stockmen have been arrested for fencing in over 85,000 acres of government land in Harney County, Oregon.

Farmers at Yuma, Arizona, claim eight cuttings of alfalfa per year and that there is no month when the alfalfa is not in bloom.

The Governor of Oregon has recently appointed J. H. Booth of Roseburg, Douglass county, a member of the State Board of Agriculture.

Additions have been made to the National Forest Reserves in Arizona by a proclamation of President Roosevelt prior to his retirement from office.

Hood River section which has heretofore been noted as an apple county, after experimental planting of grapes, will this year plant largely to vineyards.

The demonstration train on the O. R. & N. Railway in Eastern Oregon has as one feature a live stock car in which lessons in judging are taught.

The Inland Irrigation Company at Pendleton, Oregon, is launching the biggest irrigation scheme in that section. It will cover about ten thousand acres of land.

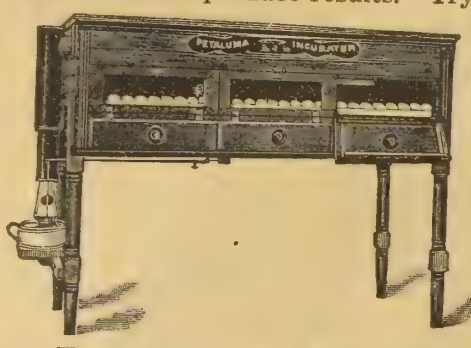
The sheep sanitary commission of Arizona report less scabbies amongst the sheep of the territory this year than usual. This is owing to more general dipping of the flocks.

The largest fir tree in the state of Washington has been cut and will be exhibited at the Alaska-Yukon Fair at Seattle. It is 225 feet long and 14 feet in diameter at the butt.

Don't Forget Quality

MIDLAND Poultry Food

Is based on ***quality*** and it is quality in Poultry Food that produces eggs. ***Cheap filler*** and ***cheap grain*** will ***not*** make eggs. ***Midland Poultry Food*** contains only the ***choicest*** cereals and animal food the market affords. You ***can't*** afford to try and be successful and not get results. ***Midland Poultry Food*** will produce results. Try it and see. $1.95 per sack



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Are still here, after others are gone. ***The Standard of the World Machine.*** Winners of ***more prizes*** awarded by ***World's Fair Judges*** than any other make.

Remember, we make a hot water machine. One of the ***best hot water machines*** on the market.

Send for our Illustrated Catalogue.

Petaluma Incubator Company

Petaluma, California

Our General Agents for Incubators and Brooders and Midland Poultry Food:
Petaluma Incubator Co., Petaluma, Cal.
Aggeler & Musser Seed Co., 113-115 N. Main St., Los Angeles
Berrar & Robertson, San Jose, Cal.

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Poultry and Live Stock Supplies

We have the MOST COMPLETE and up-to-date supply house on the Pacific Coast. We are agents for the Petaluma Incubators and Brooders, Midland Poultry Foods, etc. We have everything required for Poultry, Stock, Dogs and Birds. Send for our catalogue; it is free.

Berrar & Robertson, 103 East Santa Clara St., San Jose, Cal.

When the chicks are hatched don't feed them anything for 24 hours, then feed them the best dry Chick Feed you can get. We say that is

West Coast Chick Feed

SAMUEL R. KELLAM, former president of the L. A. Co. Poultry Association, says: "West Coast Chick Feed is the best feed for young chicks I have ever used. I have given this feed a thorough test, and have always found that it produced fine, large, healthy chicks."

MRS. A. BASLEY, the celebrated poultry authority, says. "I want some more of your West Coast Chick Feed, for it is excellent. It is purer, cleaner and appears better balanced than other feed I had been using, and to tell the truth, I have been experimenting, feeding both together, and they always eat yours in preference."

Ask your neighbors, for there is more of "West Coast" sold in Southern California than all other kinds put together. If not sold by your dealer send us $3.50 and we will send a 100 lb. sack, freight prepaid within 300 miles.

West Coast Mill

705-709 So. Griffin Avenue, Los Angeles, Cal.

WARD'S ORIGINAL FIRELESS BROODERS

PRODUCES STRONGER, HEALTHIER CHICKS THAN ANY HEATED BROODER
FULLY GUARANTEED
NO LAMPS. NO OIL BILL. NO DANGER OF FIRE
WRITE FOR ILLUSTRATED BOOKLET AND DELIVERED PRICES
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Count Your Chicks Before they are Hatched!

Hubermann's Automatic Incubator and Brooder Alarm

watches the temperature in your machine **Day** and **Night** and if for any reason it changes the instrument will call you by **Automatically** ringing the warning bell. Bells may be located at any place, such as in the Barn, the feed house and in the Dwelling. Price Complete $5. Satisfaction Guaranteed. Address nearest Agent, or

Max L. Hubermann Box 149, R. F. D. 5, Los Angeles, Cal.

Profit in the Poultry Yard

By Mrs. Frank Metcalf

We solicit short articles of a practical nature from the fancier and utility breeder, giving their experience with poultry. All inquiries pertaining to feed, management, disease and its prevention will be answered through these columns.

A LAY SERMON ON "LICE."

WE HAVE just had "a time at our house, and nobody to it," and I thought perhaps you would like to hear about it. We pride ourselves upon the fact that we have neither lice nor gapes at Red Feather Farm, and we were much surprised when a few chicks began to gape, and some died. As we have had the wettest weather since the flood, I laid it to old Probs, but my wife simply would have it there were lice about. I cleaned the brooders myself, and protested I didn't see any, or get any on me either, but her manner rather insinuated that I was nearsighted and thick skinned, though she said little.

Saturday afternoon she came home from town with five gallons of cheap lamp oil, and a big bandbox containing a new hat, announcing that "Brother" Scott was to have "an extra good sermon on 'Life and Death' tomorrow."

I rose early Sunday morning and gave those brooders an extra cleaning, while, under instructions from his mother, our boy followed with the spray pump filled with lamp oil. I wondered how I was going to get out of going to church, and finished my job without finding a decent excuse. I was tired, but I knew she would say the music and sermon would rest me. My head did ache, but "Sunday headaches" were worn threadbare, so I just went and lay down, trusting to luck.

Mrs. M. went out to inspect those brooders, and a quick, imperative tap on the window, and a "get up quick, Frank," took me out to see a sight I shall not soon forget.

No lice! O, my eyes. From every crack and crevice of the "middle sized" brooder they were just pouring in swarms, fat, hearty looking chaps, and millions of them. I had no idea they would go near a tarred roof, but there they were as well as everywhere else. My wife was sprinkling oil over the outside with a rose sprinkler, but could not reach every spot. We opened the door of the lamp chamber, (lamp had been out a few days), and found them bunched in swarms there, the lamp chimney itself being completely covered with crawling mites.

Well, Brother Scott's sermon and the new hat were forgotten, and we waged a battle of life and death right there in the shelter of low branched trees which hid us from the view of neighbors passing by on the road to church and home again before we were through.

My brooders are made detachable, so the tops were tipped back off the platforms, giving us a good chance with the spray pump and lamp oil. The hovers were taken out and sprinkled thoroughly, and last the floors were well covered with road dust. The five gallons were soon used up, the house oil went next, and even the large parlor and kitchen lamps were emptied. My wife did cast longing glances at the bedroom and sitting room lamps, as well as the lanterns, but thought of the baby in time to save them, for that small person objects to darkness, and stays awake rather late. Only the one brooder was found in this shape, but all were dosed as a preventive, and gone over in much the same way last Saturday, a week later, and very few were found. How those chickens lived and throve as they did was a mystery to us.

I believe in keeping the chicks off the damp ground at night, but the platforms are separate so the tops can be tipped back allowing them to be cleaned, sunned, and aired easily, and are well sprinkled with road dust after each cleaning.

I found earlier in the season that raw eggs were superior to cooked ones for small chicks, and corrected bowel trouble even after some were caked up behind. I mix one-third bran to two-thirds corn meal, and wet with the raw egg. Believe all food for chicks should be raw, not baked, boiled or scalded. Have raised a larger percentage of those hatched this year, so fed, than I have ever been able to do before. Fed no meat, but lots of milk. They have grown and feathered very quickly.—F.M.

POULTRY QUERIES.

Possibly Poisoning.

We read with interest your department, and would like very much to have these questions answered: What is the cause of chickens, apparently healthy and laying well, to suddenly droop their heads when on the roost, so that the head hangs down below the feet, and die in a day or two; without power to lift their heads?

We had a dozen young chickens, have been laying several months, all apparently perfectly healthy, but have lost four hens and a nice rooster, all in the same manner. One large R. I. Red rooster and two hens yielded to treatment of melted lard with a little formoloid (Wampoles), and hot milk given from a teaspoon and recovered, but the others treated the same way, died. They have free range on new lemon grove, (year old trees), and have free access to stable and manure pile of four head of stock. Get all the crushed barley they can eat, green feed in orchard and part of the time wheat. Do not seem to have cold.—Mrs. E. A. H., Charter Oak.

These symptoms point strongly to poison of some kind, and the fact that part of them recovered from the treatment given, almost proves it. Either these fowls did not get so strong a dose as the others, or your treatment was administered in the nick of time. It looks like ptomaine poisoning and a post-mortem might have helped to discover the cause of death. Perhaps gopher poison had been placed somewhere or they ate the poisoned animals. Perhaps they obtained some poisonous food intended for vermin of some kind or it may be the trees were sprayed, and the grass under them affected. It acts very like "limber neck" which is caused by decayed meat, usually, although putrid milk is quite as dangerous. Worms sometimes affect poultry badly also, and an occasional dose of sulphur in a mash, say a teaspoon to a dozen birds, will help rid them of these parasites.—Mrs. F. M.

Geese Dying.

I had a fine goose get broody, and set her in the corner of the hen

WATER GLASS FOR EGG PRESERVING

Why sell eggs at 15c a dozen? Eggs kept in this water glass will keep 12 months or more and are as fresh as new laid. Sold in 25c tins for 150 eggs and $1 tins for 1200 eggs. Egg preserving baskets with cage and cover $1 each. There is only one kind of water glass suitable for this purpose and it is on sale at West Coast Seed Co., 115 West Seventh St., Los Angeles.

Croley's

High protein MEAT SCRAP.
Just what the name implies.

A Meat Scrap High in Protein

Why Not Use the Best

Manufactured by

Geo. H. Croley

Poultry Supplies

631-637 Brannan St. San Francisco. Cal.

Los Angeles Agents, Globe Mills, 925 East Third Street.

"Chicks well hatched are half raised"

CHICKS

We can furnish you strong, healthy day-old chicks from selected utility stock. No. 1 White Leghorns, $9.00 per 100; $25.00 for 300; $40.00 for 500. Special White Leghorns, $12.00 per 100; $34.00 per 300; $55.00 for 500. Brown Leghorns, $10.00 per 100. Black Minorcas, $10.00 and $12.50 per 100. R. I. Reds, $12.50 and $15.00 per 100. Barred Plymouth Rocks, $12.50 and $15.00 per 100. In lots of 50 add one cent each.

San Jose Hatchery

395 E. St. James Street., San Jose, Cal.

Henry Langenschwadt, Mgr.

GEESE

Toulouse **Embden**

Prize winning stock never beaten at any poultry show.

$1.50 Per Setting

Send your order at once for the best stock in the west.

T. B. C. Sielcken

Calistoga, Cal.

2000 LAYING HENS

East San Gabriel Egg Ranch

S. C. White Leghorns and Barred Plymouth Rocks

Eggs for hatching. We fill orders promptly from our selected matings of great egg-producing birds, at $5 per 100, $45 per 1000. At both Los Angeles Shows, 1909, our Leghorns won all firsts, silver cup and special prizes, and more ribbons than all competitors combined. Eggs from prize winning pens $2 per 13.

San Gabriel car to Masonic Home; two blocks south to ranch.

Swanson & Johnson ***San Gabriel, Cal.***

East Side Poultry Yards

Have pure bloods. Eggs for hatching. Hatching chicks a specialty.

S. C. White Leghorns Chicks 10c. **Barred Rocks** Chicks 12c.

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Phone, Black 2651

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MADE IN PETALUMA

GUARANTEED

SOLD EVERYWHERE

Poultry Supplies

Write for free Catalogue.

Germain Seed & Plant Co.

326 So. Main Street, Los Angeles

White Wyandottes

The 200 egg kind—the all white variety—the best all around fowl for farm or town purpose. Eggs from the best strains reasonable.

Wm. C. Parker, 111 Pacific Avenue, Santa Cruz, Cal.

house, on a board floor with a straw nest. Her mate was put in with her at night. In three days I noticed the droppings from the gander looked white, and very watery, also he appeared weak, and didn't eat. I thought it cholera, and gave him the remedy I have used successfully with chickens, namely, a teaspoon of camphorated oil; I also gave him a liver pill; he is apparently all right now. The goose appeared to have watery discharge from her nostrils and eyes at the time I began to doctor the gander. I took her off the nest and she could scarcely move from weakness. There appeared to be small spots like dry blood around the root of her bill. She also had white watery droppings. I gave her some of the oil, and a quinine pill, thinking she had a disease like roup. In about 12 hours I gave her another pill, and covered her with a sack of burlap, also gave her a lot of straw. She lived about ten hours, and died on the nest. Now I have another laying goose showing the symptoms of running at the nostrils, and eyes, and somewhat weak, sits around and doesn't eat. I thought she caught cold last night, as she was out, and it rained. Today and tonight I have her in a corner in the hay in the barn where it is warm. I treated her like the gander, but don't know whether I will bring her out or not. Any help you can give me will be greatly appreciated. I have just begun with geese, and no one in this locality seems to know what I can do for them.—Mrs. G. E. C., Escalon.

Without knowing how your geese were fed, it is hard to tell just where the trouble lies, but I should suspect a grain diet, from the symptoms. Geese are grazing things, and too much grain will kill them by indigestion. They should have a grass run, or plenty of green food at all times, or it is next to impossible to keep them in health.

Little grain should be fed them at any time, and that should be corn on the ear part of the time, and if roasted brown in the oven, helps their digestion, when impaired.—Mrs. F. M.

HINTS IN USE OF WATER GLASS.

Water Glass in tins will keep good for years, but when diluted with water is only serviceable 12 months. Fresh glass should be mixed each year.

Barrels, earthenware jars, galvanized or iron buckets, and cement tanks in the ground, are all suitable for egg storing.

Eggs have merely to be dropped into the water glass, and allowed to rest in any position.

Egg vessels may be stored in any temperature, outhouse, cellar, pantry, back or front rooms, or even attic, although a moderately cool and even one is best.

Eggs a week old will preserve well, but do not come out as fresh as when put in the day they are laid.

Eggs may be taken out of the glass water at any time during the year for use or for sale, and others put in their place, and glass eggs will keep fresh for a month or more after they leave the glass water.

All water for diluting the glass is best boiled, as it destroys all germs and prevents thickening of the liquid.

The vessel need only be half filled with liquid, which rises as the eggs are put in, and the cover is only to keep out dust and retard evaporation.

Water glass is harmless to both hands and clothes and is non-poisonous. It is a powerful antiseptic. The glass acts only upon the shell of the egg, making it air and water tight.

Glassed eggs for sale should be rinsed in warm water and wiped dry. They will then be as clean and fresh looking as when taken from the nest.

"Success" Fireless Brooders

50 Chick $2.50
150 Chick $5.00

We Pay Freight

Will raise every chick, send today for free circular; tells about this wonderful brooder.

No Lamp, No Smoke, No Odor, No Danger of Fire

We pay freight. I sell on trial, if not satisfied I will refund you every cent. Order now. I can ship the day I get your order.

E. E. McClanahan

112 E. 8th, Los Angeles

The Only Original Dry Chick Feed for Baby Chicks

Mamma And The Babies All Raised on

CHAMBERLAIN'S PERFECT CHICK FEED

Write for Prices, Booklet, or name of nearest Agent.

W. F. CHAMBERLAIN FEED CO.

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ROSENEATH EGG RANCH

OSWALD M. ROBERTSON
ARLINGTON, CALIFORNIA.

WYCKOFF S. C. WHITE LEGHORNS

Eggs $1 per 15, $6 per 100, $50 per 1000. Day-old-chicks 12½ cents each, $10 per 100, $90 per 1000. Book your orders early to avoid disappointment.

OSWALD M. ROBERTSON **Box 194, Arlington, California**

Starbuck & Son's Heavy Laying Barred Plymouth Rocks

We now unhesitatingly make the proud boast of the best laying strain on the coast, if not in the world. We will publish prices later.

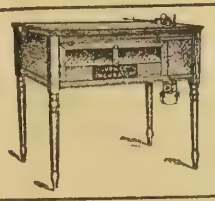
Do you want to hear about our beautiful prize-winning Buff Orpingtons and Silver Wyandottes. We have something to crow about.

Wm. Starbuck & Son, Fullerton, Cal.

Famous Rhode Island Reds

From Winners at Madison Square Gardens. The Greatest Utility Fowl in the world. These birds won 1st prize at Oakland's Great Show and are unquestionably the finest blooded stock in Cal. Eggs—1st pen $5.00 per 15—2nd pen $3 per 15. Day old chicks 10c each. A few hens and cockerels for sale. Address

W. E. GIBSON, R. D. 13, Niles, Cal.



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Our Catalogue A Will Tell You. It Is Free.

Jubilee Incubator Company ***Sunnyvale, Cal.***

Single Comb White Leghorns

The first essential to success in the poultry business is that the foundation stock or eggs be purchased from a reliable breeder, one who has made a success of the poultry business from the fact that his stock has proven to be the Business Hen. Such stock or eggs we now offer you and stand back of our sales. Prices for stock on application. Correspondence solicited.

Eggs—$1.50 per 15, $7.00 per 100 and $60.00 per 1000.

STUHR-WILLIAMSON POULTRY CO.

378 Bandini Ave. **Home Phone 1490** **RIVERSIDE, CAL.**

Coulson's POULTRY FOODS

Special Dry Chick Food

Makes Them Grow

COULSON'S SPECIAL DRY CHICK FOOD, during the five years it has been on the market has justly earned for itself its great reputation as a life-saver for little chicks by its special adaptation to their needs.

THE UTMOST CARE is observed in the selection of each of the dozen or more articles composing this unequalled feed; tender seeds, cracked grains blown free from dust, steel-cut oats, tiny pieces of dried meat and bone, willow and pure bone charcoal, are combined with other very necessary ingredients; every article being selected with special reference to its quality, strength, and desirability for the needs of the young chick.

FOR YOU TO BUY the many different articles composing Coulson's Special Dry Chick Food is quite impracticable; you could not be certain as to their quality for one thing, and the high cost of certain of them when purchased in small lots might lead to their being left out to the detriment of the chick.

TO MAINTAIN the high reputation of COULSON'S SPECIAL DRY CHICK FOOD, nothing is left undone to make it absolutely the best feed that can be made for the little chicks.

COULSON'S SPECIAL DRY CHICK FOOD can be fed exclusively to your little chicks for the first six weeks, at a cost of about four cents (4c) each; and what is of still greater importance, it will do all that can be done in the way of feed to bring them through that critical period of their lives in full health and vigor.

TO RAISE EVERY CHICK you hatch; to have fine, large, healthy chicks; to have chicks that will stand up and crow when eight weeks old; to raise chicks that you will be proud of, FEED COULSON'S SPECIAL DRY CHICK FOOD, THE LIFE SAVER.

Write Us for Free Samples and Prices

Manufactured Only By

Coulson Poultry and Stock Food Company *Petaluma, California*

GERMAIN SEED CO., Distributing Agents, Los Angeles, Cal.

A few cracked shelled eggs put into lime water make the whole batch of eggs to go bad, but in the case of water glass the other eggs are in no way damaged by the presence of the cracked ones.

The cost of preserving eggs in glass is only five cents per hundred in large quantities, or eight cents per hundred in small quantities.

The egg pails with cage are not a necessity; they are merely for the convenience of people who object to the wetting of their hands in the glass water when abstracting eggs from the vessel. Any ordinary bucket will preserve eggs equally well.

THE HOUSING PROBLEM.

How to keep chickens well and healthy is a great problem of poultry raising. With colds, gapes, swell head, etc., the business is one that yields small profits and great perplexities, even disappointments both in feelings and finance.

Too many people have an idea that chickens, do not need to be dry and warm as do the humans. They must be comfortable, even in this land of the Southwest, where it is "perpetual" summer. It is a mistake for either people or poultry to try and live on the ground or in damp cool rooms.

My first experience in poultry was the cause of much sadness and many tears. My chief trouble was colds, swell head and roup. I bought enough antidotes, food preparations, medicines and tonics to have stocked a pharmacy. I dipped and I doped all to no purpose. My beautiful darlings died by the dozens. With dogged determination I held on to the remainder and hoped for better luck.

Luck.

There is, however, no such thing as luck in the chicken business, at least as long as the low squatty houses are used with no floors and with strong odors arising from droppings, which are constantly inhaled by the fowls. At least if there is such a thing as luck, it is bad luck.

My mother never had roupy chickens and she had large roomy houses. Her perches were arranged to rise from the floor like a stairway to the higher parts of the house. Her success was such that I have set about building my houses on the same plan, only that the droppings can be cleared from the floor with greater ease. I had the floor laid with a slope towards the front, ascending perches and descending floor.

The doors open so that the attendant could enter and scrape or brush, or even wash, if necessary, the descending slope of the floor. The housefront was outside of the chicken yard, which carried this manure entirely away from the poultry.

Since making this change I have had absolutely no more sick chickens, but, I have had many, many more eggs and that too when I have been able to sell them at 60 cents per dozen.

I may add that I fed corn all through the molting period, and that my hens were hatched in the fall and winter. This I think had something to do with my hens laying so well when eggs were at a high price.—Mrs. E. M. Stetson, Lankershim, California.

Mrs. Stetson sends a drawing, showing the method of arranging floor and perches. We think we can describe it, however, by saying that the highest part of the floor and the

YOUNG MEN WANTED

We wish to confer immediately with a large number of young men who have a common school education, who are physically fit and whose records are good; only those desiring to enter the railroad telegraph service need apply.

Address

Morse Institute Telegraphy

Hibernia Building, San Francisco, Cal.

Hague Domestic Oil Burner

Showing the Method of Attaching to Cook Stove. A device for using low grade distillate. Saves 40 per cent of cost of coal or city gas—let us prove it. Write for circular.

Hague Domestic Oil Burner Co.

214 Winston St., Los Angeles, Cal.

Sunlight at Night

Superior Acetylene Generators furnish it.

No more Smoky Lamps
No more Strained Eyes.

Catalog free.

SUPERIOR LIGHT & HEAT COMPANY

151-3 No. Clarance Street Los Angeles

$1500 to $5000 a Year

has been made by hundreds of people operating the

"American" Drilling Machines

There is no business in the world where a few hundred dollars investment, combined with a little energy, will obtain a competency so surely or quickly as the operation of an "American" Well Machine. 40 years' experience and 59 regular styles and sizes make them the world's standard.

Complete New Catalog **FREE.**

The American Well Works

Gen'l Office & Works, Aurora, Ill.

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NOTICE OF STOCKHOLDERS' MEETING.

Notice is hereby given that the annual meeting of the stockholders of the Cultivator Publishing Company will be held at the Los Angeles offices of the Company, 115½ North Broadway, Los Angeles, California, at nine o'clock a.m., Saturday, May 1, 1909, for the purpose of electing the Board of Directors for the ensuing year and for the transaction of such other business as may properly come before the meeting.

E. PERKINS, Secretary.

Redwood Tanks Fruit Boxes, Egg Crates

Write NOW for prices.

R. F. WILSON

Stockton, Cal.

Get An Insurable Incubator or None

Now that the Fire Insurance Companies have laid down Rules you are not safe in buying any incubator that does not bear the Insurance Label. Our **Free** 212-Page Book explains. **Address Nearest Office.**

CYPHERS INCUBATOR COMPANY, Oakland, Cal.
Buffalo, N. Y.; Boston, Mass.; New York City; Chicago, Ill.; Kansas City, Mo.

SULLIVANS' "Commonwealth Strain" Buff Orpingtons

We win more prizes on Pacific Coast at leading shows than ALL COMPETITORS COMBINED. This season; 40 regular prize ribbons, 15 SPECIAL ribbons, and 9 SILVER CUPS. Free Catalogue, stock and eggs for sale. Eggs $2.00 and up. Stock, $2.50 and up.

Mr. & Mrs. W. S. Sullivan
GARDEN VALLEY POULTRY YARDS
5 minutes from depot. **Agnew, Cal.**
State V. P. Nat. S. C. B. O. Club for Cal.

lowest one of the perches come nearly together. From this point the floor slopes strongly downward to the front of the house, which is outside of yard. The ascending perches carry the birds so they go near the top, as far as possible from the dropping board. The uppermost perch goes within about two feet of the roof.

TRAP-NEST IN EGG-PRODUCTION.

A trap-nest is a simple device to catch the hen when she enters to lay. As she passes into the nest she presses against a trigger which holds up the door, and it falls down behind her, says the Farm World. When she has laid, the egg is numbered to correspond with the number on the hen's leg band. This enables the breeder to keep each hen's eggs separate with perfect accuracy.

Attempts to improve the egg-producing qualities of the hen date to the domestication of the hen, but it has only been within the last few years that rapid progress has been possible in this work. The inability to determine the good layers has been the difficulty.

With the perfection of the trap nest this difficulty has been removed and many poultry breeders are now engaged in the production of egg-laying strains of fowls.

The great majority of people make no selection of hens from which to hatch their stock. The eggs of the whole flock are kept together and when eggs are desired for hatching they are selected from a general basket.

It has been assumed, and is shown by trap nest records, that eggs thus selected in the spring of the year are from the poorer rather than from the better layers.

This is because the hens that have not been laying during the winter will lay very heavily during the spring season.

Trap nests revised to catch the hen that lays the egg are numerous in the market. A trap nest to be successful must not only catch the hen that lays but must prevent the entrance of other hens.

The more trap nests that are provided, the less often they will require attention, but the more often the nests are attended the better for the comfort of the hens.

A GOOD ROOSTER.

A Tampa man who believes in chickens moved recently into a locality where the fowls run at large. He had none, but he built a nice little roosting house in a nice little pen. He bought a handsome Leghorn rooster, kept him up and fed him well until he became used to the premises. He then opened the gate of his fowl yard and let the rooster go out foraging around. That night he brought home with him a following of three hens, which the shrewd man shut up in an adjoining enclosure. He sent the rooster out every day for a week and robbed him of his gains on his return home every night. He has now so many hens that he has had to buy another rooster and he keeps his fowl yard jealously closed day and night. He is thinking of writing for the poultry magazines a long and convincing treatise showing that it pays to keep chickens.

Antelope Valley was covered several inches deep with snow during the recent storm.

UP-TO-DATE IMPROVEMENTS IN CREAM SEPARATORS.

Cream separators come and go—every year some new names and some that are heard of no more—but all appear to have little effect upon the firmly established prestige of the "World's Standard" De Laval machines, which were first in the beginning and which their makers have spared no efforts or expense at any time to keep in the van of all attempted competition.

Some of the radical changes made in the new 1908-9 machines are mentioned: The capacities were increased from ten to twenty per cent. The supply can is now low enough to meet the objection that has sometimes been made to the lifting of milk into it. The bowls retain, the distinctive "Alpha-Disc" and "Split-Wing" tubular shaft De Laval features, but have been scientifically re-designed, from engineering considerations. The bowl is more sanitary in its construction, being free from tubes, wings, orifices, or any parts which are not easily unassembled. The supporting spindle now sets well up under the bowl, at the center of weight and balance. The top bearing, which provides the yielding cushion the bowl spindle must have, is most ingeniously simple, hardy and inexpensive.

A new feature which appeals to every housewife is the drip shelf coming between the frame and the stool and catching any oil or overflow of milk and water, that might otherwise run to the floor.

In the reconstruction of the machines every part has been carefully designed with reference to its extreme simplicity, not only of itself but in its assembling with the other parts with which it must fit, and it is said that the new machines have been completely unassembled down to the last part within five minutes of time, by persons who had never touched a separator before, and then completely reassembled again within ten minutes without the slightest trouble.

The new machines have been the subject of much favorable comment by Experiment Station and other authorities and many experienced users of separators, have come to appreciate some of the difficulties they had to contend with before and some of the new features which it seems hard to be without once it is known that they can be had.

More than 15,000 users of old machines—various other makes as well as antiquated De Laval—are said to have availed during 1908 of the small "trade" allowances which the De Laval Company makes for such old machines, and it is confidently expected that a still larger number will do so this year.

A FINE TESTIMONIAL.

Williams & Son send us a copy of a testimonial, one of many received, in regard to their cultivator advertised on another page.

Merle, San Diego Co., Cal., March 25, 1909.

Arnott & Co.,
Los Angeles, Cal.

Dear Sirs:—You may recall that I recently purchased one of your Williams Goose-Neck Cultivators. I wish to say that I am exceedingly well pleased with it. In fact, as I told Mr. Jones, your representative in Oceanside, I would not take $500.00 for it if I could not get another. This is not an exaggerated statement, I mean it literally. In this section we do not have irrigation and everything depends on proper cultivation, so that good tools are very important. There are three points in which the Williams Goose-Neck Cultivator surpasses all other cultivators which I have seen, viz:

First. The draft is very light. My two horses weigh 900 lbs. each and they have no difficulty in drawing the 7 ft. cultivator.

Second. The Williams Goose-Neck Cultivator stirs the soil well without exposing the subsurface, thus preventing the escape of moisture.

Third. The cultivator being of low construction, one can cultivate under the trees as easily as harrow.

I was showing my cultivator to a neighbor the other day and had him take it home to try it. The use of it for half an hour so thoroughly convinced him of the merits of the tool that he has, through Mr. Jones of Oceanside, given you an order for one-half dozen cultivators.

Messrs Williams & Son of Orange, certainly deserve great credit for inventing the Goose-Neck Cultivator.

Sincerely Yours,
LOUIS C. LUHR.

SAVES LABOR.

Button Willow, Cal., March 6, 1909.

Mr. John Schilling, Jr.,
Los Angeles, Cal.

Dear Sir:—The Auto-Fedan Self-Feed Hay Press I bought of you last season is the only self-feed I ever saw that would feed. It makes such nice square bales, no danger of the wires slipping off at the end even if they are loose. I have baled three tons per hour at ordinary rate of speed. My team came off at end of season in good order.

Other presses use from four to six horses, and they are nearly worthless at the end of the season. Also the low table is very convenient for baling from the buck rake, saving much labor. My neighbor, Mr. Phillips, saw mine and says he wants one this season.

Yours truly,
C. W. ROWLEE.

Write Jno. Schilling, Jr., agent; call Davies Warehouse, Los Angeles, Cal.

Thousands of Chicks

Hatching every week, send today for new 1909 Baby Chick Catalog, tells all about our 19 kinds of chicks, ducks, turkeys, etc. Also about our low prices on all kinds of hatching eggs. We ship chicks and eggs everywhere safely. Now is the time to order. We supply 50-chick "SUCCESS" Fireless brooder at $2 and 150-chick brooder at $4, if you order it filled with chicks. Ask about this today.

Pioneer Hatchery
112 East 8th Street
Los Angeles, California

Mandy Lee Incubators

Make money for poultrymen no matter what the results have been with other machines, every Mandy Lee Incubator is furnished with a

New Idea Moisture Gauge

ASK FOR FREE CATALOG

Which registers the amount of moisture during the entire hatch and enables the operator to have the correct amount. Moisture accurately handled in an incubator is a successful hatch insurance.

We are so well pleased with the Hygrometer purchased from you some time ago that we want eight more—one for each of our machines.

D. B. MENTZER, Propr. Mentzer Dutch Farm,
Waynesboro, Penn.

Actual test made by the I. X. L. Poultry Farm, Schenectady, N. Y., with the Mandy Lee Incubator:

No. of Eggs Started.	No. of Eggs Tested Out.	No. of Chicks Hatched
May, 1908 140	10	126
June, 1908 93	9	82
Jan. 1909 40	8	30

HENRY ALBERS CO., 534 So. Main St., Los Angeles

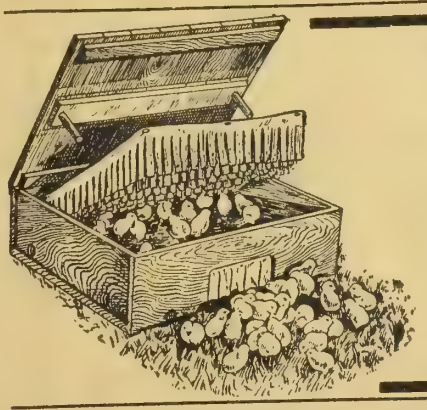
"Old Trusty" Incubators

120 Egg Size $10.90
165 Egg Size $12.75
240 Egg Size $15.90

WE PAY FREIGHT

Now is the time to get a bargain. Send for 180 page book. Only a few machines left.

E. E. McClanahan
108-112 East 8th Los Angeles



Poultry Supplies and Seeds

Petaluma Incubator and Brooders, fireless brooders, Midland poultry food, Steinmesch chick feed, Swift's beef scraps. Send for our large illustrated catalogue of poultry supplies and seeds, it is free.

Aggeler & Musser Seed Co.
113-115 N. Main St., Los Angeles, Cal.
So. Cal. Agents for Petaluma Incubators and Brooders and Midland Poultry Food.

Mammoth Bronze Turkey Cockerels

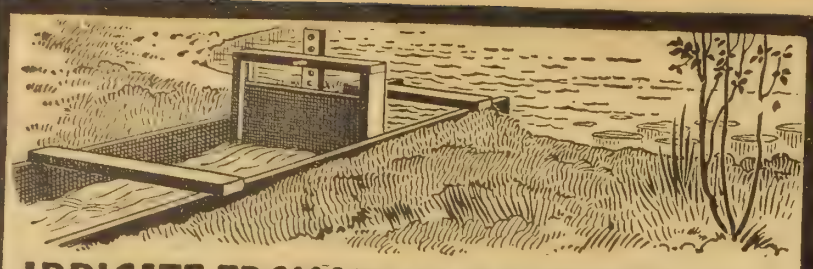
(From pair that took first at Petaluma.)

Improve the blood of your Turkeys by introducing some of my GRAND STOCK. Price $10 each.

THE SHOW POULTRY FARM, R. 1, Santa Barbara, Cal.

Mrs. C. D. Hubbard's
White Wyandottes
Black Orpingtons and White Rocks
Write for Circular
San Fernando, California

When writing advertisers, mention Cultivator.



IRRIGATE FROM YOUR OWN RESERVOIR

A reservoir on your own land makes you independent on the water question. You will have no trouble in filling the reservoir during the spring rains, when all the streams, little and big are flooded.

Then you will not be at the mercy of ditch owners and other water users when the dry season comes.

The few acres you will require for the reservoir will not be wasted. They will serve to make all your other lands vastly more valuable.

Raise the Water With An I. H. C. Gasoline Engine

Of course you cannot have your reservoir on your high ground. Locate it on the bottom land where it is easiest made and certain to be filled with drainage waters.

Then pump the water wherever you need it with an I. H. C. gasoline engine. These engines, always powerful and reliable, have been found to be excellently adapted to irrigation pumping.

They are operated with little expense. They require but little attention.

They enable you to utilize the waste waters such as deep streams, sloughs and ponds upon your own land.

The farmer who has a water supply of his own, so that he may irrigate a few hours now and again, without regard to whether the water is flowing in the company ditch, is the independent farmer.

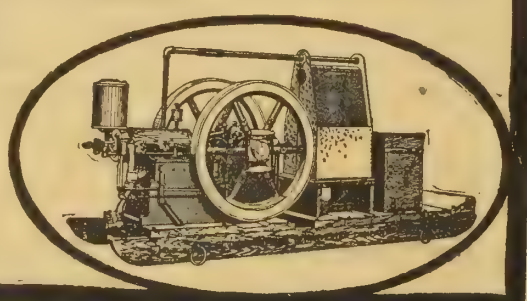
A reservoir on your own land and an I. H. C. gasoline engine to give you the water when you want it, where you want it, is the solution of the problem.

The I. H. C. gasoline engine can be used for other purposes beside pumping. It is a general purpose engine, which will be found an all around handy farm helper —to run grinder, sheller, separator, fanning mill, washing machine, churn, grindstone, etc. The I.H.C. line includes besides Famous pumping engines and jacks, the following:

Stationary engines, from 1 to 25 horse-power; Portable engines, from 2 to 20 horse-power; Skidded engines, from 2 to 8-horse-power; Tractors, 12, 15 and 20-horse-power, and Sawing and Spraying outfits.

Call on the International local agent for catalogs and all particulars in regard to these engines, or write nearest branch house.

WESTERN BRANCH HOUSES:
Denver, Colo.; Portland Ore.; Salt Lake City, Utah; Helena, Montana; Spokane, Wash.; San Francisco, Cal.



INTERNATIONAL HARVESTER COMPANY OF AMERICA
(Incorporated)
CHICAGO, U. S. A.

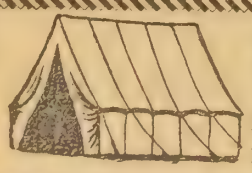
Lambert Portable Engines

2 1-2 to 20 Horse Power

Are Popular

Because Guaranteed to Develop 10% in Excess of Rated H. P.
Rigid Construction and Moderate Weight.
Cost Less than Others not as Good.
Balanced centre crank prevents vibration—most modern and effective cooling system.
We Believe an inspection will convince you that the Lambert Portable Engine is far superior to any on the market, and we have made a price to get the business.

Smith-Booth-Usher Company
212-214 South Los Angeles Street Los Angeles, California



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Mellus Bros. Manufacturers of Fumigating and Lemon Curing Tents

Irrigating Hose, all sizes. Prices and samples quoted upon application. Write your wants. Wagon Covers, Hay Covers, and Canvas Covers of every description.

MELLUS BROS. & CO. Phones—Home, F4871: S. S., Main 3500
305-307 E. Fourth Street, Los Angeles

When writing advertisers, mention Cultivator.

Irrigation and Forestry

CARING FOR THE ELECTRIC MOTOR.

OF ALL the power-giving engines invention has ever produced, the electric motor requires the least attention. It will run under all sorts of discouraging conditions for days and days, and even years, with absolutely no attention beyond an occasional oiling. But, while the electric motor is a very rugged machine, it will, like any other machine, suffer from abuse and neglect.

The life of a steam or gas engine is a matter of a few years but an electric motor will run practically forever if it is well oiled. Motors, even after being the victims of fires, floods and other disasters, have been cleaned up and set running just as good as before.

By observing the following hints, says one of the General Electric engineers, electric motors will do their work long after their owners are dead.

Grazing on the high mesas of Arizona.

The electric motor should be kept clean. Keep all dust and superfluous oil wiped off. See that the brushes bear firmly and evenly on the commutator. Occasionally wipe off the commutator with a cloth upon which a few drops of oil have been placed.

If for any reason the commutator gets rough, smooth it down with a piece of fine sandpaper. The commutator, when operating under the best conditions, will assume a gloss of light chocolate color.

See that the oil rings in the bearing revolve freely, and occasionally draw the oil off from the reservoir, clean it out with gasoline and refill with fresh oil.

After the brushes have once been set for sparkless commutation under normal load, they should not be changed.

In starting a motor, move the starting lever of the rheostat forward slowly and steadily. Never try to stop a motor by forcibly moving the rheostat lever backward. Always open the main switch first.

Occasionally feel of the various connections. If one is heated it indicates a loose joint and should be remedied at once.—Electric Journal.

LEGISLATION TO PREVENT FOREST FIRES.

The frequency and seriousness of forest fires during the past autumn prove that the present laws for the protection of the forests are inadequate. We are of the opinion that negligence or inexcusable carelessness is responsible for the majority of the fires, not merely in the Adirondack regions, but also in the fire-swept districts of Minnesota, Michigan, and Wisconsin. If this carelessness be measured by the magnitude of the disasters of which it is the original cause, it takes on surely a strong flavor of criminality. For it is no excuse to say that the hunter who fails to extinguish his campfire, or the settler who leaves the edges of his clearing burning through the night in proximity to inflammable forest timber, does so without any thought of the loss of life or property which may result from his carelessness; for he is well aware of the fact that such smoldering fires may, and do, start great conflagrations, and that in these conflagrations it frequently happens that not one but many human lives are sacrificed. If such carelessness in the presence of this knowledge be not criminal, a new definition must be found for this last-named word.

Our attention has recently been drawn to the fact that in Canada there is a strong movement on foot, urging the government to follow a more definite course of action in the protection of the forests, and to make the breach of the forest-protection laws punishable by imprisonment without the option of any fine. The object aimed at by the suggested legislation is, not merely to increase the number and enlarge the powers of the forest wardens, but also to compel every camper to either extinguish his fire or keep it under guard; to require every settler, railway contractor, or railway, in clearing lands, to maintain a guard by night as well as by day, so long as the stumps are burning, and to prevent any stumps or underbrush being fired within a reasonable distance of the standing timber; and finally, to make the railways and factories whose tracks or works are within the forest area responsible for the protection of the forest to a given distance on each side of the railway track or factory.

We commend this subject to the attention of the legislatures in those states most nearly affected. It is certain that legislation bringing the careless starting and neglect of fires within the range of the criminal law would prove a most speedy and effective check upon the present annual destruction of life and property. —Scientific American.

Some grain is still being sown in eastern Monterey county.

Bees and Their Care

BEE PARALYSIS.

A LADY apiculturist writes under a late date from a post office of the San Diego hinterland that two of her 18 colonies of bees are dying. They come crawling out of the entrance, she says, bloated of body, go along a little ways and then lean over and die. There are handfulls of them in front of the hive, all having died within a week. They are not starving, nor can she determine any other cause responsible for the trouble. "Is there no help for it?"

Another beekeeper located in an alfalfa growing region is also "alarmed" over the prevalence of this same disease in his extensive apiary. He has been told that re-queening will cause it to disappear, but he finds that re-queening at this time of the year is no easy matter—as, indeed, it is not, if one is to rear one's own queens.

This matter seems fully worth while to take into public print; not merely because of the two cases mentioned just now, but because of the large number of others, for there is probably no apiary of, say 40 colonies or over on the coast that does not show one or more cases of the same trouble, sometimes, but lightly developed, but sometimes badly.

In the Spring.

The disease appears mainly, and almost only, in the spring time. It is not contagious, and healthy colonies, though closest neighbors, locally, are in no danger of catching it because of such neighborhood. But as it makes the colonies affected unprofitable for the season unless speedily cured, it is clear that a considerable spread of it, numerically, may cut down the revenues of an apiary considerably, even disastrously.

In Europe it is known as the "May disease," and is there attributed to the reaction new nectar and pollen produces in the organism of bees confined all winter on some inferior kind of honey, or honey-dew.

Hence they have there developed the practice of extracting all but about one-half of the honey needed for winter stores, and then supplying the other half with sugar syrup fed late in the fall. Much practice in this matter has given them great faith in the wintering quality of sugar syrup. It might be a good plan where paralysis is very bad to try the same thing in this country.

Easy to Determine.

The symptoms of the disease make a certain diagnosis an easy matter. In a case of foul brood, or pickled brood, or black brood only an expert can distinguish which is which, or whether any disease is present at all, or not. Touches of foul brood may come, and go, and the apiarist never know it. The deeprooted instinct of self preservation seems to endow bees (as other primitive creatures) with a wonderful wisdom at such times to find in the open and to apply the remedies needed.

If broodrearing is in full swing all around, a paralytic colony may at once be known by the great extent of its nest. It would seem that, knowing that a heavy percentage of its population must inevitably fall a prey before field work can be entered upon by them, they attempt to make the continual loss good in the only way open to them, i. e., extensive brood production. But besides that the rapidly accumulating mass of dead and dying bees just in front of their home will tell the unmistakable story of the nature of the trouble. True, in a heavy nectar flow, like that of the orange, for instance, the place just in front of a strong colony is often a scene of like or similar, commotion, that is, of great numbers of wiggling and slow moving bees. But in the one case the movement is away from the hive, and in the other toward it, that makes the radical difference. And then, also, at closer observation, the bees offer bodily a different sight. Both the diseased and the nector laden ones show the telescopic segments of their hinder parts drawn out the full length, but the first looks greasy and never behaves in the business-like fashion of the latter. And then there is that alternating tremor of its limbs that leave no doubt of the kind of bee under observation.

Driven Out.

Sometimes a stricken bee comes dragging herself out of the entrance by herself; to get away, probably, from the intense activity inside, but more often two or three others, healthy ones, will push and drive her out, in the relentless fashion known to natural history students the world over. Once out there, and left alone, the pitiable little thing starts every little while to drag herself a little farther, but soon lapses again into rest. And bye and bye, a few hours, or a day at most, the little spark of life fades away, her limbs stiffen, slowly she keels over, and all is still.

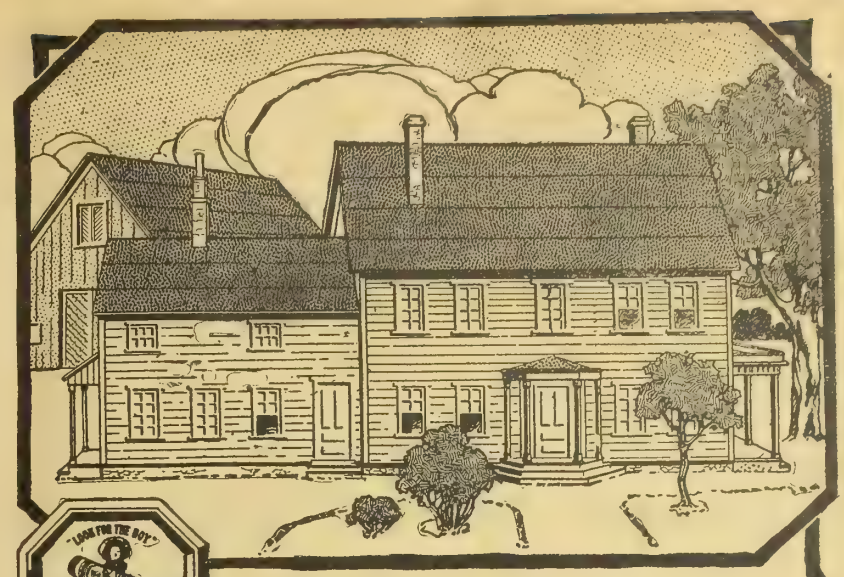
That is paralysis.

As to Cure.

And the cure? Of all bee diseases this one is the easiest to cure, and the simplest. A perusal of the technical literature might, perhaps, suggest the contrary, but a fair trial of the method given below will establish proof.

The first warm sunny noon that happens, go to your diseased colony, take off the lid, give just enough smoke to drive the bees on top of the frames below, then sprinkle about one-half ounce of finely pulverized sulphur over the frames. Shut up the hive warm, have a small entrance, and then leave them alone for three days. After the expiration of that term repeat the operation as before, and if you can spare a frame of hatching brood from some healthy colony give them one, putting it into the middle of the nest. Repeat this second operation in three days to prevent a relapse. For the disease itself, though seemingly cured as early as the fifth day after commencement of treatment, has latent possibilities of recuperation. As soon as any ways handy, give them a young queen, and by the first of May the former eyesore of your apiary will give you double joy—partly because of its healthy activity, but mainly, because the forthgoing of the nursing instinct of the humane spirit in you is granted the spiritual award of almost creative work as your eyes linger upon the pleasing scene.—Henry E. Horn, Riverside, Cal.

A Petaluma rancher recently killed a big California lion on his ranch near that place.



All Farm Buildings

should be roofed with REX—the all-round roof. It keeps the house warm in winter and cool in summer; it protects poultry from damp and extremes of temperatures; it guards stock and produce from wet; it defends buildings against the communication of fire by falling sparks and firebrands.

REX FLINTKOTE ROOFING

is made of long-fibre wool felt treated by our special process. It contains no tar or paper. Heat will not soften it, nor cold crack it. It is laid as easily as a carpet. Everything but the hammer is in the roll.

SEND FOR FREE SAMPLES

We will send upon request samples to test, and our valuable roofing booklet. "Look for the boy" on every roll. See trade mark in upper corner.

J. A. & W. BIRD & CO., 89 India St., Boston, Mass.

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Harrow While You Plow

Make one job out of the two, and get your ground in finest condition by harrowing when the soil is first turned up.

KRAMER'S Rotary Harrow Plow Attachment

enables you to do this. Regular rotary harrow which attaches to any gang or sulky plow. It levels, pulverizes and makes a mulch of the "moist soil" that is not possible after the ground dries and "sets." Draft only slightly heavier—you'll be surprised to see how little. Everybody needs this great time and labor saver. Write for circular No. 84

Deere & Co., San Francisco, Cal. Mitchell, Lewis, Staver, Portland, Ore.

FREE TRIP TO SEE THIS HAY PRESS AT WORK

LOS ANGELES AND RETURN AT OUR EXPENSE

WE PAY YOU TO INSPECT THESE HAY PRESSES.

Instead of paying a salesman's fare to show you a small model of a hay press, we will pay your fare to Los Angeles and return, not exceeding $15.00, to examine our California Special New Century, full circle, all steel, self feed Hay Press and all others on sale there. It makes no difference which hay press you buy, we pay your railroad fare just the same.

When you see for yourself how this machine has been built expressly for heavy baling on the coast, how strong it is, how easy it is on horses, what smooth bales it turns out, you will understand why we make such an offer. It has 7-in step-over, pull power, high baling chamber, positive plunger rebound; it stands up to its work, no taking off of wheels. Has record of 39 tons per day. We will ship you one to try. If you don't want it we will pay freight both ways. Write now.

ARNOTT & CO., 118 South Los Angeles St., LOS ANGELES, CALIF.

Bee Supplies

For the Pacific Coast

We are the exclusive agents for the **A. I. Root Co., Medina, Ohio.** Our hives are manufactured from selected California Sugar Pine. Branch houses at Los Angeles and Elk Grove, Cal. Write for Catalog. We also manufacture orange, fruit and packing shook, drying trays etc. Beeswax wanted.

Madary's Planing Mill,
Fresno, California

Mercer's Weed Process Foundation

If you would be successful with your bees use Mercer's Weed Process Foundation. Absolutely the best on the market. Send me your beeswax to make up.

H. J. Mercer, 948 East Second St., Los Angeles, Cal.
Dealer in All Kinds of Beekeepers' Supplies

When writing advertisers, mention Cultivator.

Best by Test
SUCCESS

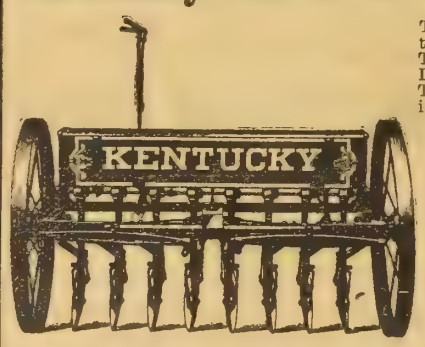
THE GREATEST PROFITS are from the first and best spring chickens on the market. Do not be satisfied with old, easy-going methods. Get the best equipment, produce the best; and make money; the most money. Success Incubators turn out over 90 per cent of the eggs into chicks, and chicks that are full of vim and vigor—the chicks that turn into money fast. Write today for my 1909 "SUCCESS" book, full of interesting lectures and poultry information.

E. E. McCLANAHAN, Manufacturer

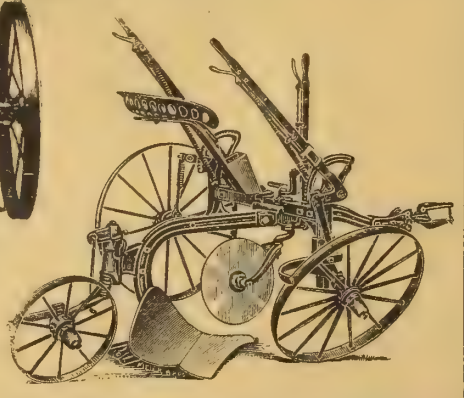
108-12 East 8th St., Los Angeles, Calif.

We sell baby chicks and hatching eggs.

Kentucky Disc Drill Syracuse Sulky Plow



The axle of the Syracuse Sulky Plow is made of two steel bars placed parallel; is above the beam. This is a decided advance in plow constructton. Is a modern plow for modern farming. WRITE TODAY for illustrated circular. Sold by leading dealers or direct by us.



The record of this Disc Drill on this coast has been phenomenal. Its extreme simplicity, strength and general appearance has made it sell. The Kentucky Disc Drill now contains many improvements over its predecessors and many advantages not possessed by any other Disc Drill. Write for illustrated folder. It may mean much to you.

ARNOTT & CO., 112-18 So. Los Angeles Street Los Angeles, California

When writing advertisers, mention Cultivator.

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Australian Onions.

I have some Brown Australian onion seed left over from this season's planting. I am thinking of planting this seed in July or August—about two months earlier than I generally plant in beds. Would I get stronger, better plants, or would it be too hot?—W. W. P.

I know of nothing to be gained by planting the Australian Brown so early. It is wanted for the fall and winter market and planting in July or August would bring it in ahead of time. It is not the kind of an onion the market calls for in early and midsummer. The White Queen would be a better variety for such an early crop.—Q. A. L.

Violets—Roses.

I transplanted my violets last August. Previous to transplanting they bloomed nicely, but while they look well now and are growing and spreading they do not bloom. Some of my roses develop to only about two-thirds and then get rusty and black looking and drop off. Both violets and roses are well fertilized with horse manure that has been well rotted.—J. J. F.

This seems to be a case of too much nitrogen with the violets. So much manure induces a growth of an abundance of foliage instead of blooms. They will likely do better later on and certainly next season, when they will have somewhat exhausted the soil. Withold the manure for another season.

It is difficult to get perfect blooms on the roses during such a winter as the past. The mean temperature has been too low. On the approach of warmer weather one may expect better results. It is an error to try and get roses from the same plant the entire year. Allow the plants to rest the latter part of the summer by withholding water and late in the fall or in the early winter cut back very severely and fertilize well in February and March with stable manure. This treatment will give an abundance of fine blooms from April to July.—Q. A. L.

"Beer Seed."

Before the civil war, while residing in the southern states, we had a plant that grew under water which was called "California Beer Seed" from which we made a very good tasting home-brewed beer. Since coming to California in 1875 I have never encountered the California product nor do I know what that vegetable growth was which made good beer every day by adding a small quantity of molasses and enough water to make a day's supply. Will you kindly inform me what that vegetable was and if any of it is now grown in California?—W. F. H

We do not know and have been unable to learn from many whom we have inquired what beer seed may have been. Will our subscribers inform us, if there are those who have ever grown this seed.

Hillside Grass.

What kind of grass is best to plant on a hillside too steep to be farmed with success. We want to put something there for permanent pasturage and as the soil is good and the rainfall abundant in this section, it seems as though there ought to be something that would do well. Would paspalum succeed there? Is there any kind of leveler or roller that would do well on a steep hillside? Even a harrow slips down hill in vineyard work.—Mrs F., Santa Cruz.

This question is one of the hardest to answer which comes to the office, and similar ones come often. The plant which will give luscious, abundant feed without irrigation in California is usually scarce. Under the conditions which our subscriber gives, we believe we would try alfalfa as an experiment. It is probable that large returns would not be had, but we have seen alfalfa grown on the hillsides where the rainfall was abundant and the hill rose above the field in question so as to give considerable moisture to the sub-soil. We would try the paspalum. The inquirer asks as to how rye grass and esparcet or a German clover will do. We cannot learn that this last-named grass has been grown to any extent, though it has been in this country for the past 150 years. Where it has been tried it has not been giving satisfactory results, but Prof. Bailey suggests that inoculation with beneficial bacteria may secure more satisfactory returns. It seems that it is a plant that requires well drained soil if under irrigation. Under proper conditions it is in no sense equal to alfalfa. We know of no roller or leveler which will work on a hillside without sliding down.

Eucalyptus.

I have ten acres of sandy loam sub-irrigated. I wish to plant, if profitable, to eucalyptus, and how should the seed be planted? How may I procure the proper varieties of seed. What varieties would be most profitable?—Subscriber, Newman.

If our subscriber has ten acres of good sandy loam near market, subirrigated as he states, we believe it to be too valuable to give up to timber culture. However, in that section, if he wishes to get good returns from this valuable timber—if the temperature never goes below 17 or 18—it is probable that the blue gum would be the best variety. At least it has been tested and known to do well in this state and to be a most valuable lumber. Different varieties of seed may be had of any of the seedmen advertising in the Cultivator.

Spring and Summer Term
at the Polytechnic Business College

Oakland, California

Great Business Activities are Resuming

Opportunities for trained young men and women are now opening up and success awaits every earnest and ambitious graduate of the Polytechnic Business College.

Every graduate of our **complete business training course** for ten years has secured remunerative employment.

Now is the Time to Plan for the Future

Write for free illustrated catalogue and kindly mention the "Cultivator."

Girdled Orange Trees.

In working about my orange trees, I find a half dozen that have been completely girdled by gophers, some being 12 or 14 inches above the roots. Bark has been entirely removed.—A. B., Sanger.

If as soon as discovered the trees had been treated by packing with mud and kept moist continually until healed over, it is probable the new bark would have formed by granulation. After this time, however, and if the wound has dried over and the wood hardened, the only plan of saving the trees will be to use small scions cut from the top of a thrifty tree and these used to in-arch between the bark at the roots and above the wound. By doing this and making careful cuts so as to bring the inner layer of bark against the inner layer of bark of the old tree, it is possible the trees may be saved. Four or five scions, or even more, may be used around a good-sized tree.

Peanuts.

What kind of soil is best for peanut culture? Will they do well in this climate? When should they be planted?—L. L., Yolo County.

The peanut requires a light, sandy soil, one which will not pack after irrigation. The time to plant is when the ground is warm and the danger of frost passed, depending on locality. Plant as you would beans as to depth.

Fertilizer Spoiling.

Please tell me whether any kind of fertilizer will spoil and how long they will keep.—B. P., Los Angeles.

We hardly know what our subscriber means by "spoiling." Nitrate of soda gathers moisture and may possibly leach away if near the coast or where the air is filled with moisture. Any fertilizer, stable manure, or whatever it may be, if exposed to the rain leaches away and loses its fertility by that means. Stable manure when exposed to the sun loses much of its nitrogen and humus. Commercial fertilizers, however, sacked or carefully preserved under cover, so far as we can say, would be as good ten years from now as today.

Sour Orange Seed.

May sour oranges be planted any time in April for nursery stock?—A. J. B., Calexico.

Yes, April is a good month in which to plant orange seed. Plow or spade the ground thoroughly and deeply. Seed may be broadcast or drilled as you prefer. After seed is scattered, cover to the depth of an inch with sand which has been thoroughly screened, or before the sifting of the sand the seed may be covered with a thin layer of very fine garden soil. This will hasten the germination process and keep the moisture better than does the sand alone. Of course it would be necessary in your section to protect trees carefully against the burning sun. The lath house or cotton cover will be necessary for this.

A large number of queries appear this week, the answers of which have been delayed by illness of Mrs. Sherman.

Forcing Cows to Dry Up.

I have two cows coming in the last of April. They are giving two gallons a piece each day. How can I dry them off quickly? Should a heifer coming in with her second calf be milked right to the time of calving? I take the Cultivator and think highly of it. —A Subscriber, Long Beach.

Rub the udder with camphor water and leave the last of the milk in each time say half a pint and the cows will dry off rapidly. No! only when the cows do not fall below four gallons a day of milk do we milk them right up to calving time. Ordinarly cows do not make all the year milkers and are not injured by forcing dry.—M. E. S.

Garget.

My Jersey has been fresh since the 1st. of January and only one teat appeared to have a large flow of milk. The milk from the other three teats were thick and sometimes cheesy and very yellow. She is in fine alfalfa pasture with plenty of alfalfa hay to eat at night. On examining the udder we find each teat that is not giving good milk to be hard or lumpy pretty well up into the udder. Now what will we do to relieve that and bring them back to their milk. We keep them milked out dry and there always seems to be some milk coming in from the three teats. She will give a little over a pint each milking while from the good teat she gives a good gallon. The bad milk is quite clear at night, but in the morning gets thick and cheesy when we milk.—Desert Farmer.

This cow has had garget. The teats that do not give good milk may possibly be helped by injecting them with warm water containing a teaspoonful of baking soda to each quart. After five or ten minutes milk out the teat as clean as possible. The udder may be rubbed well with warm lard, rubbing for five full minutes and kneading it gently. Even if these teats should not straighten out this time, the next time she is fresh they may come all right. The feed has little to do with garget, but it is the result of cold or of bruising by rough milking. —M. E. S.

Possibly Cow Pox.

I have heifer which has been giving milk about eight months, her teats have changed color from white to dark purple and keep scabbing and pealing off. She is continuously kicking at her sides. Can you tell me the cause, and remedy.—M. D., Imperial.

Probably cow pox, this should be treated by rubbing on some bland ointment or vaseline to heal them up. Should there be any indication of infection or pus a perioxide water should be used first and then the vaseline. Some times a dusting of powdered charcoal is all that is needed to heal these teats. I should use a milking tube until the trouble is better, for the heifer must suffer considerable pain when milked.—M. E. S.

Grapes Not Bearing.

Have about two acres of Emperor grapes, a few vines bear well every year, the rest are very light bearers. They all bloom and make a strong growth, I used to sulphur twice—first in bloom—second when as large as shot. The last two seasons have sprayed them with Rex and some with bluestone with the same results. Pruned long, five to seven buds on a spur—from three to five spurs to a vine, of course according to size. I tied to a three or four foot stake. While this variety is light, Tokays and Cornichon in the same field bear well.—H. S., Weimar.

The first place these Emperors are pruned rather shorter than usual. The vines should be on six-foot stakes and pruned to five feet tops, with spurs all the way up from the first eighteen inches from the ground. As the heads are formed with these vines, I should, if they were mine, put a single wire from stake to stake and extend out one arm two to three feet on each side of the vine and then prune the laterals back to three buds on arms, in this way giving the vine more chance to grow. The Emperor however is a peculiar vine and some strains are not fruitful. The above is given as a suggestion, not as a sure remedy.—M. E. S.

Sorghum.

Will you please advise me when to plant sorghum for silage to be mixed with Indian corn; also as to preparing the land. How deep to plow and distance rows should be apart. Seed per acre and best seed to plant.—C. E. G., Hynes.

Sorghum is planted as soon as frost danger is past. The plant is only delicate at first and the old roots often go through a season coming up the next year as bright as ever. It is always a slow grower at first and seems discouraging, after it is a foot high however it makes one rub his eyes. It grows so fast that you fancy you are dreaming not seeing the field that you looked at last week.

The land is plowed and harrowed smooth and the sorghum put in with the corn planter in continuous rows, each row three feet apart. The land is kept cultivated between the rows and all weeds kept out. The early Amber is the regular variety and is found in any of the large seed houses. The sorghum may be cut when it is three feet high and if not cut below the lower joint it will come up quickly again and make abundant feed. After each cutting irrigate and cultivate.—M. E. S.

Summer Manure Crop.

I observed in a recent "Cultivator" that you speak of growing green manuring crops in your orchards during the summer season.

I would feel much obliged if you would kindly state what variety of legume you find most satisfactory.—W. B., Orange.

The Black Eyed bean and the common cow pea. These do best with us in the heated season and the black eyed bean we find fully as desirable as the cow pea and often the seed is more readily obtained in this market. —M. E. S.

Sorghum For Shade For Poultry.

Would you advise me to plant sorghum in the chicken yard as a shade from the hot sun and a protection from the wind of this part of Arizona? Do you think chickens would be as liable as cattle to be poisoned by the prussic acid in the stunted plants? Would it serve as green feed for chickens?.—Subscriber, Douglas, Arizona.

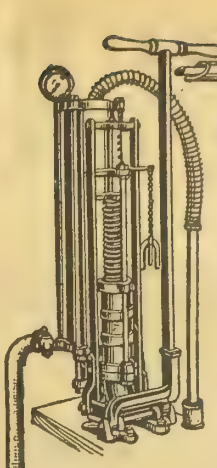
That prusic acid is a remote source of danger as far as we know has never been found in California. The few times it has occured in the East are practically not enough to cut any figure. If sorghum grows with you it would certainly furnish feed, but it is a slow grower at first and if I were going to use it for the purpose of shade I should plant some kafir with it. This Kafir corn and milo maize have not had the tryout they should in this state, I believe from the way they have stood hardships in this ranch that they will be found valuable in heat and drought.—M. E. S.

Plant six pounds of seed of either sorghum or kafir corn, in drills, to the acre.

Essex Hogs.

Please let me know if there are any breeders of thoroughbred Essex hogs near San Jose.—C. P., Campbell.

We do not know of any breeder of Essex in that section, but if any of our subscribers of Santa Clara county do, will they kindly inform us.



Saves One-Third the Labor

Wouldn't you like to cut your labor expense an even third? You can do it on your spraying —and this advertisement tells you how. What's more, the work will be done more quickly and better. Use

Bean Magic Spray Pumps

The Bean patent spring (shown in the cut), divides the work; the operator does half at each stroke of the handle, and works against but half the pressure indicated on the gauge. Bean Magics are built in two sizes; both have non-clogging ball valves, porcelained cylinders, and other exclusive Bean features. They're the easiest running, least troublesome pumps on the market.

Our illustrated catalog No. 21 describes ten sizes of hand pumps, and contains much valuable spray information and formulas. Catalog No. 22 describes Power Sprayers. Both books sent free. Write for our special offer; mention number of acres and kind of fruit.

BEAN SPRAY PUMP CO.
212 W. Julian Street
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Hydrated Lime

SAVE MONEY

Taylor's Sulphur Hydrate Mixture
Will give better results than sulphur alone
$20.00 per ton net in 100-lb. Sacks

Dry Spray--Taylor's Hydrated Lime
For Fungus and Red Spider
$15.00 per ton net in 100-lb. Sacks

W. H. TAYLOR 846 Commercial St. Los Angeles, Cal.

Three Stroke Self Feed Hay Press

Two men can run it. All steel and iron. Smooth bales. Easy draft. Satisfaction guaranteed. Free trial. Ask for Catalogue 28.

The Auto-Fedan Hay Press Co.
1521 West 12th St., Kansas City, Mo.
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J. C. Gordon, Box 167, Sacramento, Cal.

WANTED 50,000 Agents.

50 PACKAGES FLOWER SEEDS, 50c.

How to Make Money Easy. You can sell these HIGH GRADE SEEDS at 5c. each to your neighbors, and make $2.00 for your trouble, for only a few hours' work. This is a grand chance to make money for a small investment. Some of our agents have cleared $200.00 in cash. Send 50c. and we will send the seeds at once, delivered to you, postage paid. Order early. Address
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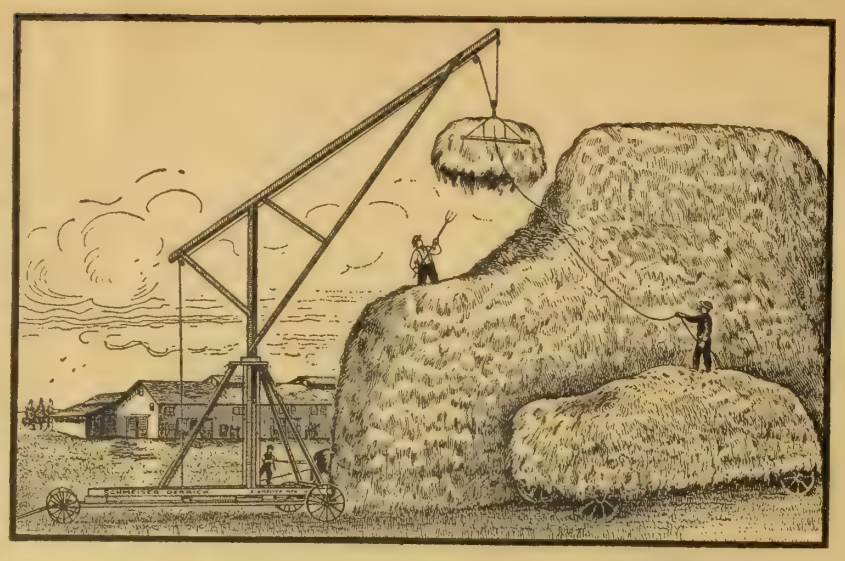
Improved Casaba Seed

I am the originator of this superb melon. It is reasonable to suppose I have the best seed. The melon is the best. The seed is the best. Price $2.50 per pound, or 25c an ounce.

J. C. Oestergard
Burbank, Cal.

The Schmeiser Portable Automatic Derrick

The State is Using a Number of These Derricks on the Experimental Farm, at Davis, With Great Success.



No Guy Ropes Required

Any kind of a fork or a net may be used, whichever may be desired.

You can not afford to be without it. Will pay for itself the first season, every year after that doing your work for nothing. Write for descriptive circular and we will tell you how it can be done.

Schmeiser Mfg. Co.
Davis, California

General Agriculture

GROUND LIMESTONE FOR ALFALFA AND CLOVER.

Eastern farmers are finding that limestone is necessary to best results from alfalfa and in many papers we note reference to its beneficial results. California soils are generally very rich in lime so that the grinding and use of limestone will probably not be resorted to. However, we clip the following from Hoard's Dairyman:

The conviction is being forced very rapidly that a dressing of two to five tons to the acre of ground limestone has a splendid effect on alfalfa and clover. Indeed, in many instances, where these plants were unsuccessful to a large degree, such application brought them forward in fine growth.

The reason for this is found in the fact that the soil had become too acid to allow the bacteria these plants need to develop. In a great many instances, in the older farming districts, the soil has become acid. Of course the farmer is not aware of this important fact unless he has tested his soil with litmus paper. Should he make the test, he will be surprised to find that those fields, where alfalfa or clover do not do well, will show acidity, particularly a foot or so below the surface. This is the reason why the ground limestone makes such a change for the better.

Then, besides, both clover and alfalfa are very greedy for lime. We have noticed, in several instances, where alfalfa was flourishing finely on some high knoll, where the lime rock nearly cropped through, when in the lower and richer parts of the field, it did not do well. Now, it is a simple, practical thing to supply this ground lime rock. The material is not expensive, costing about 60 to 70 cents a ton. Then again, in any section where limestone abounds, it would be practicable for a few farmers to invest, say a thousand dollars, and buy the rock grinding machines and thus supply themselves with an abundance of this valuable material.

Acidity in the soil affects all crops more or less. If it can be cured by such simple means, why not set to work in an enterprising way and do it? Everywhere that it has been tried fine results are reported. Hoard's Dairyman farm is expecting to try a carload of the ground limestone next spring. It should be scattered on the surface of the land when ready for sowing or planting. We plow under the phosphate with manure, but apply the limestone at the surface so that its sweetening effect may take place, as it dissolves and leaches down in the soil. The rock is ground to a very fine powder.

The Orange County Celery Growers Association has signed a contract with the California Vegetable Union for another year's marketing of its celery under conditions same as last year's contract.

WHAT IS THE DAVIS BILL?

The bill provides for an annual appropriation of about $9,000,000 for instruction in mechanic arts and home economies in secondary schools of towns and cities with above 2,000 population. Instruction in agriculture and home economics in 300 to 400 agricultural secondary school, one in each district of not less than 5 nor more than 15 counties. A branch of the experiment station of the state at each agricultural secondary school.

The national appropriation is restricted to studies in agriculture, mechanic arts and home economics in the respective schools. States and school communities required to pay for buildings and other studies.

Each incorporated city, town or village with more than 2,000 inhabitants will receive 10 cents per capita for instruction in mechanic arts and home economics. The total rural and village population will receive 10 cents per capita for instruction in agriculture and home economics in agricultural high schools, practically one in each congressional district.

Each state will receive one cent per capita annually, to be used by its state normal schools to prepare teachers to teach vocational subjects.

Each state must divide its territory into district of 5 to 15 counties, and to establish in each a high or secondary school of agriculture and home making, with a branch of the state experiment station.

Each state and territory to receive one-fourth as much money for branch experiment stations on its agricultural high school farms as it receives for these schools; and is required to appropriate for the use of these branch stations at least as much as the United States Treasury provides.

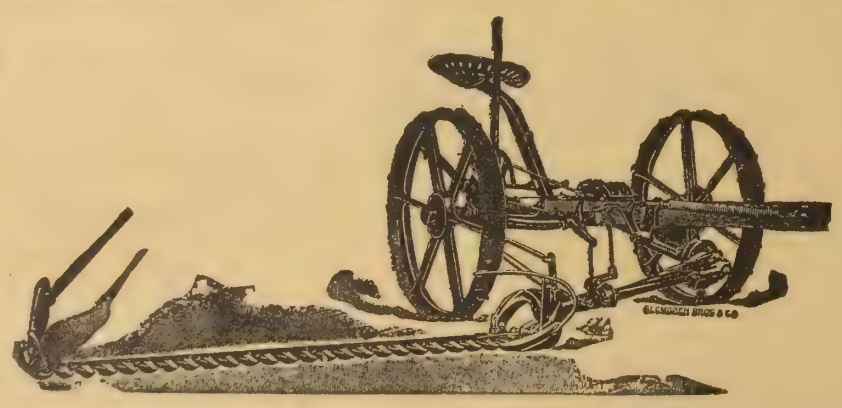
Then follow provisions for the administration of the law, which will not be of interest until enacted, and schools are about to be established. It will be seen that this is a very elaborate comprehensive, even ambitious educational scheme. It is not proposed, it seems, to make the system obligatory upon states; any state can adopt it if it cares to assume the expense, which will be little or much according to the number of schools established. The kind of education it is proposed to give is highly important, since it will teach how to do things as well as how to know things, a sort of education which should be common to all schools.

If the experiment stations provided for are to be such in the same sense that state experiment stations are, this feature of the proposed law is unfortunate. Experimental work, to be of any practical value, involves research or scientific ability of a high character, which manifestly is not attainable in the quantity that a multitude of stations would demand. If, on the other hand, by experiment stations is meant practice stations or grounds, where field work may be made to supplement agricultural classroom work, then the proposition is all right.—Exchange.

The lemon growers are pleased with the possible increase on tariff on lemons from one to one and a quarter cents.

The Cost of the best Mower is lower than the cost of the cheapest Mower at the end of one season's use.

The best Mower gives the best service all the time.



The New Standard Mower

TIME AND LABOR-SAVING DEVICES and DEVICES FOR PREVENTING FRICTION found only on the NEW STANDARD MOWER.

The floating cutter-bar provides a frictionless channel for the knife and prevents wear on the guards. The guards are protected by chilled reversible rails, found only on the NEW STANDARD. Sixty cents will replace an entire set of rails on a five foot bar. To replace only two guards on other mowers will cost as much.

All shafts run in detachable sleeves and there is no wear on the main frame. The benefits of this construction more than warrants the cost.

A force-feed cup grease oiler is part of the pitman box. The screw cap is held in place by a spring and cannot work loose. One turn of the cap supplies ample lubricant and overcomes hot boxes and delays incident to the use of fluid oil. Hours are saved during harvest (when hours mean money) by this device, found only on the NEW STANDARD.

These are only a few of the prominent labor and time-saving devices which decrease the operating cost and add to the life of the NEW STANDARD MOWER.

Our illustrated Hay Tool Folder describes these features in detail and also tells why the New Standard Mower is the Easiest Running, Most Powerful Cutting and Longest-lived Mower made. Write for the folder today.

Newell Mathews Co.
200 North Los Angeles Street
Los Angeles, California

Imperial Valley, as it was. Courtesy Calexico Chronicle.

GRAIN WEEVIL.

The best way to destroy the grain weevils in your granary is to fumigate with carbon bisulphide. The building must be made, as nearly as possible, airtight. Use one pound of the carbon bisulphide to every 700 feet of space, or one pound to every 100 bushels of grain. The liquid should be placed in shallow pans or dishes as high in the bins or building as possible, since the vapor is heavy and settles to the lower parts. The liquid should be well distributed, having not more than a half pound in a place. Allow the building to fumigate from twenty-four to thirty-six hours, after which open and air thoroughly. Caution—The vapor of this liquid is highly inflammable and explosive when ignited. No fire or light of any sort should be allowed about the building while the fumigation is in progress.—Farmer.

DRY FARMING.

While the Dry Farming Congress is in a sense a new organization its importance as an economic movement is easily estimated from the fact that when the irrigation water has all been impounded statistics show that water can be placed upon but one-ninth of the available and well-located agricultural land. Even the most skeptical critics of the effort to populate the unirrigated lands are now beginning to admit that in the face of their constant claims that failure would surely follow attempts at so-called "dry farming," the crops from unirrigated farms—both experimental and operative—have "made good" the claims of the "dry farmers."

Supervisor Slosson of the Santa Barbara Reserve has issued over 200 grazing permits. The range is reported in excellent condition.

Imperial Valley soil produces this kind of corn after $400 per acre had been taken off of it from cantaloupes if water is applied

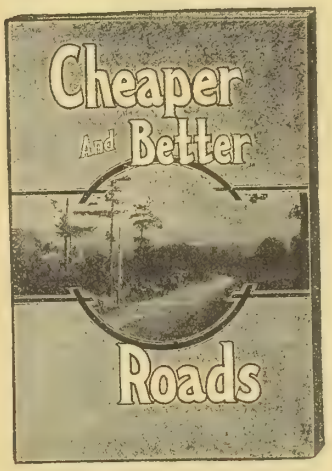
Harness leather becomes hard, brittle, unsafe, when the pores in the leather are open to wind and moisture. An application of

EUREKA Harness Oil

fills the pores, seals them against these hardening, rotting agencies and keeps the harness a beautiful black, soft, elastic, and tough. Eureka Harness Oil does wonders for a harness. Ask your dealer.

STANDARD OIL COMPANY (Incorporated)

New Book for Irrigation Farmers



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20TH CENTURY GRADER

for ditching, drainage (shallow or deep) lateral making and cleaning seed-bed and field leveling, borders, levees, road grading, etc. It's true. Address **BAKER MFG. CO.** 731 Fisher Bldg., Chicago, Illinois

GERMAIN'S Eucalyptus Window

A study in Eucalyptus from the seed to the polished wood. The most complete and instructive exhibit ever shown in the country—200 square feet. Don't fail to see it if you are interested in EUCALYPTUS. Literature free.

GERMAIN Seed & Plant Co.

326 S. Main St., Los Angeles

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Tomato Plants
Cabbage Plants
Pepper Plants
Cauliflower Plants
Onion Plants
Egg Plants
Kale Plants

Write us for prices.

Hickey & Vonsen, Inc.
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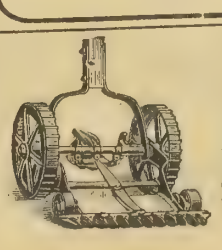
EUCALYPTUS

Choicest varieties of Trees for Transplanting. I can supply best stock—grown on the Chino Ranch—in any quantity, at $10 a Thousand. F. O. B. Chino. For further information address

W. B. Thompson
Chino, California



THE CLIPPER
Will cut tall grass and weeds and do all the trimming along the walks and drives. Your dealer should have them—if he has not drop us a line and we will send circulars and prices.
Clipper Lawn Mower Dixon, Illinois.

Classified Liner Columns

Rates 1½ cents per word per issue. No ad. accepted for less than 25 cents. Our classified columns are the clearing house for the readers of the Cultivator. Here you can insert an ad. for the small sum of 1½ cents per word per issue, and be sure that it will be read by thousands.

FARM LANDS FOR SALE.

FOR SALE—160 ACRES, 130 ACRES choice orange land, balance A-1 pasture in warm belt, 8 miles east of Porterville; 5-room house; 2 barns, land fenced in 3 fields; plenty of well water at 60 feet. Lies on main public road; good school close; large packing house within ½ mile; orange groves all round; will be valuable property in near future; two power lines. This land can be had for $50.00 per acre of owner, O. P. OSBORN, Porterville, Cal.

FOR SALE—Price $3000. NICE mountain ranch, 162 acres, five miles from Napa, 35 acres in cultivation, rest good pasture and timber, 700 cords wood sell for $7.00 a cord in Napa; good house, barn, chicken houses, 3 horses, cow, chickens, wagons; family orchard, water piped all around; all tools; close by county road. MR. P. J. FOGARTY, R. F. D., Napa, Cal.

RANCHERS, ATTENTION—OUR SPECIALTY, oranges groves and ranches. If you have one to sell or exchange, list with us. We have many customers, who wish to buy and exchange for country property. Los Angeles Purchasing Co., 404 Chamber of Commerce, Los Angeles, Cal.

TULARE CITRUS BELT—WE HAVE the cheapest and best orange lands right here. If you want reliable information about this glorious country, write STRATHMORE REALTY CO., Strathmore, Tulare Co., Cal., between Lindsay and Porterville. Excursion fares from Los Angeles, Cal.

FOR SALE—PALOMITAS VINEYARD 194 acres; 106 planted to choice Emperor, Malaga and Muscat vines, 3 to 5 years old. Part or all. Half cash, balance on easy terms. MRS. M. E. SHERMAN, Fresno, Cal.

ORCHARD HOMES FOR SALE—FIVE acres and upwards; fine citrus and deciduous fruit lands on easy instalments and low interest. Write us today. WYATT & WILSON, Winters, Cal.

TULARE COUNTY ORANGE BELT—Orange, deciduous fruit and alfalfa lands, both irrigated and dry in five acre tracts or more. Five years to pay. Will build for you. Address, J. W. NEWBERN, Delano, Cal.

I MAKE A SPECIALTY OF ORANGE and alfalfa ranches and exchanges. 826 Main St., Room 9, Riverside, Cal. N. R. BELL.

SEED.

FOR SALE—CALIFORNIA BLACK walnut seed in sack lots. Wanted: Mayette, Franquette and Parisienne Walnut scions, also Rupestris St. George, Rip. x Cord. x Rup. 106-8, Rip. x Rup. 3306 and 3309 cuttings, grafting size. Address FANCHER CREEK NURSERIES, Fresno, Cal.

FOR SALE—ORANGE SEED SELECTed from choice groves, can supply any quantity at reasonable prices. K. W. LATTIN, 20 West 4th St., Alhambra, Cal.

HORSES.

FOR SALE—ABOUT 200 HEAD OF work and brood mares, including young mules and horses from one year to four years of age. One full blooded Percheron Stallion four years old in May. One Jack about seven years old. Several full blooded Poll Angus Bulls and a number of full blooded Durhams. CHAS. W. HART, Farmersville, Cal.

FOR SALE—GOOD RANCH TEAM, weight 1200 lbs. each, cheap. Also a good ranch and hay baling outfit. Address, C. E. GARRETT, Hynes, Cal.

FERTILIZERS.

NOW IS THE TIME
to fertilize for results in the coming crop.

ARMOUR'S "O.T.M.", "B.B.&P.", and "5-8-2" grow big crops and build up the soil. They have been doing it for years.

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CHINESE PHEASANTS EGGS, $3.00 for 12; $6.00 for 30; Goldens eggs $4.50; express prepaid. Magnificent book, "Pheasant Farming," 50c, beautiful booklet, 25c. (Send coin.) DILLAWAY'S PHEASANTRIES, Everett, Wash.

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M. E. DILLINGHAM, SAN GABRIEL, Cal., is selling out: About 20 golden Seabright Bantams, $2.50 per pair; 7 pairs Black Tail Japs, $2.50 per pair, all Partridge Cochine Bantams same price; 1 trio Black Breasted Red Game Bantams, $3.00; Buff Cochin Bantams, $2.50 and up per pair; and also 1 pen White Wyandottes, 1 male and 10 pullets, $12.00.

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WHITE MINORCAS (EXCLUSIVELY), standard bred, prolific layers, large white eggs. Eggs (after April 1st) $1.25 for 15; $3.00 for 45; $5.00 for 100. L. V. PETERSON, Guerneville, Cal.

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Mr. Allen calls his implements the "Planet Jr." from the resemblance of certain of the implements to the planets revolving around the sun.

Mr. Allen's ingenuity shows itself in every one of the forty-five kinds of Planet Jr. Farm and Garden implements, which he makes. For instance, the No. 25 Planet Jr. Hill and Drill Seeder, Double-Wheel-Hoe, Cultivator and Plow combines every useful garden tool in one strong, light, easy-running, simply-adjusted implement that does the work of three to six men working in the old-fashioned way.

The results obtained with these implements are simply marvelous compared with old-time methods. Their merit and popularity is shown by the two million users of these implements at the present time, and the enlargement of the factory which has been made necessary to supply the increasing demand. S. L. Allen & Co., of which Mr. Allen is head, is the organization which now makes these implements, and they have issued a new 56-page illustrated catalogue of Planet Jr. implements for 1909, which they are sending free to those who write to S. L. Allen & Co., Box 1106 P, Philadelphia, Pa.

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Policy to set out a good tree, costing good money, and then let the sun burn the bark or the rabbits gnaw it, when for $1 an acre you can get Yucca Tree Protectors that are practically indestructible. Write for free sample of the wrap. Yucca Manufacturing Company, 1380 Willow street, Los Angeles.

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At 10 O'CLOCK A. M.

Take S. P. train leaving Los Angeles Arcade depot at 8:05 a. m. to Chino.

45 Fine Dairy Cows mostly Holsteins, a few good Jerseys and Durhams, all young and in good condition, fresh and coming fresh, large, rich milkers, in fact one of the best herds of dairy cows in Southern California.

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Owner is retiring from the dairy business, closing out his entire herd and everything will positively go to the highest bidders. NO LIMIT OR RESERVE.

TERMS:—6 months' time will be given with note and approved security and 8 per cent interest on sums over $50. 5 per cent discount for cash on time sums. Free Lunch at Noon. Don't miss this genuine closing out sale.

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Household Department

DON'T KNOCK.

Don't think yourself a censor for the silly human flock,
And just remember as you go, that any fool can knock.

Don't laugh at those who make mistakes and stumble by the way,
For you are apt to follow them—and almost any day;
Don't think the others shifting sand, while you are solid rock,
And don't forget, for heaven's sake, that any fool can knock.

Don't be a puller-down of fame on other men conferred,
Don't give a parting kick to one who fell because he erred.
Don't think that you are perfect and the only size in stock,
And now, once more, just bear in mind that any fool can knock.

—Becktash Bugle.

A SLIGHT MISCALCULATION.

THE young man with the beetling eyebrows and the assertive necktie paused to knock the ashes from his pipe.

"Who'm I going to take to the theater party?" he echoed. "Why, I don't mind telling you that I'm going to take Ethel!"

"Oh!" said the other young man whose quietness was his noticeable characteristic. "Have you asked her?"

The young man with the necktie looked faintly surprised. "How'd you know I hadn't?" he inquired. "I'll telephone her tonight. I was so busy all day I didn't have a chance. Besides, there's no hurry. There isn't anyone else likely to ask her but you, and now that I've spoken first of course—"

"Why, of course!" agreed the quiet young man. "I shouldn't dream of interfering with your plans."

"That's one thing I like about you," confided the young man with the tie. "Some fellows don't know when they're licked, but you've got common sense. Oh, I was just speaking generally. There are fellows, you know, who'd 'a' sneaked off and phoned Ethel before I'd had a chance. Of course, though, I don't know that you're so awfully keen on going with her yourself, only you've gone to see her a lot."

"Yes, I have," agreed the quiet young man.

"I've been so busy lately I haven't been around to see Ethel as often as usual," said the young man with the tie. "I expect she's sore about it, but this theater party and some flowers and candy'll fix things all right! I know girls!"

"You do, indeed," agreed the quiet young man. "She was speaking about you only the other evening."

The young man with the tie tried to look unconscious. "Was she?" he asked carelessly. There was a silence. "Say," he broke out at last, "I don't mind telling you—we're old friends and you are sort of one of us, you know—I don't mind telling you that I'm going to marry that girl!"

The quiet young man stirred into surprise. "Ethel?" he queried, explosively.

"Uh-huh," said the young man with the tie. "I expect you are kind o' surprised. I flatter myself that I don't let on to the general public just what I intend to do, but I've been thinking it over for a long time and I've decided she's the girl for me!"

"Oh!" said the quiet young man more calmly. "I see. You—you haven't asked her, then?"

An Imperial Colt.

The young man with the tie shook his head.

"Are you going to telephone?" his friend inquired with innocent interest.

The young man with the tie looked a trifle suspicious, but decided that nothing was meant by the question.

"Well, no," he admitted. "I hadn't thought much about it. I didn't decide till just recently. I'm not going to jump into a thing like that in a hurry and be sorry ever after. I know what I want in a wife. Now, Ethel is not too pretty, you see—she can't be vain about herself, and a vain woman is always selfish. I abominate a selfish woman! All she thinks about is herself and her own comfort. I want some one who'll consider me first. It's right that the man who provides the home and works for it should be considered first!"

"I see your point," said the quiet young man.

"Some fellows never think of those things. Ethel isn't everlastingly chattering, either. She would give a fellow a chance to do a little talking himself. Most girls think the only thing of importance is what they have to say. Did you ever notice how Ethel will sit and listen with her head

Less Work— Dainty Dishes

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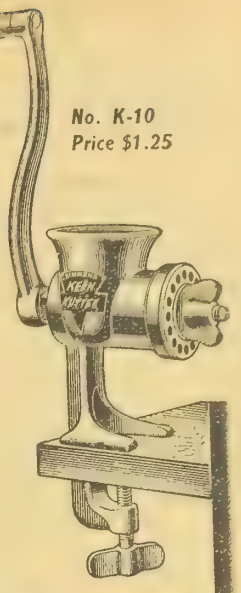

No woman realizes how much work she could save, and the tempting variety of dishes she could offer at the table, until she possesses a Keen Kutter Food Chopper.

Just a few turns of the handle instead of the tiresome chop, chop at the chopping bowl. Meat, fish, vegetables, fruits are chopped uniformly, coarse or fine as you wish. The

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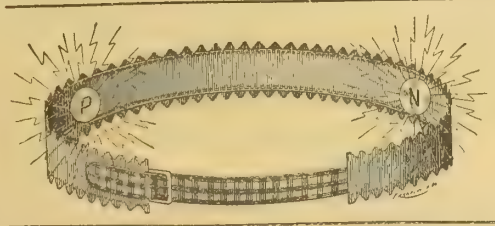

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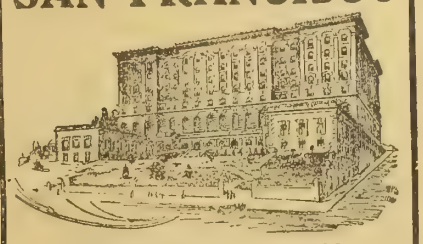

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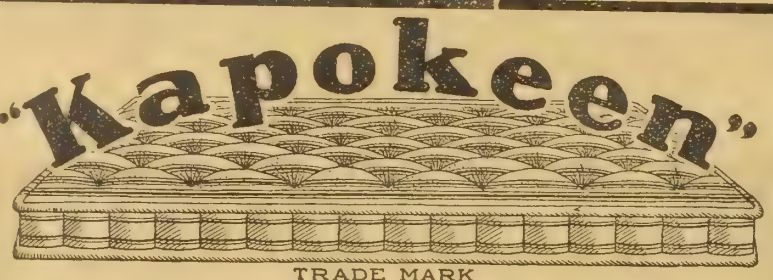

TRADE MARK

The Mattress of Quality

In introducing our Kapokeen Mattress to the readers of The Cultivator, we are taking the first steps toward establishing a National reputation and market for an article, which, on account of its many advantages, has gained a pre-eminent position in its own vicinity.

"Kapokeen" is made from the Kapok or silk floss obtained from the bean of the Eriodendren tree, grown on the island of Java. It is prepared by our own patented process, which removes every particle of seed and preserves in full the resiliency of the natural fibre.

The mattress is made in our own factory where every precaution has been taken to insure absolutely hygienic conditions, by skilled workmen using only the best quality of materials throughout.

NOTE THESE POINTS.

Kapokeen can be "made over" in exactly the same manner as hair.

Kapokeen is sun dried, sun cured, and free from chemicals or other foreign substances.

Kapokeen, no matter how long it has been in use, by being placed for two hours in the sun, will expand and become as resilient as a new mattress.

Price *No. 1 Kapokeen Mattress, 4-4 size, 5 1-2 inch box, Imperial edge satin ticking* **$15.00**

Three-Quarter Size, $12.50 *Single, $10.50*

Kapokeen Mattreses are made only by

John Breuner Co

A postal will bring you a little booklet describing this mattress

Sacramento, Cal.

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The lamp as shown in cut burns 22 hours on 3 quarts of oil.

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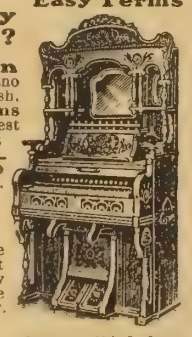
The most beautiful piano and organ catalogue issued; it shows the choicest of our 50 latest styles and explains things you ought to know whether you buy from us or elsewhere. The book is yours for the asking. Write for it now.



Save one-third—buy on the Cornish plan.

CORNISH CO. Washington, N.J. Established Over 56 Years

When writing advertisers, mention Cultivator.

one side, as if she was so interested—kind of amused?"

"I don't believe I ever did," said the quiet young man.

"Perhaps not," said his friend with the assertive tie. "You probably haven't had as long talks with her as I have. She always listens that way when I talk. That girl is intelligent, and when she gets a chance to listen to conversation that's worth while she does it without interruption. I think she's economical and a good housekeeper. Don't you?"

"I have great admiration for Ethel," declared the quiet young man, "but I never exactly figured out her good qualities as you have done."

"Well, that's natural; you didn't have the idea in mind that I did," said the young man with the tie.

"No, indeed I didn't," said the quiet young man with a fervency that caused his friend to look puzzled.

"You see," went on the quiet young man as he got into his coat, "I believe if I were you I'd not waste a nickel telephoning Ethel. She promised to marry me a week ago and I rather think she expects me to be her escort to that theater party. Good night."

The young man with the violent tie sat staring at the chair which had been occupied by the quiet young man.

"I'd like to know," he said at last, "just what it was she said when she spoke about me the other evening! Come to think of it, I believe his tone was sarcastic when he mentioned it!"

About the House

SOMETIMES when cooking asparagus, before the tough stringy ends are sufficiently tender, the delicate tips are done to ruin. This may be avoided by cuting the stalks all of equal length, and fastening them securely, after which they are stood upright (stalks downward) in a kettle of boiling water, the water coming two-thirds of the way up to the tips. Now adjust the cover closely and boil for about thirty-five minutes, the tips being cooked by the steam alone. Every particle of a bunch of asparagus may be utilized. The coarse ends make a delicious cream sauce or soup, while portions of the vegetable left from a previous meal may be converted into endless salads, souffles, etc.

An asparagus "rabbit" or "rare bit" may please some of the Cultivator readers. Lightly toast and butter thin rounds of whole wheat bread, covering each with a thin layer of cooked asparagus, cut in minute pieces; sprinkle with salt, paprika, a few drops of Worcestershire sauce, and a liberal coating of grated American cheese; cook in a hot oven sufficiently long to melt the cheese, but not brown it. Serve immediately with a poached egg arranged on the top of each portion.

One cook's way of cooking rice is to wash the rice in several waters before putting it in a kettle of bubble-boiling water, previously salted. Cook it rapidly in an open vessel; when every grain is swollen and just tender, pour it into a colander and let drain; after which place in oven to dry for a moment. If served as a vegetable it is then ready for the table. If you want it for a dessert or breakfast cereal, heat milk and add to it a beaten egg, flavoring and sugar, and pour over the rice.

A friend dropped in the other day and told me of a "new salad" that she had learned to make while visiting in San Diego this winter. Grind or chop very fine equal parts of celery and carrots and a very little onion. Heap on lettuce leaves or cress and cover with mayonaise. "It is easily made and very good," according to my informant, who is an experienced cook.

In an old scrap book under the head of "Puzzles" I found this,—"If you want to find the age of a friend, without asking him outright, do this way. Give him a piece of paper and a pencil. Tell him to put down the number of the month in which he was born, then multiply that number by two, add five, multiply by fifty, add his age subtract three hundred and sixty-five and then add one hundred and fifteen. Then ask him what the last number is. If he has made no mistake in his work, the two figures at the right will be his age, and the one, or the two at the left will be the number of the month of his birth." I thought perhaps some of the boys and girls would like to try this.

Some household hints that may be of use were found on the "household page" of a southern paper.

Rubbing butter on the lip of a cream jug will keep it from dripping, and greasing a saucepan will keep the contents from running over so easily when cooking.

One good biscuit maker makes her dough very soft, simply patting it into shape on the board before cutting.

There is only one right way to do up white ribbons which have become soiled. Lay the ribbon on a table and scrub it, using soap and water, and a brush with stiff bristles. When cleaned, rinse beneath the spigot, squeezing out the water between the fingers without creasing the material, and hang over a line. When dry, the ribbon will be found free from wrinkles and fresh looking as when new.

If in ironing you scorch an article, soap suds and the hot sun will remove it.

Use strong baking soda water for scald or burn where the skin is not broken.

Brush the stove pipe over with equal parts of kerosene and linseed oil when put away for the summer.

White lead is an excellent cement for mending china. It may be bought at any shop where art paints are sold.

To clean bath tubs put salt in a dry cloth and rub the soiled parts, or dampen the cloth with coal oil—and you will find the tub easily and quickly cleaned.—Elbepe.

JUST FOR THE GIRLS.

If you want an umbrella to use to save your best one, and have a good frame with a worn out cover, you can easily make a new cover for the frame from black sateen or any preferred material . Rip off the old cover and cut out one section carefully along the seams for a pattern, then lay this on the cloth, the lower edge on the selvage, and cut the pieces without allowing for seams, as the new goods will stretch a good deal. Baste carefully and stitch on the machine, then stretch smoothly over the frame and finish the top with a ruffle of ribbon and tack the covering in place with stout thread.

In washing kid gloves, the kind that can be washed in soap and water, wash them carefully then rinse them

in clean soapy water, so that a little of the soap is left in the kid to keep it soft.

Fine white waists made of sheer material and nice handkerchiefs and neckties need very little rubbing if they are put to soak in a borax solution before washing in suds, and it should be used in the proportion of a tablespoonful of borax to a gallon of water.

If you want a safe and excellent tooth powder, mix well together equal parts of powdered borax and gum myrrh, and rinse the mouth out night and morning with warm water in which a little borax is dissolved, as it strengthens the gums and removes tartar, and disagreeable odors and use the borax solution as a gargle night and morning to keep the throat in a healthy condition.

Clean lace woven or fine silk stockings by washing and rinsing in naptha but it should never be used in a room where there is a fire or light.

White lace or chiffon veils may be nicely cleaned by soaking for half an hour in a solution of white soap and warm soft water and then pressing between the hands until clean. Rinse in clear water, then soak in very weak gum arabic water a few minutes, then shake and pull gently in the hands until nearly dry and then pin to the bed or over some smooth surface until perfectly dry, and veils can be kept fresh looking until they are nearly worn out.—M. H.

Mountain Forest Scene.

A BREAKFAST PROFESSORSHIP.

Those who believe that a good substantial breakfast is the best beginning for a day's work—and those who hold with Emerson that pie is a good breakfast food, will be interested in a clause in the will of a New England man who left a good round sum "to any academic institution that shall first raise a like sum for the endowment of a professorship for the purpose of inculcating in the young a love for breakfast; to stay the tide of anti-breakfastism; to teach by precept and practice the dietary fallacy of coffee and rolls as sufficient nutriment for the beginning of the day's toil; to restore to popular favor that ideal of breakfast foods—pie; and, in general, to lead the race away from the influence of pseudo scientific dietaries, that future generations may recover the mental and moral virtues and the physical strength of their forefathers.

The Pomona cannery has decided not to can tomatoes the coming year.

THE WOMAN AT THE BOTTOM OF IT.

"It's my idee," says Uncle Ned, "that
purty nigh every growed-up human
Belongin' to the sterner sex has kindly feelin's toward a woman.
And yet how many men will say—an' jest as if they sort o' love it—
When some weak mortal goes astray,
'A woman's at the bottom of it!'

"I calculate I've been around about
as much as anybody
Observin' all the ways o' folks, an' after purty careful study
It's my conclusion that the men secure 'bout all the credit due 'em,
While women as a rule don't get the praise that should be comin' to 'em.

"Just take the leaders o' the world—
they'll tell you in some way or other
The strength that made 'em win their fame was borrowed from a wife or mother.
An' if the truth is ever known—the hull truth—how they got so noted—
Jest lots of statues made fer men will be rebuilt an' petticoated.

"I don't maintain all women folks are
perfect, an' I've never said it,
Yet I believe they're doin' good for which the men are gettin' credit.
An' when I see a monument with
some man's figure up above it,
I think that jest as like as not a woman's at the bottom of it."
—Nixon Waterman.

LITTLE BOY'S PRAYER.

Dear God, I need you awful bad;
I don't know what to do;
My papa's cross, my mama's sick;
I hain't no fren' but you.
Them keerless angels went and brung,
'Stid of the boy I ast,
A weenchy, teechy baby girl—
I don't see how they dast!

Say, God, I wish you'd take her back—
She's just as good as new;
Won't no one know she's second-hand,
But 'ceptin' me an' you;
An' pick a boy, dear God, yourself,
The nicest in yer fold;
But please don't choose him quite so young—
I'd like him five years old.
—Lippincott's.

WATCH THEM WELL.

There are four T's too apt to run
'Tis best to set a watch upon:
Our Thoughts.
Oft, when alone, they take them wings,
And light upon forbidden things.
Our Temper.
Who in the family guards it best
Soon has control of all the rest.
Our Tongue.
Know when to speak, yet be content
When silence is most eloquent.
Our Time.
Once lost, ne'er found; yet who can say
He's overtaken yesterday?

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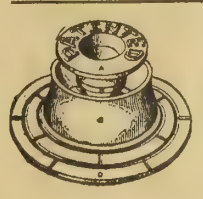

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San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, April 7, 1909.

Butter.

Butter continues its downward course, sliding 5 cents this week and now resting at 47½ with good demand and steady condition.

Produce Exchange wholesale quotations are as follows with actual selling price to the trade 2½c advance on Extras.

Creamery ex per roll	47½
Firsts	45
Eastern Creamery ex	47½
Dairy	24
Cooking	22½
"Butterine"	16@20

Cheese.

Southern California Anchor	17
Northern fresh	16½@17
Anchor, Young America	18
Longhorn	22
Eastern singles	17
Cheddars	19
Swiss	17@18
Imported Swiss	30
Daisy	17½@18
Limburger	21
Oregon triplets	18
Twin	17½

Eggs and Poultry.

Eggs declined a cent after last week's quotations, but the Easter demand began to stimulate the market and a two cent advance was made Tuesday which makes a 24 cent price for candled and 20 for buying case count.

A local dealer in refering to eggs prices yesterday said:

"Ranchers have sold their laying hens, finding no profit in eggs at the high price of feed. It has been shown by reliable computations that there is only about 50 per cent of the number of laying hens this year that there was last."

Eggs local candled	24
Eggs case count buying price	20

Dealers pay for live stock.

Hens per pound	15@16
Young roosters	18
Fryers per lb	23
Broilers per lb	26
Roasters	20
Old roosters	8
Turkeys	20
Geese	15
Ducks	15
Squabs	1.25@1.75

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs from 175 to 200 pounds	6½@6¾
Prime steers	4¾@5
Heifers	4@4½
Calves per pound	5
Sheep ewes per head	3.75@4.00
Lambs per head	3.55
Wethers	4.50@5.00

Potatoes.

Wholesale prices are:

Sweets per ctl	1.75@2.00
Sweets choice	1.15@1.25
Sweets White	1.50
Sweets Red	1.50
New per box	1.00@1.50
Early Rose local	2.50@2.75
Early Rose northern	2.50
Burbanks local	2.25
Lompocs	2.35@2.50
Highland fancy	1.60@2.00
Salinas	2.50
Idaho's	2.00
Oregon Burbanks	2.00@2.25
Nevada's and Utah's	1.75@2.00
Colorado's	2.00

Onions.

Wholesale quotations:

Australian Brown	2.25@2.50
Danvers	1.75@2.00
Oregon's	2.00@2.25
Nevada's	2.00@2.25
Utah's	2.00@2.25
Red Globe	1.75@2.00
Imperial Bermudas per crate	2.35@2.50
Texas Bermudas	2.45@2.60
Garlic	10@12

Vegetables.

Artichokes per doz northern	50@70
Artichokes locals	25@50
Asparagus green	7@8
Asparagus per lb common	3@5
Beets per doz	20@25
Bell peppers per lb	25@40
Beans string	20
Beans Limas per lb	8@10
Brussels sprouts per lb	15
Cabbage per sk	1.00@1.25
Cabbage red per lb	4
Celery per crate	1.75@2.25
Chili per lb	20@25
Chili dried	9@10
Chicory per doz	50
Cucumbers per doz hot house	75@3.00
Cauliflower per crate	75@1.25
Carrots per doz	20@25
Chives per doz	1.60
Endive per doz	25
Green onions per doz bunches	15@20
Horseradish per lb	12@15
Lettuce per crate	1.50@1.75
Lettuce choice	50@90
Mushrooms per basket	3.00
Oyster plant	30
Peas per lb	3@5
Parsley doz	15@20
Parsnips	20@25
Rhubarb	60@80
Rhubarb Northern per box	1.35@2.00
Radishes per doz	15@20
Spinach per doz	15@20
Turnips doz	15@20
Tomatoes crate	1.00@1.25
Water cress	15@20

Citrus Fruits.

Navels fy	2.00@2.25
Navels ch	1.25@1.50
Tangerines halves	1.00@1.50
Grapefruit seedless	2.75@3.00
Grapefruit seedlings	1.50@2.00
Lemons fy	2.00
Lemons ch	1.25@1.75
Lemons ch	1.75@2.00
Limes half box	1.25@1.75
Kumquats basket	25

Fresh Fruits.

Wholesale prices on the market are:

Baldwins 4 tier	1.35
Bellflowers	1.05@1.15
Newton Pippins	1.00@1.50
Red Pearmains	1.35@1.75
W W Pearmains	1.50
Spitzenberg	2.25@2.50
Jonathans	1.75
Aligator Pears per doz	3.50@4.00
Custard apples per lb	10@15
Guavas	5@6
Loquats per lb	8@10
Pears box	1.00@1.50
Pomegranates per box	1.75
Raspberries	40
Strawberries	5@7
Strawberries ch	4@5

Dried Fruits.

Wholesale prices are:

Apricots	8@10
Evap apples fy per lb	8½
Figs loose white	5
Figs blk	5
Peaches in boxes	7@8
Peaches sacks	6@7
Pears	9
Plums pitted	8@9
Nectarines	7½@9
Prunes 30's to 40's boxed	8
Prunes 40's to 50's	7½
Prunes 50's to 60's	7

Beans Dried.

Wholesale prices are:

Limas per ctl	4.50
Pink No. 1	3.25
Lady Washington	5.00
Small White	6.00
Black eyes	3.75@4.00
Garvanzas	4.00
Lentils California	7.00@8.00
Lentils German	8.00
Bayou	3.50

Nuts.

Almonds IXL per lb	14@15
Ne Plus Uutra	14
Pecans polished	16@17
Peanuts Virginia	6½@7
Peanuts California	5
Peanuts Jap	6@6½
Walnuts No 1	11@12
Chestnuts	13@14

Honey.

Wholesale quotations:

Extracted water white	8
Extracted Light Amber	6½@7
Comb W W	16
Comb white	15
Beeswax	30

Hay.

Prices paid to producers f. o. b. Los Angeles are as follows:

Barley No 1	21.00@23.00
Barley No 2	18.00@20.00
Alfalfa northern per ton	14.00@15.00
Alfalfa local	15.00@18.00
Tame Oat No 1	22.00@24.00
Wheat No 1	18.00@21.00
Wheat No 2	18.00@20.00

Grains.

Wholesale selling price f. o. b., Los Angeles.

Wheat new per ctl	2.10
Kaffir corn	1.85
Corn Eastern sacked	1.80
White oats	1.90
Seed Rye	1.80

Feed Stuff.

Wholesale selling price f. o. b., Los Angeles:

Cracked corn	1.85
Shorts	1.80
Bran	1.65
Cottonseed meal	1.25
Oil cake meal	2.50
Feed meal	1.85
Rolled barley	1.50

BANKING BY MAIL.

The German-American Savings Bank has issued a neat little booklet printed in English and German, giving information that everyone ought to know in regard to savings accounts, and how to conduct them by mail. This bank is one of the strong institutions of the great Southwest with nearly 25,000 depositors. It is not necessary to make a personal visit to this bank in order to open an account. If you want this booklet just drop a postal card to department L, German-American Savings Bank, Los Angeles, mentioning the Cultivator and a copy will be sent you.

San Francisco Markets

SAN FRANCISCO, April 6, 1909.

Butter.

Under large receipts butter has declined. There is now a large surplus on hand and market is not strong.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras per lb	23
California firsts	22
California seconds	21½

Cheese.

California flats fy	14½
Firsts	13½
Cal Young America fy	15
Firsts	14
Seconds	11½
Young American Oregon fy	16½
Eastern N. Y. Cheddars fy	17½
Oregon flat fy	15

Eggs and Poultry.

Eggs have fluctuated somewhat during the week and now register a half cent above last week with firm market ready for Easter trade.

Official quotations of the S. F. Wholesale Dairy & Produce Ex. are:

Fresh ranch extras	23½
Eggs first per doz	22
Eggs second	19½
Eggs thirds	18
Hens per doz	6.00@8.00
Hens extra	9.00@12.00
Young roosters	9.00@10.00
Old roosters	5.00@6.00
Fryers per doz	8.00@9.00
Broilers per doz	6.00@7.00
Geese per pair	2.50@3.00
Goslings per pair	1.75@2.00
Ducks young	6.00@9.00
Live Turkeys	17@19
Dressed Turkeys	18@22
Pigeons young	2.00@3.00

Live Stock.

San Francisco prices gross weight:

Steers No 1	5¼@5½
Do second quality	4½@5
No 1 cows and heifers	4@4¼
Second quality	3½
Hogs 100 to 140	7
Hogs 140 to 150	7¼
Rough heavy	4½@5
Calves per lb	4@5¼
Lambs yearlings	5½
Milk lambs	6½@6¾
Wethers No 1 unshorn	5@5¼
Ewes No 1	4½@4¾

Potatoes.

Wholesale market quotations:

River white fy sacks	1.25@1.50
Early Rose	1.85@2.00
River Burbanks	1.35@1.50
Salinas Burbanks	2.00
Lompoc Burbank	1.75@1.90
Sweets per crate	1.65@2.00
Oregons	1.65@1.85
New potatoes	2½@3½

Vegetables.

Wholesale quotations:

Asparagus per lb	4
Bell peppers per lb	25
Brussels sprouts per lb	3@5
Cabbage sk	2.00@2.25
Cauliflower doz	75@1.00
Carrots per sk	65@75
Celery per doz	40@60
Cucumbers per doz	1.25@1.75
Chili peppers per lb	20@25
Egg plant per lb	25
Green peas per lb	6@9
Mushrooms per lb	12½@25
Marrowfat squash per ton	20.00@25.00
Squash cream per box	50@65
Onions green per box	65@85
Rhubarb per box for bay	1.00@1.65
Rhubarb, Southern per box	1.00@1.25
String beans	10@12½
Tomatoes box Mexicans	75@1.25
Wax Beans	10@12½
Garlic new	9@10

Onions.

Onions Oregons	2.00@2.25
Australian Brown	4.00@4.25
New green per box	25@65

Citrus Fruits.

Navels fy	2.25@2.50
Choice	1.75@2.25
Tangerines per crate	1.25@1.50
Mandarins	75@1.00
Grapefruit seedless	2.50@3.50
Grapefruit seedlings	1.00@1.50
Lemons ch	1.50@2.00
Lemons fy	2.25@3.00
Limes	8.50@9.00
Limes Cal sm box	1.00@1.25

Fresh Fruits.

Bellflowers	1.00@1.35
Bellflowers No 2	50@90
Spitzenberg	1.25@2.00
Newton Pippins	1.35@1.75
Ben Davis	1.25@1.65
Winter Nellis	1.25@1.50
Other Kinds	75@1.00
Strawberries L. A. per crate 15 bkt	2.00
Pineapples per doz	2.00@4.00

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

Dried Fruits.

Prunes 4-size basis	2½@3
Santa Clara	3¼@3¾
½c premium for larger sizes	
Apricots per lb; Choice 8½; fancy	7@10
Peaches—Choice 4; fancy	6½
Apples evap	6@7
Pears	4@8
Figs	2½@4
Nectarines	5@6
Pitted Plums	7@8

RAISINS—1908 crop, r. o. b.: Clusters and Layers, 20-lb bxs—Imperial Clusters, 6-crown, $2; Dehesa Clusters, 5-crown, $1.75; Fancy Clusters, 4-crown, $1.40; London Layers, 3--crown, $1.15; do, 2-crown, $1.05. Seeded, 25-lb bxs—Fancy bulk per lb, 5¼c; Choice bulk, 5c. Loose Muscatels, 50-lb bxs—Standard, 4-crown, 4c; do, 3-crown, 3¼c; do, 2-crown, 2¾c; Seedless, 3½c. Seedless Sultanas—Unbleached, 4¼c. Thompson Seedless—Unbleached, 4¾c. Dried Grapes, 2½c.

Nuts.

Walnuts S S No 1	9½
Walnuts No 2	6
No 1 Standard	8½
No 2 Standard	4½@5
Almonds Nonp	11½
Almonds IXL	10½@11
Ne Plus Ultra	9½
Drakes	8½@9
Chestnuts	9½@14
Peanuts Cal	5½@6

Beans Dried.

Limas	3.60@4.00
Pink	2.85
Small white	5.35@5.40
Large white	4.40
Black eyes	3.40
Red Kidneys	3.75
Garvanzas	3.75
Bayo	3.90@4.00
Horse beans	2.00
Cranberry	3.50@3.75

Hops.

Hops 1908 crop	6@8½
Old Crop	1@3½
1909 crop contracted for at	10@12

Honey.

White comb	15½@16
Light Amber	9@10
Exracted W W	7@8
Extracted light amber	5½@6
Beeswax No 1 per lb	28@30
Beeswax No 2 per lb	23@25

Hay.

Arrivals for the past six days have amounted to 1985 tons, being quite a dropping off from the arrivals of last week. The result of this short receipt has been to strengthen the price of the higher and better grades of hay; the poorer, and particularly the medium grades, drag a little, and are somewhat slow to sell.

As the end of the season approaches, it becomes apparent that our supply will just barely fill out the demand for the season. Farmers in many sections of the state have baled up their loose hay, which they have been holding in outdoor stacks and piled in their barns, and sending it in to market.

The excellent weather we have had during the last month has stimulated trade in this city to a degree unknown since the Christmas holidays.

Banking reports, and reports from general business throughout the state of California are all on the improve, and all have a tendency to keep the market, particularly the hay market, in good strong condition.

Choice wheat hay per ton	24.00@26.50
No 1 wheat or wheat & oat	21.00@24.00
No 2 wheat or wheat & oat	17.00@20.00
Choice tame oat	23.00@25.00
Other tame oat	20.00@23.00
Wild oat	19.00@23.00
Stock hay	11.50@13.00
Alfalfa	16.00@18.50
Straw per bale	60@80

Grains.

Wheat No 1	1.90@1.95
Barley	1.42½@1.47½
Corn small	1.80@1.85
Oats white	1.95@2.05
Oats gray	1.85@1.95
Rye new crop	1.80@1.85
Corn Egyptain	1.60@1.65
Alfalfa seed, Cal	16@19
Alfalfa seed, Utah	18@19
Mustard yellow	5¾@6

Feed Stuff.

Bran per ton	29.00@30.00
Feed cornmeal per ton	37.00@38.00
Cracked corn per ton	38.00@39.00
Rolled barley per ton	30.00@31.00
Oil cake meal per ton	38.50@40.00
Cocoanut cake per ton	25.00@26.00
Middlings	33.00@35.00
Shorts	31.00@32.50

MORE NEXT YEAR.

Chas. Hamburg, of the Whittier Nursery, has sold many grafted walnuts this year. They have given satisfaction and brought many commendations like the following from Messrs. Fred H. Young & Son of Filmore: "Trees came in fine shape, were well packed and well dug. Thanking you many times for the ten extra trees. Are all done planting, if nothing happens we will be in the market for more next year."

Citrus Market

LOS ANGELES, APRIL 7, 1909.

An average of over 200 cars of oranges are going forward daily and so far as can be determined the market is in such condition that it will absorb them at good prices. In fact the general condition the country over is excellent and with the two months in which navels will yet be marketed the feeling seems to be that all navels will be absorbed so as to give good returns to the growers. There are now about seven or eight thousand cars of navels yet to go. The seedlings and other varieties have also met with good sales and have gone forward in liberal quantities. Some growers who have been compelled to lighten their Valencia trees have also been forwarding Valencias. But the great bulk of that crop will not begin to move until well toward June. Even the auctions have given good returns and handled immense quantities of fruit.

Lemons are meeting with good reception notwithstanding large receipts of foreigns. If anything the market is much stronger and will continue satisfactory, if present indications can be trusted, through the entire summer.

Shipments.

Total shipments to date, since November 1st, aggregate 13,760 cars of oranges, 2,101 cars of lemons. To same date last season 14,082 cars or oranges and 1887 cars of lemons.

NEW YORK, April 5.—Thirty-two carloads navels, one carload bloods, one carload tangerines and two carloads lemons sold. Market very strong, higher, all grades and sizes of oranges. Weather clear, favorable.

NAVELS—	Average.
Sweetheart AF Ex Highgrove	3.00
Yankee Doodle do	2.45
Alta Cresta AH Ft Ex	3.30
Robusta do	2.95
Gold Buckle RH Ft Ex	3.15
Lochinvar do	3.00
Victoria AH Ft Ex	2.90
Lincoln do	2.90
Violet DM Ft Ex	3.10
Blue Globe Riv Ft Ex	3.10
Red Globe do	2.90
Cal Orange do	2.55
Volunteer SA Ft Ex	2.75
Pointer ACG Ft Ex	2.80
Uncle Sam Riv Ft Ex	3.05
Fiesta do	2.70
Red Shield ACG Ft Ex	2.85
Alhambra ST Ft FEx	3.00
Dan Patch AF Ex	2.65
Pony do	2.55
Alhambra ST Ft Ex	2.60
Red C Covina Ft Ex	3.00
Cougar do	3.00
Red C	2.75
Cougar do	2.85
Signal Stewart Ft Co	3.00
Solano do	2.80
Dos Palmos San Marino GPA	2.55
El Toreador do	2.65
ST. MICHAELS—	
Alhambra ST Ft Ex	2.60
Don Quixote do	2.45
TANGERINES (Halves)—	
Victoria AH Ft Ex	1.35
Stag ACG Ft Ex	1.65
Blue Seal do	1.60
Alhambra ST Ft Ex	1.45
Vista de Robles Hammond Orchards	90
Lion Head I L Lyon Sons	1.35
LEMONS—	
Flower	2.45
Standard	2.25
Chess Queen	2.50
Bishop	1.95
Loma Vista	2.05

PHILADELPHIA, April 5.—Fifteen cars navels, two cars seedlings, six mixed cars and one car lemons sold. Weather cool. Market unchanged. Twelve cars on track. Eight cars Florida oranges and grapefruit sold. Market unchanged.

NAVELS—	Average.
Blue Jay OK Ft Ex	2.38
Canna SB Ft Ex Yerkes Spur	2.56
Electric SA Ft Ex Pomona	2.53
Owl OK Ft Ex	2.50
Canoe SA Ft Ex Pomna	2.62
Salt Lake King Ft Co	2.72
Conqueror Ind Ft Co	2.64
Arrowhead SB Ft Ex	2.64
Lone Palm McGowan & W	2.62
Tourist Spence Ft Co	2.58
Good Benchley Ft Co	2.53
Cosmos SB Ft Co	2.47
El Toro Cal Cit Union	2.38
Pomona SA Ft Ex Pomona	2.62
Cosmos SB Ft Ex Yerkes Spur	2.50
Vista Bonita AF Ex Hemet	2.75
Pomona SA Ft Ex Pomona	2.27
BLOODS (Halves)—	
Lake Hemet, AF Ex Hemet	1.46
Quail OK Ft Ex	1.28
Lake Hemet AF Ex Hemet	1.45
Pico ST Ft Ex Whittier	1.24
TANGERINES (Halves)—	
Stag ACG Ft Ex Glendora	
Quail OK Ft Ex	1.31
SEEDLINGS—	
Niagara Stewart Ft Co	2.58
Burro ST Ft Ex	2.42
Arcadia do	2.56
ST. MICHAELS (Halves)—	
Pico ST Ft Ex	1.30

Sweets, halves, $2.43; Lemons, On Honor Lemon Grove, FGA Lemongrove, $2.10; Standard, Growers, $1.71.

BOSTON, April 5.—Twenty cars sold, twenty-nine on track. The weather is favorable. Market strong and higher.

NAVELS—	Average.
Swallow OK Ft Ex	2.45
Laurel QC Ft Ex Corona	2.80
Gold Buckle R HFt Ex Highland	2.95
Quail OK Ft Ex	2.55
Lily QC Ft Ex Corona	2.65
LaMesa Riv Ft Ex Riverside	2.70
Elephant OG Cash Assn	3.00
Aurora Peycke Co	2.70
Elk Riv Ft Co	2.65
Flamingo Cal Cit Union	2.65
Victory do	2.55
El Toro do	2.35
Robin Spence Ft Co	2.20
Lark OK Ft Ex	2.60
Lily QC Ft Ex Corona	2.60
Lochinvar RH Ft Ex High	2.75
BLOODS (Halves)—	
Quail OK Ft Co	1.25
Plain	1.15
Elephant OG Cash Assn	1.35
TANGERINES (Halves)—	
Bear OK Ft Ex	1.50
Mahala L V W Brown	1.30
Homer QC Ft Ex	1.25
LEMONS—	
Quail OK Ft Ex	2.50
Cosmos SB Ft Ex Yerkes Spur	2.60
Coyote OK Ft Ex	2.25

CLEVELAND, April 5.—Weather warm. Market strong on navels. Six cars sold, two on track.

NAVELS—	Average.
Lochinvar RH Ft Ex E High	3.10
Cana SB Ft Ex Yerkes Spur	2.90
Chief Joseph RH Ft Ex Redlands	2.80
Newsboy do	2.65
Crocus SB Ft Ex Yerkes Spur	3.10
Big R SB Ft Ex Rialto	1.95
Plain Ends	2.80
Arch Hawarden CFT	2.95

PITTSBURG, April 5.—Twelve cars sold, five on track. Market very strong, higher on navels; firm on good stock lemons. Weather favorable.

NAVELS—	Average.
Orchard National Orange Co	3.00
Highlander High FGA	2.40
Highlander do	2.65
Fiesta Riverside Ft Ex Riv	2.75
Greyhound SA Ft Ex Claremont	2.45
Pepper Riverside Ft Ex Riv	2.85
Chief Joseph RH Ft Ex Red	2.65
Newsboy do	2.70
Standard National O Co	2.55
Cactus High FGA	2.60
Deal E Peycke Co	2.60
Golden Orange AH Ft Ex Pren	2.75
BLOODS—	
Golden Orange AH Ft Ex Prenda	2.85
Pond Lily Riverside Ft Ex Riv	2.60
Victor SA Ft Ex Claremont	2.60
Fiesta Riverside Ft Ex Riv	2.80
Golden Orange ½s AH F E Pren	1.30
LEMONS—	
Highlander High FGA	2.30
El Modena SS Ft Ex El Modena	1.70

ST. LOUIS, April 5.—Weather favorable. Market very strong. Six cars sold. Five cars navels and four cars lemons on track.

NAVELS—	Average.
Lochinvar RH Ft Ex High	3.05
Volunteer SA Ft Ex N Pomona	2.90
Lochinvar RH tF Ex E High	3.00
Highlander High FGA	2.65
Golden Flower Red OG Asso	3.05
Belt RH Ft E High	2.85
Morning Glory SA Ft Ex N Pom	2.85
Belt RH Ft Ex E High	2.90
Cactus High FGA	2.80
Golden Gate Red OG Asso	2.65
TANGERINES—	
Indian Hill halves SA F E N Pom	1.40
Volunteer halves do	1.35
LEMONS—	
Club ST Ft Ex Colegrove	2.40
Belt RH Ft Ex E Higr	2.10
Valley ST Ft Ex Colegrove	2.15

CINCINNATI, April 5.—Weather favorable. Market is steady. Two cars navels, three cars seedlings, one car navels, three cars seedlings, one car bloods and one car of lemons sold. There are eleven cars on track.

NAVELS—	Average.
Purity Tustin Packing Co	2.75
Pointer ACG Ft Ex C Oak	2.50
Carmencita ST Ft Ex Fullerton	2.70
Hunter ACG Ft Ex Charter Oak	2.60
SEEDLINGS—	
A-One E. Peycke Co	2.45
Selected N W Blanchard	2.45
Deal E Peycke Co	2.30
Dos Palmas budded ST Ft Ex	2.30
BLOODS—	
Choice Malta	2.50
Big Find	2.55
TANGERINES—	
Stag halves ACGE Charter Oak	1.10
LEMONS—	
Selected N W Blanchard	2.15
Loma do	1.90
N W B	1.80

NEW YORK CITY, April 2.—Nineteen cars navels, one car seedlings one car lemons sold. Clear, favorable. Very strong, higher on navels, unchanged on lemons.

NAVELS—	Average.
Orchard National O Co	3.05
Standard do	2.70
Artillery Cal Cit Un	2.50
Alta Cresta AH Ft Ex	3.15
Robusta do	2.85
Hobo do	2.60
Sweetheart AF Ex Highgrove	3.05
Yankee Doodle do	2.40
Jameson QC Ft Ex	2.85
Just Rite do	2.65
La Mesa Riv Ft Ex	2.85
Red Shield ACG Ft Ex	2.95
Red Globe Riv Ft Ex	2.65
Canoe SA Ft Ex	2.60
Dos Palmos San Marino GPA	2.65
SEEDLINGS—	
Titus Ranch San Marino GPA	2.55
El Toreador San Marino GPA	2.35
N W Blanchard	2.20
LEMONS—	
Independent Growers Ft Co	2.70
Stock Label	1.85

BOSTON, April 2.—Thirteen cars sold, eighteen on track. Weather favorable. Market is easier.

NAVELS—	Average.
Rey St Ft Ex Fernando	2.70
Tunnel ST Ft Ex Fernando	2.65
Laurel QC Ft Ex Corona	2.75
Bear OK Ft Ex	2.75
Rey ST Ft Ex Fernando	2.65
Gold Buckle RH Ft Ex E High	2.85
Lochinvar do	2.75
Elephant OG Cash Assn	3.00
LEMONS—	
Rey ST Ft Ex Fernando	2.60
Tunnel do	2.30
Canna SB Ft Ex Yerkes Spur	2.65
Bridal Veil Limoneira Co	2.50
White Cross do	2.30

PITTSBURG, April 2.—Five cars sold, seven on track. Market very strong. Prices on navels from 15c to 25c higher. Weather favorable.

NAVELS—	Average.
Trail	2.80
Circus XC Sparr Ft Co	2.70
Highlander XF High FGA	2.30
Cactus do	2.55
Our Farm SS Ft Ex Co Farm	2.45
Stork SA Ft Ex Claremont	2.30
Victor do	2.50

PHILADELPHIA, April 2.—Twelve cars navels and eight mixed cars sold. Weather warm, cloudy. Market strong, higher. Thirteen cars on track.

NAVELS—	Average.
Whittier ST Ft Ex Whittier	2.55
Coyote OK Ft Ex	2.47
Security ST Ft Ex Nordhoff	2.65
Serenade TCC Ft Ex Sanger	2.50
Hunter ACG Ft Ex Azusa	2.47
Whittier ST Ft Ex Whittier	2.44
Pico do	2.53
Tiger SB Ft Ex Colton	2.45
Floral do	2.60
Pointer ACG Ft Ex Glendora	2.45
Morning Glory SA Ft Ex N Pom	2.66
Owl OK Ft Ex	2.52
Pointer Imp ACG Ft Ex Azusa	2.83

CLEVELAND, April 2.—Weather cool. Market higher on both navels and lemons. Four cars sold. Three cars on track.

NAVELS—	Average.
Electric SA Ft Ex Pomona	2.50
Jasmine DM Ft Ex Monrovia	2.70
BLOODS (Halves)—	
Primrose DM Ft Ex Monrovia	1.35
Plain Ends	1.30
LEMONS—	
Arab SA Ft Ex San Dimas	2.30
Greyhound do	1.95
Duck do	2.05
Whittier ST Ft Ex Whittier	2.35
Pico do	1.95

THE MOISTURE LIMIT IN BUTTER.

Replying to an inquiry, Prof. E. H. Farrington of the University of Wisconsin explains that the per cent of water and the per cent of moisture in butter are the same thing. Some persons use the first term and others the second. The present law states that butter containing over 16 per cent water must pay a tax of 10 cents per pound, since it is classified as adulterated. It is quite necessary that butter makers be absolutely sure that the butter they are making does not exceed the 16 per cent limit.

For the benefit of those who have not the means of testing their product for percentage of moisture, Professor Farrington suggests that they need have no fear of exceeding the 16 per cent limit if they will wash the granules of butter with cold water at about 50 degrees F., allowing the butter to stand in this water until the granules become hard and firm. Then after draining off the water, wash and allow the butter to stand in the churn some time until it drains rather dry. Sprinkle the salt over this and give it the usual amount of working. Excessive moisture is held in butter that is soft and not thoroughly drained.

A NEW NOVEL BY DR. BRADY.

In the Woman's Home Companion for April is begun a stirring new novel by Cyrus Townsend Brady, entitled "Hearts and the Highway." The various instalments of the story are to be illustrated by F. C. Yohn. The Reverend Dr. Brady is a typically strenuous Amrican. In addition to writing popular and successful novels and lecturing he is a militant minister of the gospel. He has recently become rector of a large parish in Kansas City, Missouri.

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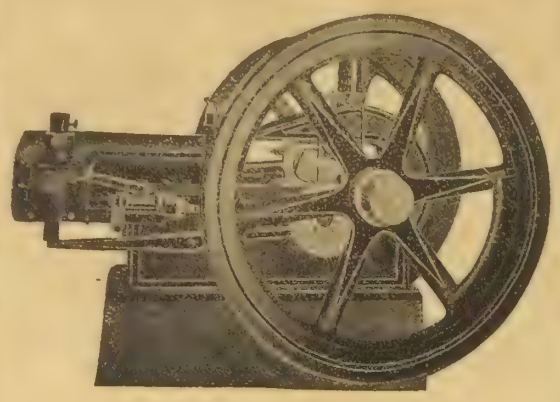

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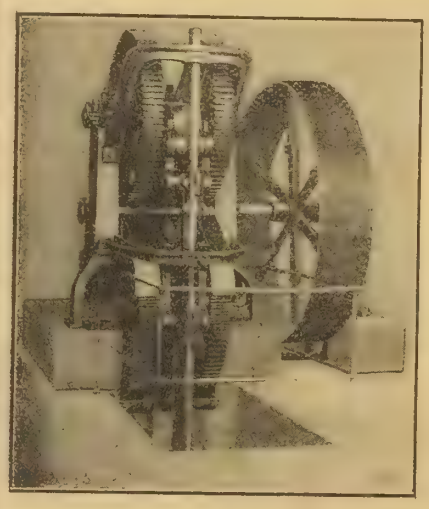

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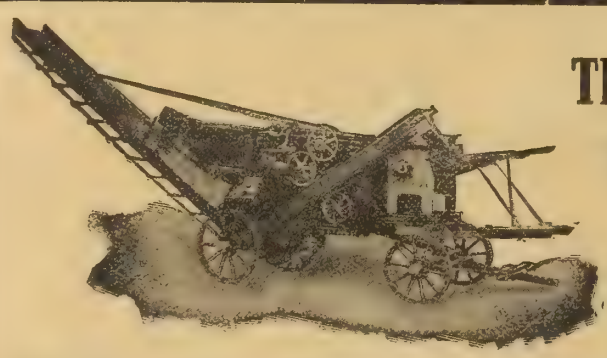

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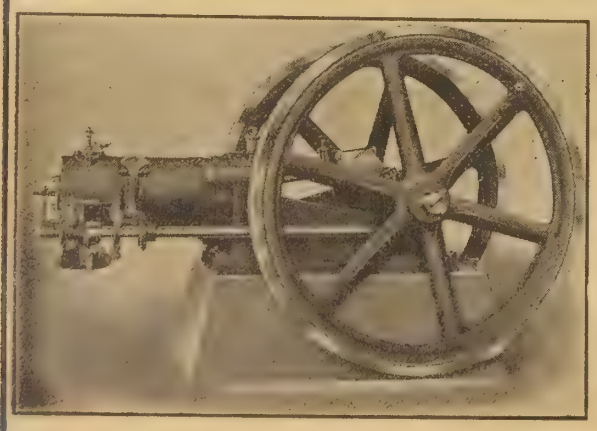

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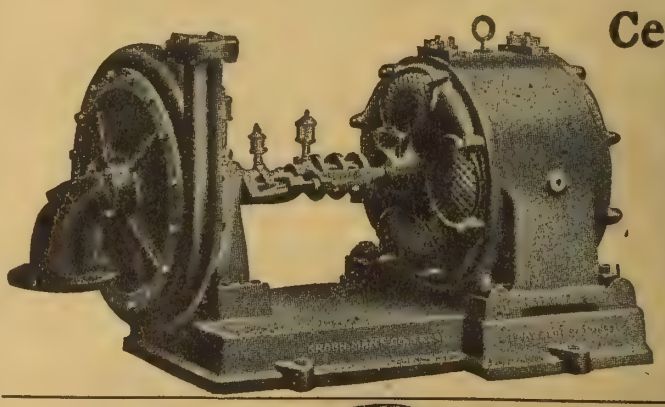

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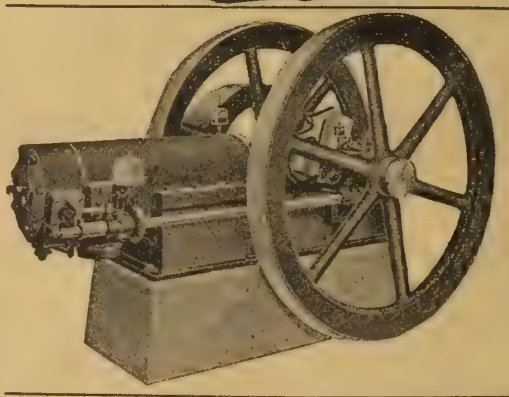

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California Cultivator

Published Weekly — One Dollar a Year

Los Angeles — April 15, 1909 — San Francisco

Pumping Water for Covina Orchards

View of Pumping Plant Which Supplies Water for the Productive Citrus Groves of Covina

Courtesy of The Covina Argus.

A LITTLE TALK on DISCS

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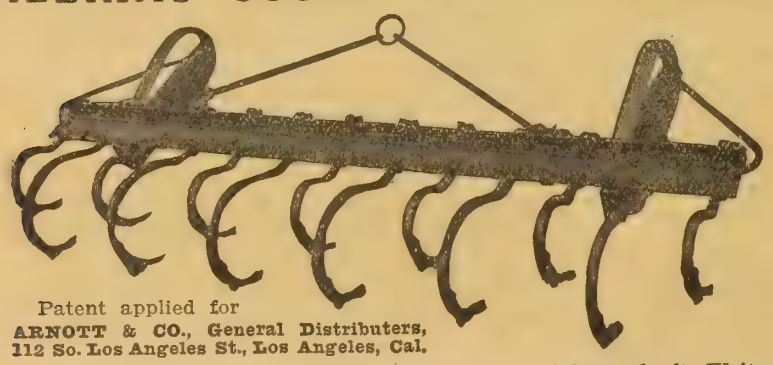

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First. The draft is very light. My two horses weigh 900 lbs. each and they have no difficulty in drawing the 7 ft. cultivator.

Second. The Williams Goose-Neck Cultivator stirs the soil well without exposing the subsurface, thus preventing the escape of moisture.

Third. The cultivator being of low construction, one can cultivate under the trees as easily as harrow.

I was showing my cultivator to a neighbor the other day and had him take it home to try it. The use of it for half an hour so thoroughly convinced him of the merits of the tool that he has, through Mr. Jones of Oceanside, given you an order for one-half dozen cultivators.

Messrs. Williams & Son of Orange certainly deserve great credit for inventing the Goose-Neck Cultivator.

Sincerely yours

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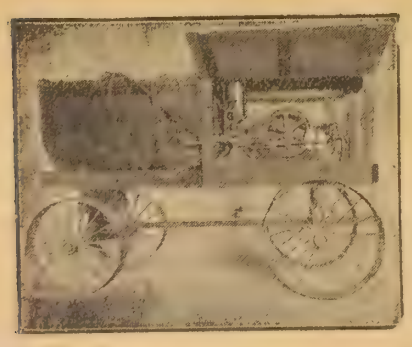

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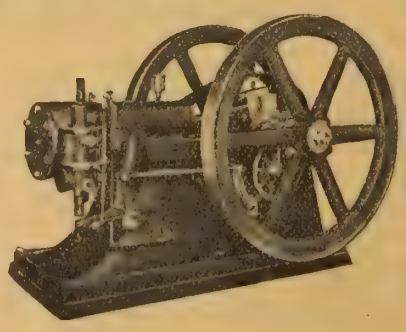

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California Cultivator

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Distribution of Water in the Soil

Report on Investigation of Furrow Irrigation Made by Prof. R. H. Loughridge of the State University and Issued by the Office of Experiment Stations

IRRIGATION is practiced more generally in the valleys of Southern California than in any other part of the state; and because of the low rainfall, the large area under culture, and the continually increasing number of citrus orchards the orchardists are realizing the importance of either a greater water supply or some means of utilizing better the amount on hand. An increase of the supply seems to be improbable, for apparently all the available local sources have been developed. A more economical use of the available supply is then the only way in which new orchards and new fields may be provided for without injury to those at present in bearing.

The question of economy resolves itself into the following: What amount of water should an orchard have for best productiveness? What becomes of the water that is given to an orchard under the present irrigation practice? How much is lost to the plant or tree, and how may this loss be stopped?

It was decided at the beginning of this investigation to confine the work to determining what becomes of the water when applied to the land. This embraces the amount lost by surface evaporation and the extent in area and depth to which the water percolates beneath the furrows, as well as the proportion retained by the soil or available to the trees.

The region of Riverside, in Southern California, was selected as the field of investigation because of the special interest manifested in the results by orange growers and because a leading land company generously gave the use of its orchards, together with every facility in the matter of water and in part the labor. We were ably assisted by Messrs. J. E. Roadhouse, O. W. Bryant, and R. McL. Fortier in the field work and in the compilation of results.

[We are told that "a leading land company" is the Arlington Heights Fruit Company of which Mr. James Mills is Superintendent. Also that the copy as written by Prof. Loughridge and sent to Washington contained due credit to Mr. Mills and his company. This was cut out in the office of experiment stations. This indicates a smallness of calibre which is surprising, but certainly can not be due to Director True, but doubtless to some under clerk. If a "Leading Land Company" gives service it is as worthy of credit as is the Division of Experiment Stations. Let the Division be big enough to divide up.—Ed.]

The furrow system of irrigation is used in the orchards around Riverside, some irrigators preferring five and others four furrows between tree rows. With five furrows the water is delivered to the land in greater volume and spreads laterally more rapidly and to a greater extent, and there is consequently a greater loss of evaporation.

Soil Moisture.

Water exists in the soil chiefly in two conditions, namely, hygroscopic and free, the former being that which is held as a thin film covering the surface of each grain of soil and not free to move except when vaporized by heat, while the free water is that which is free to move from place to place in soils, either by percolation under the influence of gravity or by capillarity under the influence of surface tension. The free water is alone to be regarded as of any value in promoting growth and productiveness, and in the following pages it alone is mentioned. Its movement is limited by the texture and water-holding power of the soil. The height to which it will rise above the source is controlled by the soil texture. The coarser the soil the less in height will water rise by capillarity. The depth of percolation for a given amount of water is limited by the water capacity and freedom of movement.

The soil beneath the furrows can be examined easily, and the results are often full of surprises for the irrigator. In some of the orange orchards in the regions of both Corona and Riverside it was found by examination that after a three days' run of the water it had reached a depth of only 10 or 12 inches, instead of several feet as it should have done.

Over 50 pages of details of the investigations are given of which the summary is:

Summary.

The following is a brief summary of the results obtained in the orchards near Riverside as detailed above:

1. The preliminary examination of the land of the orchard before irrigation showed that the upper two feet held only about 3.5 per cent of free water as the general average, while below this to the depth of 13 feet the average was 6.16 per cent. The roots of the trees were mostly confined to the upper four feet and in this depth there was an average of 4.68 per cent, an amount sufficient to maintain a good appearance in the trees but not to produce new growth; the application of irrigation water caused increased growth.

2. The unobstructed movement of water in loam soils is downward, with great irregularity in rate of progress and in the amount of water retained at various depths. The water beneath the surface does not move from the furrows toward the trees for more than two feet, and at a depth below two feet the wet area is usually rapidly contracted to a cone shape. The soils in the tree rows, therefore, fail to receive any of the irrigation water, and the dry space increases in width and extent downward; the tree roots, which usually are confined to the upper three feet, are thus only partially supplied with needed moisture.

3. The relative proportion of dry soil to that wetted by irrigation across 16 furrows and four tree rows in the sandy loam soil, was as two to three in a depth of five feet. As seen in the profiles, the proportions are as follows, taking the dry soil as the unit: Surface foot, 1 to 3.4; second foot, 1 to 4.3; third foot, 1 to 2.3; fourth foot, 1 to 0.8; fifth foot ,1 to 0.4; and sixth foot, 1 to 0.1.

4. The depth reached by the percolation of irrigation water depends on the nature of the soils and length of time of flow; in the unobstructed loose soil it was 26 feet near the head ditch, four feet in the middle, and about the same at 30 feet from the end, and many feet where the excess was received. In the compact, semi-impervious soil it reached a depth of four feet, while in the impervious hardpan soil the depth was but little more than 12 inches even after three day's application.

5. The amount of water held by the soil when the downward movement ceased was always greatest in the upper two feet and diminished in percentage to the bottom. Thus in the general average of the long trench in orchard 58 we found under the nine furrows 9.95 per cent in the first foot, 11.19 in the second, 9.14 in the third, and 8.27 per cent in the fourth foot.

6. The presence of an impervious hardpan near the surface causes sidewise seepage of the water, a greater wetting of the surface and consequent increased loss by evaporation and by accumulation and run-off at the lower end of the furrows.

7. Shallow irrigation furrows do not give as good results as deep ones; they allow a large part of the water to rise by capillarity to the surface on either side and thence to escape into the air by evaporation, while deep furrows enable the soil to receive and retain nearly all of the water applied.

The furrows in orchard 58 had an average depth of three or four inches and from these the lateral seepage was so great as to wet about 85 per cent of the space between the tree rows. During the three days of irrigation in which these soils were being kept wet the rate of evaporation was very high. After this the soil gradually dried out and the loss diminished.

8. On loose sandy loams water percolates with such rapidity near the head ditch that a great part is lost by passing far below the roots and possibly into sand and gravel strata, through which it flows away. Thus on orchard 58 the depth of percolation was 26 feet at a distance of 30 feet from the ditch.

It is extremely doubtful that water at a depth of more than five feet below the root systems will be of any benefit to the trees in times when needed, for the capillary rise is extremely slow, and especially so if the temperature of the soil be low. Observations made at the time of this investigation in July, when the air temperature was 102 degrees F. in the shade and that of the surface soil 109 degrees F., showed a difference of 28 degrees at a depth of one foot and 42 degrees at 13 feet. The following is the record.

Temperatures of a Soil Column in July.

Depth Feet	Degrees F.	Depth Feet	Degrees F.
Surface	109.0	7	70.5
1	81.0	8	69.50
2	77.0	9	69.00
3	74.5	10	68.25
4	73.5	11	68.00
5	73.0	12	67.50
6	71.5	13	67.25

In another part of the same orchard in July when the temperature of the surface was 130 degrees F., that at 13 feet was 69 degrees F.

9. In orchards with shallow mulches it was observed that the amount of water in the soil six weeks after irrigation was about the same as just previous to the application of water.

The rapidity of movement of water into a soil from the irrigation furrow and the rate at which it is carried into the lower soil strata is a matter of special importance to the trees whose roots must be in contact with it and to the orchardist who wishes the soil to absorb all it possibly can and thus avoid waste by either run-off or evaporation into the air. Beyond this the orchardist, as a rule, seems to have no thought and takes for granted that the soil distributes the water properly to the roots. The fallacy of this reliance on the soil has been frequently proven by examination after irrigation, when it was shown that the

(Continued on Page 442.)

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Plow Deep.

"In eastern soils the humus is seldom found more than six or eight inches below the surface, but in California, it is often found at a depth of six or eight feet rendering our soil, as a rule, vastly richer than eastern soil. Tree roots should be encouraged to grow deeply by deep plowing. The deeper the root of the tree grows, the less fertilizer will be needed upon the surface, for the more food they will bring up from the depths. Always plow an orchard deeply also, to break any shell, hardpan or plowsole that may form a short distance below the surface and tend to keep water from sinking down.

"It is generally conceded that the humus found deep in the ground, as it frequently is, far below the level of the deepest plowing, is carried there by earth worms.

"It has been proven beyond a possible doubt that earth worms were an important factor in keeping soil rich and growing large crops. Experiments with rye showed that soil where these worms were present in large quantities produced a 90 per cent larger crop than a neighboring tract from which all worms had been taken. With peas the increase was 300 per cent under the same conditions.

Select Plants.

"In selecting green fertilizer, choose the plants that contain the chemicals your soil needs. Some plants contain more of one thing, some of another; you should sow the one that will meet the needs of the particular place where it is to be plowed under. Clover, alfalfa, vetch, are rich in nitrogen and are therefore good fertilizers for most places, as most land is deficient in nitrogen. You should choose a plant that returns more to the soil than it takes out, otherwise nothing is gained by plowing it. Green manures, or plants grown for fertilizing purposes should be plowed under in the spring; therefore, plant in the fall. They should always be turned under when it blooms, as it then contains the largest per cent. of nitrogen, and is easily assimilated by the soil. If left longer the plant becomes woody and does not decay readily.

AVOCADO.

The avocado known by many names in the various tropical countries of America is a salad fruit, occupying a place more nearly comparable with the olive than any other fruit. In the markets of the United States it is sometimes called "avocado pear" and "alligator pear," but the name "avocado" is now more generally used than either of the others There is no good reason for continuing such a barbarism of language as "alligator pear," since the term "avocado" is sufficiently distinctive, and the word "pear" is altogether a misnomer. Mr. G. N. Collins, in his paper on this fruit, shows that no less than 43 common names are applied to it, though it is almost unknown outside of the American tropics. This speaks volumes for its popularity.

Chemical analysis brings out the fact that the ripe fruit contains from 10 to 15 per cent of fat, clearly indicating its value as a food. As a breakfast food it is of superior excellence. Adding pepper and salt as condiments and a teaspoonful of lime juice makes it a dish to please an epicure. However much it may fail to please on first trial, one is almost certain to become extravagantly fond of it if he continues to live in the tropics. It is, indeed, the rare exception to find a person living in the section where good ripe fruit may be obtained in quantity who is not extremely fond of the avocado. Fruits picked green and ripened in a crate are as far from the real thing as are green tomatoes from ripe ones. Then, too, there are as great varietal variations as in other cultivated fruits. The tree is easily budded and readily transplanted, so there is no need of planting and growing seedling orchards. A variety lately imported from Mexico by the Bureau of Plant Industry has passed through a freeze of 15.5 degrees Fahrenheit with a loss of only the smaller limbs. This hardiness greatly increases the possibilities of extending the range of this fruit.

Uses of the Fruit.

The most primitive way of using the avocado is to cut it into halves, remove the seed, and dip out the meat with a teaspoon; it should cut readily, and yet should come out neither oily nor mushy. A rancid avocado is simply nauseating, and a green one not edible. The addition of salt and pepper in no wise detracts from its flavor, and the novice may prefer to add a teaspoonful of lime juice, lemon juice, or vinegar to give it piquancy. A very small quantity of sugar may

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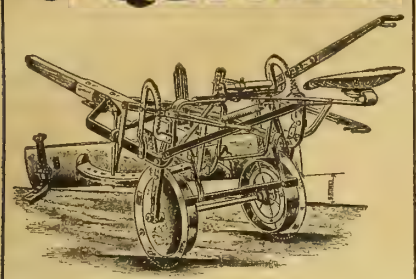

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be used to reduce the sharpness of the acid. Mayonnaise, or even oil, is sometimes added, but this would seem entirely superfluous, since the fruit already contains so large a percentage of fatty matter. People accustomed to the use of sugar and cream with fruits sometimes add these. In hotels and restaurants the avocado is often cut into small cubes or thin slices and served in small dishes. This is done to economize the fruit as a single avocado will fill six such dishes, while if served in the "half shell" it would suffice for only two people. The dressing or condiments used when sliced are the same as when served in the half shell. The ripe fruit, cut into cubes a half or a third of an inch in size, is frequently mixed with minced salads. At times it is added to lobster and shellfish salad to which it imparts a pleasing nutty flavor. In Mexico and other Central American countries small cubes of avocado are added to soup as it is served. This imparts to the soup an agreeable nutty flavor that is pleasing to the novice.

A mixed sweet pickle made up largely of avocado cubes has been prepared. Thoroughly ripened fruit was chosen and prepared before it had softened, as otherwise it would have become mushy in cooking.—Year Book of Dept. of Agriculture.

FLORIDA ORANGE MEN ORGANIZE

The most important assemblage of citrus fruit growers that ever came together in Florida met last Friday in Tampa. The object of the meeting, which had been widely advertised, was to hold a free and open discussion of the unsatisfactory conditions that have prevailed in the orange growing industry in this state during the past few years, and to devise some effective remedy whereby the orange growers might realize a reasonable profit on the output of their groves. The meeting was very largely attended, many of the leading growers from all parts of the state being present. Josiah Varn, president of the Florida Orange Growers' Company, was instrumental in calling the meeting and arranging for an interesting program of speakers.

The most important feature of the meeting was the forming of a permanent organization, which will endeavor to bring to its support all the citrus fruit growers in the state and which will try to bring order out of the chaos that at the present time fitly characterizes the situation. Mr. Varn was elected secretary of the organization, which is as yet without a name, and which is but the forerunner of the perfected organization which will be brought about later in the summer. After some discussion it was decided to send a committee to California for the purpose of investigating the organizations there that their best features may be incorporated in the Florida organization.

The committee named is composed of Dr. F. W. Inman, Florence Villa, chairman; L. B. Skinner, J. W. Sample, L. W. Tilden, H. E. Heitman, J. J. Heard and W. B. Gray, all well known and prominent orange growers, who are personally interested in the success of the industry. These men all agreed to make the trip at their own expense, which they will do some time in April. They are expected to make a report at another called meeting about June 1, upon their return from the West.—Florida Produce News.

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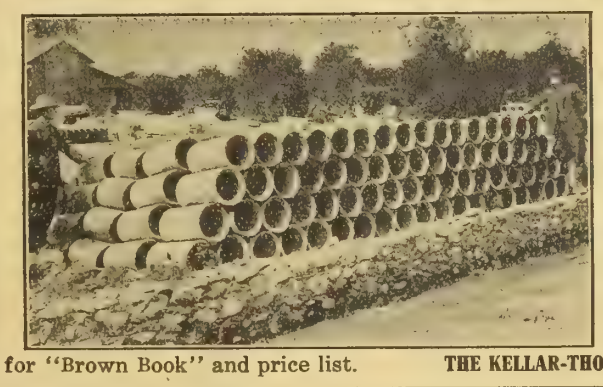

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Contents

PUMPING WATER FOR COVINA ORCHARDS, Cover.
DISTRIBUTION OF WATER IN THE SOIL, 435.
CITRUS.—Benefit of Humus; Avocado; Florida Orange Men Organize, 436, 437.
EDITORIAL.—Apple Driving Out the Orange; Schedule of Agricultural Train; Prune Growers Organize; Eat California Raisins, 438.
—Northern, Central, Southern, the Coast 439.
AGRICULTURAL NOTES ON THE PACIFIC COAST.
ORNAMENTAL GARDEN.—The Iris; Planting the Lawn; Asters, 440.
SMALL FRUITS AND VEGETABLES.—Sterilizing the Seed Bed for Tomatoes; Horse Manure, 441.
IRRIGATION AND FORESTRY.—Amount of Water Required; Failure That Made for Greatness, 442.
LIVE STOCK AND DAIRY.—Questions; Use Starters; Kale as Winter Food for Swine, 443, 444, 445.
DECIDUOUS FRUIT CULTURE.—Consumption of Raisins; Protecting Vineyards in France; George C. Roeding; The Apricot Output, 441, 446, 447.
GENERAL AGRICULTURE.—Directions for Destroying Pocket Gophers; The Farmer as a Factor; Dry Farm Crops; Ten Commandments, 448, 449.
CALIFORNIA FARM NAMES, 450.
POULTRY.—California Cardinals; Poultry Queries; Raising Guineas; Some Causes of Infertility; Profit in Water Fowls; Preparing Geese for Market, 451, 452, 453, 454.
QUERIES AND REPLIES.—Iris; Curing Lemons; Durum Wheat; Measuring Water; Alfalfa; Beans in Boxes; Guernsey Cattle; Citrus Culture; Grape Fruit Stock for Oranges; Ruptured Blood Vessel; Cream too Ripe; Japanese Iris; How to Sow Kafir Corn; Government Land; Pilularis; Silverskins, 455, 456, 457.
LEGAL QUERIES.—Ditch Nuisance,457.
HOUSEHOLD.—Two Lovers an' Lizette; Early Victorian; About the House; Buttermilk, 459, 460, 461.
PRODUCE MARKET.—Los Angeles, Markets; San Francisco Markets; Citrus Markets, 462, 463.

"APPLE DRIVING OUT THE ORANGE."

The Spokesman Review, published at Spokane, Wash., in the center of the great apple producing country, has "discovered" that the apple is becoming a formidable competitor in the markets of the United States with the orange. We feel the Review has endeavored to reverse the situation as we look at it. The apple has been the standby of fruit lovers of this country for so many years that it need not be concerned over the present remarkable increase in consumption of oranges. At least not to the extent of using a scare-head stating that the apple will drive out the orange. There is abundant room for greater consumption of fruits of all kinds. Let the apple growers take the cue from orange growers and induce more liberal use of all fruit consumption. The raisin men have become wise. Instead of making comparisons and showing that the apple is still preferred over the orange we think nothing whatever is gained for the apple grower. Let our apple growing friends take up this campaign of advertising and see if the increased consumption will not be so eminently agreeable that there will be no occasion for referring to the success of any other fruit. Speaking of the advertising campaign, the Review says:

"There advertisements, which appear without name or authority, are set in bold display type, double column measure, and this is the text: "Oranges are cheaper than apples and more healthful. Order a peck from your dealer."

Probably it is true that oranges are cheaper in the eastern markets than the high-grade apples of the Pacific northwest, but it is nonsense for the orange growers to assert that the product is more healthful than the apple.

The orange is an insipid fruit, of which most people soon weary, and its use is limited, while the apple lends itself to an almost infinite variety of cuisine. It may be served raw as oranges are served; it may be cooked into sauce or baked, roasted or fried, or made into pies and tarts; it can be evaporated and transported to the most remote mining and lumber camps, and its by-products of jelly, cider and apple wine are commodities of widest use.

The orange is outclassed by the apple at every point, and commercial apple-growing in the Pacific northwest is in every way a safer investment than an orange grove in California."

We do not think a single orange grower in California will take exceptions to all the good things the Review says about the apple. They will go further and speak in greater praise of this wonderful fruit which has been a favorite with the human race for many generations. But we will not agree and do not think that the Review honestly believes that the orange is an insipid fruit of which most people soon weary. Practically every use which is made of the apple is also possible with the orange. It makes the finest of sauce; a finer pie can not be imagined; a cake more delicious than one in which the "filling" is flavored with orange can not be baked. Jellies, marmalades, ciders and wines may be made from it.

Long live the "Apple of Gold" and may it always be granted a place beside its brother of the cooler latitude.

SCHEDULE OF AGRICULTURAL TRAIN.

As announced last week, the Agricultural Train is about ready for its fifth trip. The date, however, has been set over, which was a most wise move. The train will now start on next Monday morning at 10:30 o'clock from Los Angeles. The first stop will be at Compton from 11 a. m. to 12:30 p. m. Following that their meetings are as follows: Downey, 1:30 to 2:30; Whittier, 3 to 5:30, with evening meeting.

Tuesday, April 20th. Norwalk, 8 to 10 a.m.; Buena Park, 10:30 to 12:30; Anaheim, 1 to 3 p.m.; Santa Ana, 3:30 to 5:30 p.m., also evening meeting.

Wednesday, April 21. Smeltzer, 8 to 10 a.m.; Los Alamitos, 10:30 to 12:30; San Fernando, 3:30 to 5:30 p.m., with evening meeting.

Thursday, April 22nd. Burbank, 8 to 9 a.m.; Lankershim, 9:30 to 11:30; Simi, 1 to 2 p.m.; Moorepark, 2:15 to 5:15 p.m.; Somis, 3:30 to 4:30; Camarillo, 4:45 to 5:45; Oxnard, evening meeting.

Friday, April 23d. Oxnard, 8:30 to 10 a.m.; Montalvo, 10:15 to 11:15; Saticoy, 1 to 3 p.m.; Santa Paula, 3:30 to 5:30 p.m.; also evening meeting.

Saturday, April 24th. Fillmore, 8 to 10 a.m.; Piru, 10:30 to 12:30 ; Ventura, 3:30 to 5:30, also evening meeting.

Monday ,April 26. Nordhoff, 8:30 to 10 a.m.; Carpinteria, 1 to 2 p.m.; Santa Barbara, 3 to 5:30 p.m., also evening meeting.

This train is operated at great expense by the Southern Pacific Company which carries the entire financial end . Of course speakers and demonstrators are drawn from the force of the State University and from the State Horticultural Commission. Each branch is well represented on the train and the three cars of exhibits make this well worth encouragement by a large attendance on the part of the farmers wherever the train may stop. It was disappointing on the former trip to see the meager attendance in some sections. At that time the notice given was very short. For this trip the dates have been deferred so as to give more extended notice. It is worthy of still greater publicity than even now will be possible, but we trust every farmer who may read this will make an effort to get the information which is freely given by this demonstration train force.

PRUNE GROWERS ORGANIZE.

Co-operation seems to be in the air. Even Florida is sending a delegation of her citrus growers to study methods of marketing oranges in California. The raisin men have been trying hard to get into line for organization but have much work yet before them before that is accomplished. Walnut men are making the effort. The latest, however, to make a determined stand for thorough co-operation are the Santa Clara valley prune growers. Sometime ago a committee of fifty was appointed to devise plans and report to the entire body of fruit growers. That body met in San Jose and a committee of fifty placed in the hands of each farmer as he entered the room a slip stating the object of organization as follows:

1. Correction of wrong methods of curing and packing.
2. Stability and uniformity of price.
3. Fixing of a reasonable price to be charged by the Eastern retailer to the consumer.
4. Judicious advertising of Santa Clara Valley prunes; printing and distributing books containing recipes for preparing prunes in an attractive manner and in other ways working to increase the consumption of prunes.

Also another slip showing the recommendations of the committee to obtain these objects, as follows:

1. Growers to organize legal district associations under the new State law which was especially prepared for this purpose by the orange and walnut growers' association.
2. Organization of Central Growers' Corporation.

(a) All District Associations to become members of the Central Corporation.

(b) Growers not members of District Association to be allowed to become members of Central Corporation and to have equitable representation on Managing Board.

Prunes to be held either in District Associations or growers' hands, as growers elect, until sold and paid for.

The prune growers must organize and control their own organization.

In addition to these two condensed reports the committee made a more extended report outlining the form of organization, advertising campaign, system of inspection, cooling of fruit, prevention of price cutting, and in general a co-operative pulling together which will put the prune industry on a better basis than it is at present.

The spirit of harmony which prevailed in the meeting was such that those interested in the fruit industry feel much more hopeful than for sometime. We believe the organization will be perfected and trust will lead to entire success.

EAT CALIFORNIA RAISINS.

The above, which is the slogan of the raisin publicity committee now working in Fresno, has been taken up with such energy by people all over California, and to a certain extent already beginning to receive attention in the East, that the raisin committee at Fresno finds it is floored under rush of business. We wrote some time ago asking this committee for information and for the primer containing the recipes and facts regarding raisins. The committee has been so deep under the mass of business that we have not yet had reply. We trust this will be here in time for next week's paper which will still give a week for our readers to lay in a supply of raisins and know how to properly eat them. Therefore we promise in next week's issue a fund of raisin information which will help, we hope, in making popular the raisin with all people who eat.

A reasonably small quantity of apples is held in this country at this time as compared with other years. It is thought this will not total to exceed 700,000 barrels or about one-third of that of last year at this date. New York has the largest holding; Illinois has the second largest while California comes in third.

Reports from the Eastern peach growing sections go to show that the peach crop will be short of normal this year. The Northwest, especially Washington and Oregon, report about 95 per cent of the normal crop.

Agricultural Notes of the Pacific Coast

Northern California

Yolo county apricot growers report shortage of the coming crop.

Woodland farmers are greatly increasing the acreage of alfalfa.

Yuba county reports prunes blooming full with cherries promising good crop.

Anderson, Shasta county, is getting ready for the rose festival to be held on May 1st.

The two creameries at Meridian are paying out to farmers about $500.00 per day.

It is thought that pear blight is largely under control in the Capay valley, Yolo county.

A Contra Costa county farmer has perfected a solution which he believes will exterminate thrips.

The Gridley creamery has recently established an ice-making plant which is the first in that section.

Several hydraulic miners will be arrested and given trial in Sutter county for violation of the anti-debris law.

The state veterinarian will appoint sixty deputies who will have general oversight of the stock interests of the state.

A Petaluma poultryman suggests that a California hen would be a more fitting addition to the State seal than the bear.

A plan is being developed for the draining of southern Butte county which it is thought will reclaim much valuable land.

Orchardists near Gridley, Butte county, are contemplating the purchase of a large tract of land for almond culture.

A Eureka creamery man has just returned from Japan and reports possibilities in extension of butter market with the Japanese.

A Los Angeles firm which packed asparagus in Sacramento under Los Angeles brand has withdrawn from that section for this season.

The sale of the last prunes in Healdsburg was consumated recently. The output of that section for the year was about forty car-loads.

A project is on foot to form a fig growers' association amongst the fig producers of Winters, Yolo county. The district produces about 250 tons.

A Ukiah hop grower has contracted his hops for three years at 9, 11 and 12 cents per pound. Some others in the same section have contracts on the basis of 10, 11 and 11.

Oroville is planning for the planting of greater numbers of eucalyptus trees on land which was supposed to be ruined by the dredger miner. Thirty acres of this land will be planted and used as a park.

The Petaluma Incubator Company is contemplating the erection of a large new factory, but owing to an effort on the part of the city council to secure the land for street purposes, it is possible that they will remove to some other town.

Representatives of the California Fruit Exchange recently returned from a trip through the fruit marketing sections of the East and report financial conditions greatly improved with probability of getting returns from fresh fruit shipments this year.

Central California

Watsonville will make an exhibit of apples at London during the coming summer.

The creamery at Turlock, Stanislaus county, has been obliged to double its capacity.

During last season one firm in New York handled over 200 cars of Pajaro valley apples.

Porterville is making an effort for levees which will protect that section against stormwaters.

The San Jose Grange was recently given an address by Weather Observer Connell on the subject of frosts.

Kings county people are entering with enthusiasm into the "Raisin Day" preparation and promise to keep up their end.

The Coast Canner's Association reports sales of California canned fruits much more satisfactory than for some months.

The orange section of eastern Tulare county anticipates the early building of the Santa Fe Railway through their section.

A Dinuba farmer has found peas planted between orange trees to be exceptionally profitable. The peas were planted in November.

Farmers generally over the San Joaquin are pleased with work accomplished by the farmers union in disposing of fruit up to this time.

The women's improvement club of Madera has taken a lead in tree planting about that section and has been the prime mover in improving several roadways.

"Raisin Day" meetings are being held all over the San Joaquin Valley. The central committee at Fresno has issued one million leaflets with raisin information.

The Porterville Enterprise makes an appeal for home grown-vegetables and thinks there should be greater development of the apple industry in the eastern side of Tulare county.

The investigations of G. Harold Powell and his corps of assistants in Tulare county developed much the same condition as prevailed formerly in the orange sections of Southern California.

The State Board of Health is fitting a car at Palo Alto, the purpose of which will be to tour the country districts of the state showing wherein more healthful conditions may be established on farms.

The final step of the old California Raisin Growers Association was taken recently when the Judge of the Superior Court ordered the distribution of 25 per cent of claims due several hundred raisin growers.

Reports from Bishop, Inyo county indicate great damage to pine trees on the eastern slope of the Sierra especially in the Inyo national forest have been greatly damaged by girdling of the trees by porcupines.

One of the largest meetings of producers ever held in Santa Clara county was the last meeting of the prune growers which showed a determination to form an organization or "Central Grower's Corporation," through which prunes may be marketed at more satisfactory prices than heretofore.

Southern California

Colton hopes to be the location of the raisin seeding plant.

The Tustin Packing Company is busy finishing the packing of navels.

Lompoc farmers will form a stock company for marketing products for members.

Santa Ana health board is enforcing the ordinance against unclean dairymen.

Nurserymen report this a very satisfactory year, especially in the sale of walnut trees.

County Bee Inspector Pleasants of Orange county, inspected thirteen apiaries last month.

The building of the Laguna dam has shut off the navigation of the Colorado river above that point.

It is now reported that artesian wells have been found in the northwestern section of the Imperial Valley.

Santa Ana has new tree-planting law by which roadside trees are entirely under the control of a tree warden.

Farmers at Perris, east of Riverside, are hoping for the early establishment of a million dollar sugar factory.

Citrus sections are disappointed in that the recent state legislature failed to make proper provision for more extended citrus experiment station work.

Some orange packers have found advantage in shipping oranges in half boxes and this year's shipments in the small box has been greater than heretofore.

The Imperial Valley claims the shipments of agricultural products from that section aggregate a carload per day for each mile of railway in the valley.

Ranger Graham in charge of the Los Parietos tree planting station in the Santa Barbara reserve has planted during the past season 65,000 vines and 75,000 eucalyptus trees.

The investigations of the pomologist of the Department of Agriculture under the direction of G. Harold Powell is proving most profitable to the lemon growers of San Diego county.

One of the largest orange packing houses in Redlands was seriously damaged recently by the backing of four loaded cars against the walls of the house and in the smash-up over 1000 boxes were destroyed.

The canteloupe output of Imperial Valley will be materially reduced this year and will be later than any prior year. Figures show that there are about 5,000 acres of which only about fifty per cent will prove to be a good crop.

Forest Supervisor Charlton reports that the fire trails in the reserve in San Bernardino mountains are now in excellent condition and that over 50,000 young trees have been planted between Lytle Creek and Banning canyon.

Bean growers in Ventura county charge that some buyers have been endeavoring to bear the price of beans claiming that they would yet go down to two cents a pound. Fortunately the growers are not concerned regarding this report.

The Coast

Tillaamook county, Oregon, produced three million pounds of cheese last year.

Farmington, Wash., has had extensive planting of orchards during this spring.

It is estimated that 6000 cars of fruit will be shipped out of the Grande Valley, Colorado, this year.

Alaska will exhibit a pile of virgin gold at the Alaska-Yukon Exposition which is claimed to be worth five million dollars.

Live and dressed poultry has been exceedingly scarce in Seattle, Wash., markets and appeal has been made for heavier shipments.

Horse shows held at Walla Walla, Wash., and Mt. Angel, Oregon, recently brought out a remarkably fine showing of high bred stock.

The Polk county Mohair Association located at Dallas, Oregon, recently held its annual sale, prices ranging from 21 to 23½ cents.

Celery growers from Kalamazoo, Mich., have recently made large purchases of land at St. Maries, Idaho, and will plant extensively to celery.

Enemies of the State Agricultural College of Oregon are threatening to hold up the appropriation for that institution which they declare is too liberal.

The American Shorthorn Breeders' Association are offering $750 in cash for breeding shorthorns at the Oregon State fair to be held at Salem this fall.

The lake to be formed by the construction of the Roosevelt dam will be used by the Department of Agriculture as breeding grounds for native birds.

The dedication of the Laguna dam a few miles above the city of Yuma was consumated in the presence of a large gathering of people from California and Arizona.

Denver and Rio Grande Railroad combined with the State Agricultural college of Colorado are giving the farmers a fund of information from a special potato train.

It is estimated that twenty-five thousand people visited the poultry and horticultural demonstration train on the Southern Pacific in Western Oregon within four days.

A corporation with $100,000 capital will make extensive irrigation improvements during the coming year which will bring several thousand acres under cultivation at La Grande, Oregon.

The largest shipment of beef cattle ever made from Tempe, Arizona, was made last week when thirty cars were sold by one range owner. Prices range from $4.25 to $4.75 per hundred.

Farmers near Ontario, Oregon, have been experimenting extensively in growing sugar beet seed. Some excellent results have been made and it is hoped will develop into a large industry.

Peach orchards in several sections in the state of Washington were severely injured by the exceedingly cold weather of January. Some orchardists are saving their trees by pruning back heavily but no crop is expected this year.

SEEDS

Of Superior Quality

A large assortment of choice Garden, Flower, Tree and Palm Seeds.

Roses, Carnations

and other Flowering Plants.

Fruit Trees

and Berry Plants, all the leading sorts.

Eucalyptus

Seed and Trees.

Ornamental Trees and Shrubs.

Catalogue mailed free upon application.

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Great Southwest

Just received, one carload of **Eastern-grown Seed Corn,** and our **Colorado-grown Cantaloupe seed.** We have three strains, the **Eden Gem, Netted Rock,** and **Solid Net.** All of these have been tried, and proved more satisfactory than any other strains of the **Rocky Ford.** Dealers and Associations are requested to write for special prices.

Our carload of **Corn** consists of the several varieties best suited to the different sections of the Southwest. See page 112 of our catalog for description, and write for prices on large quantities.

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The Ornamental Garden

THE IRIS.

THIS flower was named from Iris, a radiant Goddess arrayed in garments of surpassing splendor, a personification of the rainbow which is a concentration of all tints, rays and coloring of beauty. It is one of the four great perennials: peony, iris, phlox, and columbine. There is a large family of these exquisite flowers. They range in time of blooming from early spring until the middle of July.

Here at our experiment station in York we keep 125 kinds and it is wonderful how a patch of somber earth, in a short time, can be glorified with such indescribable splendor. It is as if the rainbow were taken to pieces and remade into forms of loveliness, the parent bow never saw before. Their hardiness, rapidity of increase, marvelous tracery and interweavings of harmonious tints and colorings should make them favorites in every home.

They are of three sorts: The bulbous; those with rhizomes or spreading tubers; and the tufted rooted ones. The English and Spanish sorts have bulbs like tulips. They are rather tender and for the most part insignificant, so we have discarded them. The German sorts are very numerous, hardy and beautiful; they are called the garden orchids. They increase by rhizomes, which spread out like potatoes. We sometimes get 30 from one in two years. The tufted ones are the Siberian and Japanese sorts.

Among the leading sorts, without going into the high-priced ones, the following are worthy of mention: Florentina Alba; they have large, white, early and fragrant flowers. They produce the oris root of commerce, so much prized in the manufacture of delicate toilet articles. Another is Sans Souci. The flowers of this variety are vivid yellow, with drooping petals delicately veined with chocolate. Queen of May has a soft, rosy, lilac color of delicate beauty.

Parensis is a robust plant with large deep velvety blue flowers. Innocenze is a fine tissue-paper white, with large, very early flowers. Madame Chereau is of the most exquisite loveliness. Its petals are nearly white, fringed with lavender, exceedingly delicate and almost ethereal in loveliness.

In the Siberian family the varieties are all very hardy and multiply rapidly. Siberian Blue has one of the most intense, clear, and vivid blue flowers in existence; it is much prized by florists, easy to ship and its color blends harmoniously with those of other flowers. White Siberian is a lovely flower; it is much prized for cut flowers. Snow Queen, while still rare, is a flower that is in great demand, there not being enough to go around.

The Japanese irises are very large, often eight to ten inches across, with almost every conceivable blending and inter-weaving of color. In the West they must have wet feet at blooming time, and also shelter from the hot south wind.

All these flowers are cheap. Most dealers can send you an assortment by mail, prepaid, for $2 per dozen, and from these, in five years, you will have hundreds of charming flowers in great masses of loveliness. After getting acquainted with them, you will want some of the higher priced ones. Plant German and Siberian on good, rich, well drained ground. Put the bud about two inches below the surface. The Japanese variety will do best on moister ground, but must not stand in water in winter.—Farmer's Tribune.

PLANTING THE LAWN.

The planting of the lawn is of as much importance as any of the other garden planting. In fact, the lawn is really the most important gardening around the farm house, especially from the point of view of beauty. It makes the grounds look clean, neat and restful. It improves the appearance of the dwelling, making it harmonize with its natural surroundings and makes those surroundings sanitary and expansive in appearance.

There are two ways of planting the lawn. One is by seeding and the other is by sodding. Seeding is the easier method and slower in results, while sodding requires more labor, but gives quicker and more substantial results.

Lawn seeding, as well as almost all other seeding, is best done early in the spring when the soil is moist and young plants will grow without suffering for water. However, grass seed may be successfully sown at any season under proper soil and moisture conditions. Before seeding, the surface of the soil for the lawn should be cultivated, fertilized and smoothed. The lawn once planted is to remain permanently, and the more thoroughly the soil is prepared and fertilized the better will be the results in a permanent stand of grass. The finished lawn is to be smooth and even, and if this work is done at the first seeding very little lawn mending will need to be done afterwards.—Journal of Agriculture.

ASTERS.

Asters are becoming more popular every year and it will not be long before they equal pansies or sweet peas as the favorite flower. There has been a great advancement made in asters during the last five years in size, color and perfection of flowers.

People unacquainted with these advances can scarcely have any conception of their double flowers, especially when grown according to the latest methods of culture. For early blooming, start the seed about the middle of March. When the second leaves appear, transplant so as to stand two inches apart each way. When the soil has become quite warm they may be set out into the garden about 15 inches apart each way. For late flowering sow the seed in a finely prepared seed bed about the end of April. When well started set out where they are to bloom. Transplanting asters is highly recommended as it causes them to form stockier plants and produce larger and finer blossoms. If very large flowers are desired, allow each plant to bear not over eight stems or flower shoots; the others should be pinched off every few days. Asters require very rich soil in order to attain their greatest perfection.—Farmer's Tribune.

This season's planting of eucalyptus trees near Tulare will aggregate over 3000 acres.

HURST POTATO SPRAYERS

ON FREE TRIAL. No money in advance. Pay when convenient. Doubles your crop. Prevents blight, scab, rot, bugs. Spray FIRST, then pay us out of **Extra Profit.** Powerful pressure. Cyclone agitation. Strong and durable. **Brass** valves, plunger, strainer, etc. **Guaranteed 5 years.** Wholesale prices. We pay freight. Write us which machine you prefer, and get free Spraying Guide, Catalog, and **free** Sprayer Offer to **first** in your locality.

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We do not dump our goods on the eastern commission houses and take a chance on getting a price. No! We go right out and create a demand among the high grade dealers under a special brand. Our representatives are working among the eastern trade all the time. Every grower and shipper should write us for information about our methods of introducing CALIFORNIA Products under a guaranteed label.

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CRIMSON WINTER RHUBARB

$1.50 a Dozen, $6.00 per 100, $40.00 per 1000 March, April & May, best time to plant Rhubarb.

Berry Plants of All Kinds.

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EUCALYPTUS

Balled in moss and leaf mould. Need less water and can be planted later. Uniform size and being balled have fine roots. Fine to grow. Boxes of 100, sample lot, in flats and protected tops, only $1.60. Try them and you will use no other. Write for circular and special prices on large lots.

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Small, simple, sure. At all dealers. If your dealer does not handle same, send 20 cents in stamps and mention your dealer's name and get sample by mail postage paid at special rates. Manufactured by.

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Improved Casaba Seed

I am the originator of this superb melon. It is reasonable to suppose I have the best seed. The melon is the best. The seed is the best. Price $2.50 per pound, or 25c an ounce.

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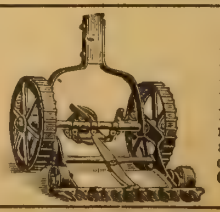

THE CLIPPER
Will cut tall grass and weeds and do all the trimming along the walks and drives. Your dealer should have them—if he has not drop us a line and we will send circulars and prices.
Clipper Lawn Mower
Dixon, Illinois.

When writing advertisers, mention Cultivator.

Small Fruits and Vegetables

STERILIZING THE SEED BED FOR TOMATOES.

LAST fall in the neighborhood of the Colorado Agricultural College, writes Prof. Leslie F. Paull, there was a considerable scarcity of tomatoes. Growers complained that there was something the matter with their seed, or with their plants which failed to bear. Generally they attributed it to the season. However, while this complaint was being made, one grower was picking from one to two bushels daily from a small garden patch. This man knew the secret.

This is the time of year to provide for a crop of tomatoes. Upon heavy soils, and sometimes upon light ones, the Fusarium blight prevents the development of the fruit, or the fruit is of small size, poor in quality, and sometimes even shrivelled.

What is the Fusarium blight? It is caused by a fungus, a mold something like that which comes upon bread, old cheese, etc. It is found in the soil and apparently acts a little like the smut-fungus of onions. It is known that if onions be planted in soil known to be free from this fungus, and are then transplanted to a soil where the disease has previously ravaged the crop, the young plants do not take it; whereas seed planted there results in smutty onions. Investigation has shown that the fungus enters the tip of the seedling, as it emerges from the seed; so, if the seed-bed has no smut in it, the onion escapes. How the Fusarium blight enters the tomato plant is not known. But it is known that it enters it during its early stages. Then the fungus lives on for a long time, showing no evidences of its existence in the tomato plant. However, during this time it is sending a web of threads through the tissues of the plant, and by the time the fruit begins to form, there is such a mass of fungus threads in the vessels that the fruit can only form with difficulty, if at all.

No amount of treatment at that time can do any good. The fungus is established within the plant. However, if the soil in which the seeds are planted is sterilized, the disease does not get a footing, and the plants will develop their fruit naturally and freely. The best method of sterilizing the soil for the seed bed is to fill a barrel with the prepared soil and take it to the exhaust pipe of some steam boiler. The pipe, or an attachment from it, should be passed to the very bottom of the barrel, and the steam allowed to penetrate for two or more hours, gunny sacks being packed about the top to hold in the steam.

While it is believed that the disease is contracted at germination, it is desirable to take certain other precautions. No other soil should be allowed to get into the sterilized bed or boxes. If the seedlings are pricked off young, they should be placed again in sterilized soil. Water that has been boiled and cooled should be used for watering during these early stages. No further precautions are necessary when it comes time to set these in the field.

For the home garden the soil may be sterilized by being spread out in shallow pans and baked in the oven. This is not so desirable as steam, since it does not leave the soil in such good condition.

Egg plants are also subject to Fusarium blight, and possibly also peppers. Cabbage, cauliflowers, broccoli, brussels sprouts, etc., which so easily "damp off" in the seedling stage, succeed better by being planted in sterile soil.

HORSE MANURE.

Good horse manure, delivered at the consumers' depot for $1.25 per ton, would furnish the essential fertilizing constituents at a very low cost. In many market-garden districts, farmers regard horse manure as a good purchase at $2 a ton. Naturally, the value of the manure is not based entirely on its content of fertilizing constituents—the vegetable matter of the manure being in many cases of quite as much additional service in the improvement of the physical character of the soil. It must be remembered, too, that manure varies widely in its composition, due both to the amount of litter present and method of caring for it. If the litter has been used economically, and the manure has not been subjected to heavy rains, it is much more valuable than if these precautions are not observed.

The Apricot Output

CONTINUING the reports made last week the following letters have been received:

Geo. Robertson, Fresno.

I report that I am unable to give you a definite reply so early in the season regarding the probable output of apricots in Fresno county. I have made enquiries however and find that the general opinion is that the crop will most likely be below the average. All now depends on the weather.

Thos. W. Spier, Ventura.

Regarding apricots; will say that it is too early by at least two weeks to give you any reliable information regarding the crop. I was in an orchard today and found very few cots and since receiving your letter I have called several growers up over the phone and they all say we cannot yet tell.

As soon as I can yet posted on crop conditions I will answer fully.

A. B. Gardner, California Fruit Canners Association, Fresno.

I figure we will have about 500 tons dried apricots in Fresno county this season. Of course this subject to having no frost to destroy any, this is about 50 per cent of a crop. As regards the output from Fresno that depends on the demand. We ship in here from outside points as required.

L. E. McCann of Golden State Canning Co., Ontario.

Replying to your favor of the 2nd, there will be fully 90 per cent of a full crop of apricots in the Ontario district, probably from 1,500 to 2,000 tons.

O. S. Hofmann, San Jacinto.

The output of apricots for San Jacinto valley is exceedingly promising and should say would be a full crop. Some new orchards coming into bearing. Have not been over the entire valley lately but everything promises well. Honey too.

The Gem of the Meadow

Prize Alfalfa Seed

Alfalfa is the king of all forage crops. No crops can be grown and harvested with less expense or greater profit.

With good moist soil and our Prize Alfalfa Seed six crops can be secured in one season, and that's hard to beat.

We have only a few cars left of this Prize Seed. It comes from the best, most prolific hay meadows, from the cleanest fields in the choicest farming section of Utah.

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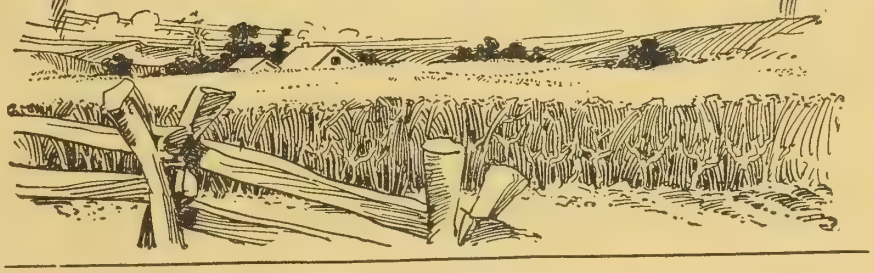

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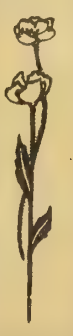

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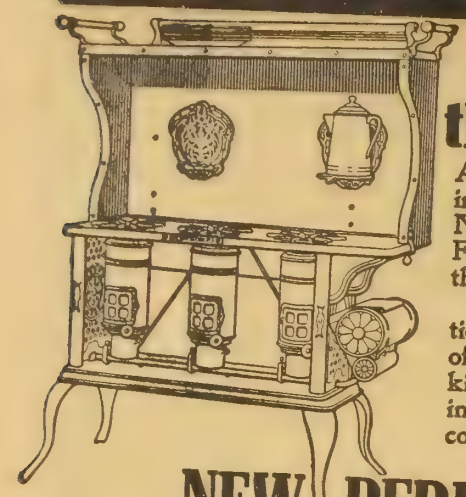

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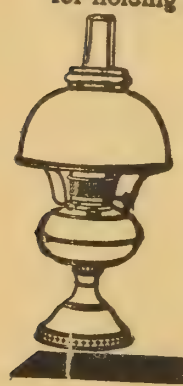

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Save half the labor both for yourself and horses and make the manure go twice as far as by hand spreading. The Success pays for itself over and over again in increased fertility of the land. It's the spreader based on experience. We've been building spreaders 31 years. It contains all the most valuable patented devices. The only roller-bearing spreader. Light and strong. No gear wheels to break. Equipped with wooden or metal wheels as desired. Write us about the Success. Be sure you know the Success before you buy a Spreader.

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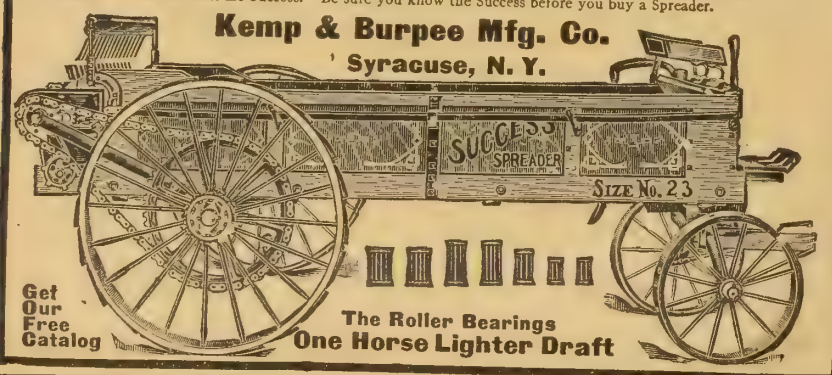

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115½ No. Broadway, Los Angeles, Cal.

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Irrigation and Forestry

AMOUNT OF WATER REQUIRED.

The amount of water required in the production of various farm crops has been the subject of an investigation on the Twin Falls tract, in southeastern Idaho. Alec McPherson, director of the private experiment station in that section, says that his object was to find out how much water is really needed to produce good crops on a 40-acre farm, consisting of about the varieties of crops that should be raised on the Twin Falls tract.

On cultivated or grain crops less water was applied than on the alfalfa or pasture. Mr. McPherson adds:

A better appreciation of the important part that water has in crop production may be had from the following figures, which show its relation to the production of given quantities of hay, grain, vegetables, sugar beets or other crops:

The amount of water in pounds, tons or acre feet used in producing a ton or 100 pounds of the different crops:

Alfalfa.

Four hundred and thirty two and seventy-eight hundredths tons of water required by the soil per ton of alfalfa hay, or equal to 3.82 inches in depth per acre.

Potatoes.

Four thousand six hundred and twenty-eight pounds of water received by the soil per 100 pounds of potatoes or equal to .205 inches in depth per acre.

Carrots.

Seventy-seven and seventeen-hundredths tons of water received by the soil per ton of carrots, or equal to .68 inches in depth per acre.

Beets.

Ninety and seven-tenths tons of water received by the soil per ton of beets, or equal to .80 inches in depth per acre.

Beans.

Fifteen thousand two hundred and ninety pounds of water received by the soil per ton of beans, or equal to .72 inches in depth per acre.

White Dent Corn.

Seventeen thousand six hundred and eighty pounds of water received by the soil per 100 pounds White Dent corn, or equal to .8 inches in depth per acre.

Flint Corn

Nine thousand two hundred and ninety pounds of water received by the soil per 100 pounds of Flint corn, or equal to .41 inches in depth per acre.

In computing these amounts the water that run off as waste was not figured in, only the amount received by the soil by irrigation and rainfall was taken into consideration.—Inland Empire.

DISTRIBUTION OF WATER IN SOIL.

(Continued from Page 435.)

water had penetrated to a depth of only a foot or less after a three days' flow in the furrows. Every orchardist should know his land thoroughly, with regard to its richness in elements of fertility, and especially with reference to its physical characteristics to depths of six or more feet, its relation to percolation, and its retention of irrigation water.

Percolation.

The percolation of water into the soil is influenced or controlled by a number of conditions:

By the air of the soil, which must give way before the advancing water—for otherwise it acts as a cushion and effectually prevents percolation of the water downward. This might happen in irrigation by flooding or by heavy rainfall, but in the furrow system the air escapes by lateral movement until the surface of the soil is saturated with seepage water from the furrows.

By coarse soil texture in which the water would meet with but little resistance on the part of the soil and gravity would cause it to sink rapidly downward.

By impervious or compact stratum, which would quickly arrest the downward movement of the water and cause its accumulation and probable loss by run-off.

By the root system of trees, which seems to facilitate percolation, but only along the lines of their extension and not through the soil.

By the kind of furrow made, whether wide or narrow, deep or shallow.

By cracks or crevices, holes or sand pockets, which of course afford a quick passage of the water deeply into the soil, which may mean a loss if the holes reach a bed of coarse sand or gravel.

Percolation is influenced by the time that water is allowed to remain in the furrow. The water should be made to reach the end of the furrow as soon as possible, and then the flow so regulated that the whole line may receive practically the same amount and to depths of eight or ten feet. If the movement is slow and the soil conditions favorable to percolation, then in the soil near the head ditch there is danger of loss by the percolation of the water far beyond the reach of the root systems.

FAILURE THAT MADE FOR GREATNESS.

A striking illustration of his sympathy for the people of the Confederate states was his attempt, earnest and ineffectual, in the last days of hostilities, two months before his death, to convert his own cabinet to his generous and long-cherished scheme of compensated emancipation. That he failed pathetically to carry through this plan, upon which his heart was set, illustrates also the fact that uninterrupted success is not necessary to the fame of the great figures of history.

Lincoln's failure to win support for this humane policy deeply grieved him, but the misadventure is not held against him in the estimate of his greatness. On the contrary, the fact that he made the attempt counts in his favor, and to-day especially endears him to multitudes of his countrymen, and is one of the very bonds that hold the country together.—From "Lincoln the Leader" in the February Century.

The Walnut Grower's Association is getting affairs in shape for next fall's crop, but as yet some associations have not manifested a disposition to come in.

Capitalists at Boise, Idaho, have purchased a large tract of land and will plant extensive apple orchards.

Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

By Mrs. Minna E. Sherman

QUESTIONS.

WHEN the Chinamen on the ranch are given new work they at once ask, "What for." In the plowing, sowing and cultivating if we say to each operation, "What for?" The chances are that in a few years the farming we do will be radically different from that we are practising today. The idea prevails in the new district of Imperial county that constant irrigation every month of the year is needed. This may be so, yet if it is, the land and vines must differ from those in other parts of the state. The dust mulch has been found to be much better than the constant watering. This constant watering was discussed during the recent demonstration train trip, and every time one or two men had already found it unnecessary. Man after man said they had no use for sulphur for they never saw mildew on the grape vines, yet several times young vine shoots covered with mildew were brought into the car. I well remember the first mildew that was sufficiently bad to be recognized as a menace in Fresno county. No doubt we had it in a small way long before the season of peculiar weather that gave it a chance to develop rapidly.

Questions.

Every day there should arise in our minds as we go about the fields and herds, questions if we are awake. The way to succeed is to ask questions whenever we reach a point that we do not understand. In farming the fact comes before the theory; then by comparing notes with others, we find our observation of facts have been coroborated by other observers. One remark that I think every demonstrator on the last trip heard daily was this, "O! I wanted to ask that question, but was ashamed to show my ignorance." Could anything be more foolish! As if there is anything to do with ignorance except to get rid of it as quickly as possible. Ask the first person that should know about the matter at the first chance. This is a good way to secure wisdom for verily there is little to be found in books but wearyness of the flesh. People are full of the stored wisdom of experience and in a few words often the result of a life time is told.

Cows That Pay.

The pleasures of being an editor of a Live Stock Department are many, chief however, are the many delightful letters that come to me from other women. I have one now full of practical questions that we will try to answer in this article. This is from a woman on a dairy farm, and is full of pertinent thought. The cost of keeping a cow on alfalfa land should be considered at the price the land is worth if other stock were pastured on it; this is $2.00 a head per month. The hay used should be counted at the prices it would sell for at the time of the second cutting.

During the eight months of this year each cow received feed at the barn. Two hundred and forty days, one ton and a half of alfalfa hay at $8.00 a ton is $12.00. Four and a half tons of sliage costing $2.50 a ton, making $11.25. One ton of mixed grain, barley, bran, Caprico meal and oil cake costing $28.00. Four months pasture at $2.00 a month makes $8.00. This makes a cost this season of $59.25 for feed.

This year is the highest of any in cost I have on the record. The usual cost being about $48.00 to $50.00 dollars a year. Had there been enough corn silage to have lasted the season the ton of grain feed would have been saved and the cows given as good returns as with the grain. The milkman even at the high prices prevailing is not getting rich this year. The point of this is that we must have better cows. This can be cheaply done by using a full blooded sire at the top of the string. The registered stock pays by the prices received for the calves alone. Two calves sold pay for the dam, and then after that each one is so much gain.

Testing.

The herd of common cows are readily made profitable by taking out the poor ones. The Babcock test is simple enough for a child to run and understand the working. These machines come from the small ones selling as low as $3.75 having two bottles, up to the large steam machines. Now when a cow gives four per cent milk that means that when the milk is tested by the machine that it shows that in a hundred pounds of this milk there would be four pounds of butter fat. Say the cow gives four per cent milk and 28 pounds of it a day. We multiply the pounds, 28, by the fat, four per cent. Twenty-eight multiplied by .04 gives us 1.12 pounds of butter fat as a daily yield. Now butter fat is a pure product while commercial butter contains a little casien, salt, water and some ash. There is 86 per cent butter fat, to as low as 80 per cent in commercial butter. In other words about one-sixth of commercial butter is water, salt, casein and other ingredients. Therefore dividing the 1.12 by six we have .188. Add this to the 1.12, we find the cow to be yielding 1.31 pounds of butter daily.

As one day's test may not indicate a cows quality very well, we take samples from each milking for three days, weighing the milk at each milking. These composite samples are kept sweet by using corrosive sublimate tablets in the jar. Then by multiplying the amount of butter shown by the test by ten the amount of thirty days is shown. Tests made the sixth week after calving, the fifth and seventh months and used as a basis of calculating will make a fair test of a cow's performance as a butter animal.

Heifers.

Before the heifers come in, feed them liberally and push them into flush condition. It is a mistake to have them come in weak and poor in flesh. If they come anywhere near paying their expenses give them a second year's trial. If these heifers are from common cows with a common sire they may not be worth a second trial and then should be turned off to the butcher. The sire should

Keen Sportsmen Never Waste Ammunition on "DEAD DUCKS"

The DeLaval Separator Company in their advertisements beg to be excused for devoting so much space to the United States Separator, which they consider a **"dead duck competitively."** This is a sweeping admission on their part that the United States Separator is not dead but is the most vigorous duck in the whole flock.

Keen sportsmen never waste ammunition on "dead ducks."

The facts showing who was the original Inventor of the first practical continuous flow Centrifugal Cream Separator, as disclosed by the records in the Patent Office at Washington, make it plain that Dr. DeLaval was not the original inventor.

These records show that DeLavel, beaten in his claim of priority by other applicants, bought up the Houston & Thomson application (which ante-dated his own), in which he filed a substitute application and added the identical claims that he was beaten on, in the interference with the other applicants.

The Patent Office then allowed these claims to Houston & Thomson and the Patent went to issue.

The United States Circuit Court of Appeals afterwards decided in effect that Houston & Thomson were not entitled to the broad claims, and Dr. DeLaval "was not in it."

De Laval bought the Houston & Thomson application to deprive the rightful inventors of their invention and then DeLaval got beaten at his own game in the Courts.

The DeLaval in their advertisements accuse the United States of utilizing in their Separator an invention which they purchased.

This is not true, as an examination of the DeLaval patent referred to and the United States Separator patents will readily disclose the falsity of the DeLaval claim. This is another "word claim" of theirs.

The 1909 Model United States Separator is covered by patents (720,154; 726,438; 732,750; 806,346; and 859,185) owned by the U. S. and which cover its scientific features which make the United States Separator so much superior to the DeLaval and every other Separator on the market. These are but a few of the nearly 40 patents owned by the United States.

Another thing, they accuse the United States of being responsible for the nullification by the Courts of a patent purchased by the DeLaval in their efforts to "squelch" the United States Separator, which patent they admit they never used but which they bought and paid $20,000.00 for, according to the Court records, in the hope that it would "squelch" the United States Separator that was beating them so vigorously in the market.

It is true the Court decided that they had spent their $20,000.00 in vain. The United States Separator accomplished better results with a bowl of half the diameter and with less than one third as many parts as the DeLaval had.

The DeLaval whine because the United States holds the World's record in a test with the DeLaval of 50 consecutive runs on 10 different breeds of cows.

If this record is so ancient and so non-progressive, what is the reason they have not been able to beat it in all these eight years they have been attempting to do so. Let them show a more progressive record in this Country or any other, if they can do so.

The U. S. is still eight years ahead of the DeLaval.

The DeLaval Company claim that the LaGrange Creamery is a little Creamery and admit that it is near Poughkeepsie.

If it is so small and of so little consequence, why did they spend so much money at the Dutchess County Fair, Poughkeepsie, N. Y., in the Fall of 1899 and get the President of that Fair to offer a money premium for a test at the Fair between the DeLaval and the United States Separators. **Why if it was so inconsequential did they stop their Factory and turn out all their men without loss of pay to "whoop it up" on the day of this great test?**

It was apparent to the public that the DeLavel Co. felt satisfied they had things fixed to win the contest, but the test of the cream showed that the United States had secured more butter fat from the quantity of milk than had the DeLaval.

Again if it is so inconsequential why did they have eight of their best canvassers immediately thereafter in that one locality to solicit orders and to prevent, if possible, the farmers from buying the United States Separator, yet when the canvass was closed there were three times as many farmers who had taken the United States, as there were who had taken the DeLaval.

The DeLaval accuse us of changing from year to year the date of President Hoyt's letter. This is a falsehood. We do not find it necessary to falsify records and thus deceive the people. **The facts remain true as Mr. Hoyt states them, that there are three United States Separators to every one of the DeLaval.**

The DeLaval Company advertise that they make more trade allowances for old United States Separators than for any other make of Separator.

We guess that is true, for there are more United States Separators in use and we have been repeatedly informed by users of United States Separators that the DeLaval agents have bored them to death to exchange and before giving up their persistence, have offered to give a new DeLaval in even exchange for an old United States.

Quite a number of former traveling salesmen of the DeLaval Company have informed us that they have been instructed from Headquarters to give a new DeLaval Separator for an old United States Separator, if they could not make any better trade and that their instructions have been from the DeLaval Headquarters, that the repairs on the DeLaval in a short time would make a good handsome profit on this kind of an exchange.

The DeLaval Company refer to their farm sizes of Separators as the "Baby" type.

The United States Spanked the "Baby" so hard in days gone by that they seemed for a while to try to tell the truth and not make such extravagant claims, but they have got into their old tricks again, making extravagant, false statements and "word claims."

The above we think is sufficient for this time; to be continued later on, but in the meantime send for Catalogue No. 20.

Vermont Farm Machine Co., Bellows Falls, Vt.

Warehouses in every dairy section of United States and Canada.

Prompt Delivery Assured California Customers from Stockton warehouse. No delays. Address all letters to Bellows Falls, Vt.

Buy the Best Stock at Right Prices

Pure bred Jersey Cattle—Poland China Hogs, Mammoth Bronze Turkeys. Large Selection of all ages. Satisfaction Guaranteed. Correspondence Solicited.
GEO. A. SMITH, Corcoran, Cal.

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We Have For Sale a Number of Registered Young Bulls and Heifers **$100**
All our stock comes from the celebrated herd formerly owned by the Pierce Land and Stock Co., the premium herd of Holstein Friesians in California. **Oakwoods Stock Farm Co., Lathrop, Cal**

Orange County sugar beets are showing up exceedingly well.

Lompoc is shipping heavily of fine fat steers.

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Cream Separators — Milk Cans
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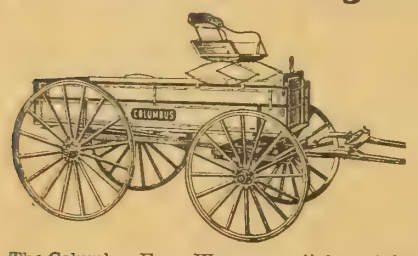
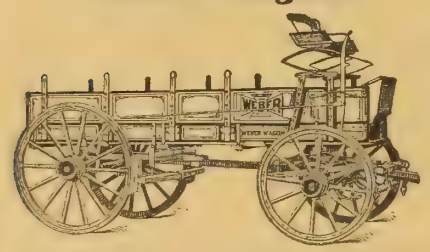
Columbus Farm Wagons



The Columbus Farm Wagons run light. A fact acknowledged by all users. Ask any farmer using one and convince yourself. Sold by leading dealers or direct by us.

Weber Wagons



Weber Wagons are well known for their light running qualities. Every farmer desires such wagons. THEY SAVE HIS TEAM. Write today for illustrated circular. Sold by leading dealers or direct by us.

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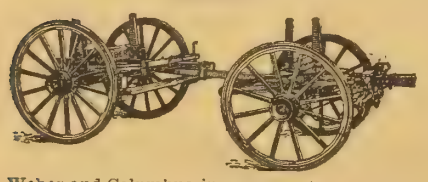

Weber and Columbus improvements are many. In fact, no matter what part of the wagon you examine you will find something to demonstrate that every detail has been carefully observed. If your dealer cannot supply you with these goods buy direct from us.

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Anthrax and Blackleg
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Are given the preference by 80% of California stockmen because they give better results than others do.
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Berkshires--Shorthorns
My Berkshires took 9 First, 6 Second and 4 Third Prizes and both Gold Medals. 50 Head For Sale.
G. A. MURPHY, PERKINS, CAL.

PURE BRED BERKSHIRES
Young Stock For Sale
Wm. H. Bird Box 6, Compton Cal.

VENADERA HERD
Registered A. J. C. C. Jerseys
St. Lambert and Flying Fox Blood. Margery Golden's Fox heads the Herd. Young stock for sale. GUY H. MILLER, Prop., R. 3, Modesto, Cal.

Geo. C. Roeding, Fresno, Cal., breeder of
Thoroughbred Holstein Bulls and Heifers
Thoroughbred Berkshire Boars and Sows

John Lynch Breeder of Registered **Shorthorns**
MILK STRAIN
Box 321 Petaluma, Cal.

not run with the stock if it is being culled for the butcher as it is hardly fair to sell him stock that has been bred. Where a pure bred sire is in use the heifers will come out much better. Then if they fail to make good sell them off quickly for it is too expensive to keep them in the dairy string.

Alfalfa hay if it is made before it has come into full bloom will bring in handsome return as a feed. The old saying is true, "Hay as fine as silk, is quick to make milk." I know of nine half Holstein cows that gave during the month of January on hay alone, four ten gallon cans of milk daily. Considering these were many of them heifers—none more than four years old, it was a good showing for alfalfa hay.—M. E. Sherman.

USE STARTERS.

THE success of the butter maker depends upon many things, but in view of the results of the recent "contest" a reference to starters is timely. There were twenty-four entries, though the butter in only half of them was made from cream ripened with a starter. Of course, "one swallow does not make a summer," neither do the facts obtained from one contest prove or disprove the value of starters. However, it is a significent fact that in the recent contest practically all the butter grading as extras was made with a starter. This whole field has been gone over so carefully in other states that it seems like ancient history to resurrect the subject. It is untimely to argue that starters are valuable aids to butter making; that fact has long been demonstrated. I refer to it now, because we were forcibly struck by the failure of so many to take advantage of the starter in controlling flavor in the entries submitted to the recent contest.

Several used such a small quantity that under the best of circumstances it could have little or no beneficial effect. With ordinary sour cream two to four per cent of starter is not enough. It is one thing to use starter, but quite another to use it properly. When used in sufficient amounts, the good effects were unmistakable. The highest scoring entry was made by using 15 per cent starter. Then again, it depends not only upon the quantity, but also upon the quality of the starter. A poor starter is worse than none. A good starter is indespensible to the making of good butter from gathered cream. California buttermakers are evidently not using starters generally. If not, it is a great mistake and needs immediate attention.

How To Make A Starter.

A starter can is inexpensive and ought to find its way into every creamery. In case it doesn't, a good starter may be made in a milk can or shot-gun cans to be found in all creameries. Clean, fresh whole milk or skim milk can be used, but as the top has to be thrown away the latter is preferable. Place in clean vessel and hold at 70 to 80 degrees Far., 18 to 24 hours until sour. Remove about an inch of the top and it is ready to add to the cream. The skim milk used, should be selected with care, preferably from a herd that is carefully handled. Often the milk of a single cow is allowed to sour and used to inoculate a larger quantity of pastuerized skim milk (180 degrees) thus constituting a starter. These are natural or home made starters and when cultivated from clean milk they give excellent results.

By inoculating a sufficient quantity of pasteurized skim milk with an artificial culture, the so-called commercial starter is produced. These, too, require care in preparation and protection from contamination. If the coagulated mass has a clean milk acid taste and aroma, it indicates a good starter. Nothing short of a clean flavor should be used as its purpose is to improve the condition of the cream to which it is added. Stir it well when added to the cream.

Amount to Use.

One of the buttermaker's difficulties is to secure enough skim milk for starter making purposes. Every effort should be made to secure enough so that from 10 to 25 per cent of starter may be used. With rich cream more can be used than with thin cream, as the dilution of the thin cream affects the ease of churning. With 30 to 35 per cent cream, 20 per cent of starter can be used to advantage. Prepare it carefully and add as liberally as the cream will permit for thorough pasteurization and starters only, can California butter be immediately improved. Begin now to use starters if you never have used them before.—Herbert A. Hopper, University Farm.

A HOT SUMMER ON THE WAY.

As the balmy spring days swing by, one by one, and the coming of summer is heralded by an occasional hot day, it all serves as a reminder of the heat of previous summers and of the fact that no matter how hot the coming summer may be, there will be the usual work to do in the kitchen.

In homes where the work is done on a hot coal or wood stove, the situation is a particularly trying one—as it means added heat and discomfort—to say nothing of the trouble of carrying coal, wood and ashes; of having to wait for the fire to get started; and of having to keep it going when not actually needed.

But there is now a way by which all this unnecessary discomfort and trouble can be easily avoided—a way by which the cooking, baking, washing and ironing may be done without having an extra degree of heat in the kitchen. This happy result may be accomplished with the New Perfection Wick Blue Flame Oil Cook-Stove, a wonderful cook stove so constructed that all the heat is concentrated in the cooking, baking, in the heating of the irons and wash boiler, without being thrown off into the room to make an unbearably hot temperature.

Besides this great feature of comfort, the convenience must also be considered; and it is here, too, that the "New Perfection" excels the coal and wood stove. It is ready for business the moment the match is applied; it can be turned "low," "medium" or "high" at will; or, if required, three different sized flames can be had at the same time.

There is no stove work that the "New Perfection" will not do. From morning till night—from Monday to Sunday—from wash-day to baking day its usefulness is without end. And it does its work so quickly. No waiting for fire to get started—no late meals—no uncertain results.

The "New Perfection" burns ordinary kerosene and soon saves its own cost in fuel-economy. It is the only oil stove with a cabinet top—a feature which gives it the appearance of a modern steel range. Meals can be kept hot after they are removed from the blaze. It is also fitted with drop shelves that may be used for keeping hot the tea or coffee pot. Shelves can be folded back when not in use. Also has racks for holding towels.

Another home comfort is the Rayo Lamp, a lamp that produces a clear, steady light of unusual brilliancy, and yet so mellow as not to hurt the eyes. Made of brass, beautifully nickeled, and having a handsome shade, it is an ornament to any room, and can be used with equal satisfaction in the library, dining-room, living room, parlor or bedroom.

The New Perfection Wick Blue Flame Oil Cook-Stove and the Rayo Lamp are two articles of real home comfort, and are effecting a great saving of time, trouble and health in thousands of home everywhere.

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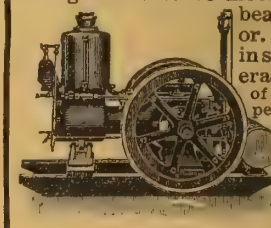

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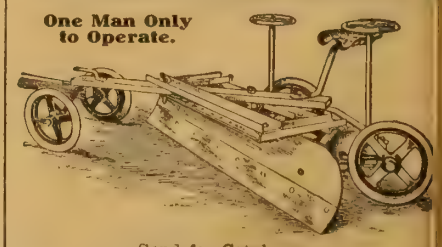

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KALE AS A WINTER FOOD FOR SWINE.

Hog raising in Oregon has, as a general rule, not been considered a very profitable branch of the live-stock industry. Especially is this true of the methods employed on the farm. And up to within the past few years the growing of more pork than used on the farm was an exception. But since creameries, cheese factories, and the growing of the thousand-headed kale have come into vogue in this state, especially in the Willamette valley, the pig industry has made a healthy growth.

The creameries and cheese factories create a large by-product of skim milk and whey, both of which when properly used make cheap and valuable pig foods.

Since the acreage of corn in this state is small, grain of all kinds is too high priced for Oregon farmers to feed their pigs through the winter months and compete successfully in pork production with the pork-producing farmers of Nebraska and Iowa.

Grain too Expensive.

The pork producing problem in Oregon necessarily resolves itself into pigs with a minimum amount of grain and a maximum amount of skim milk, whey and kale, or other cheap foods. Some dairymen have solved the problem by giving skim milk and whey as the cheap maximum ration and adding just enough grain, usually bran or shorts, to give the best results. This combination of food stuffs is generally fed in the proportion of one pound of grain to three pounds of skim milk or six pounds of whey.

The skim milk or whey and the grain feeding problem as indicated above, has been pretty well solved and is demonstrated by the fact that some succulent food is highly necessary if the pigs are to be made to do their best through the winter months in growing and remaining healthy.

The thousand-headed kale has been introduced as a substitute for this long-needed cheap food. It is a very succulent nutritious forage plant much grown in England and France, but of late it has been found admirably adapted to the most mild climate of the northern Pacific Coast region and is likely to be of much wider adaptation, especially where the winters are not too severe. It is closely related to rape, but the plants are much taller and the leaves are much larger, longer and broader. It does not head up like cabbage. The name thousand-headed kale refers to the numerous branches the plant has when given plenty of room to grow in.

Its Value.

For the purpose of ascertaining the value of kale as a winter food for hogs, an experiment was conducted from the 1st of December, 1907, to the 1st of March, 1908. Nine pigs were selected and placed in two lots. Lot 1 consisted of three mature hogs and lot 2 consisted of six young shoats weighing about ninety-three pounds each.

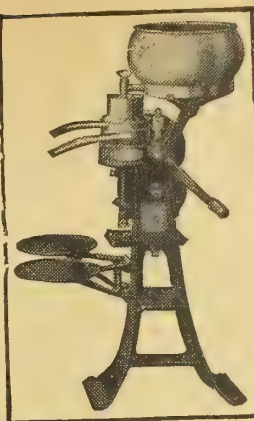
One sow in lot 1 farrowed pigs about the middle of the second period and hence was taken out, thus accounting for the loss. The remaining two finished the period in good condition.

Lot 1 was taken out of the experiment at the end of the second period and lot 3 added, which consisted of three young pigs of Berkshire crosses and weighing about sixty-one and one-half pounds each. They were fed all the kale they would eat up clean and given skim milk and whey to drink instead of feeding chopped wheat as in lot 2.

In lot 1 the pigs did not seem satisfied during the experiment and it was difficult to get them to eat the kale up clean. At first they would not eat it at all, but later they became accustomed to it and ate it fairly well. Lots 2 and 3 took to eating it very readily and cleaned up all that was given them. They seemed to be more satisfied, were in better condition, and made better gain than lot 1. Lot 3 fed very evenly on the amounts of kale from day to day and seemed to do fairly well. The combination of kale and skim milk made a rather watery feed and the pen was continually wet and sloppy. The combination was lacking in crude fibre but for the short period the pigs did well without it. In conclusion, we say that kale is almost a winter maintenance ration for swine, but when fed in addition to a little grain or skim milk good growth may be made. Especially is this true of young pigs, as has been denoted by the tables. Taking all in all the feeding of kale to swine will be a cheap method of carrying pigs through the winter months.—Oregon Countryman.

Stock in the Mountain Meadows.

The secret of keeping the boys on the farm is in keeping them interested. One of the main reasons why they leave is because they can do better elsewhere so far as money is concerned. Away from home they command a money wage at once. Of course it is seldom that their condition as a whole is improved. Fathers must remember, however, that a real dollar looks as big to the boy when it's "his very own" as the hind wheel of a wagon.



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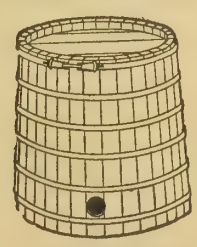

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3 Baskets per Tree.
Rate, 3¾ tons per Acre.

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Peaches 4 to 6 feet, $15.00 per 100; 3 to 4 feet, $13.00 per 100.
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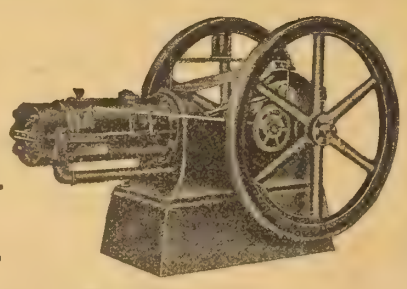

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Grand Clean-Up

Satsuma Plums, $18 per 100. Bartlett Pears, $15 per 100. Peaches, $15 per 100.

Phillips, Orange, Henrietta, Tuscan, Winter Clings and Muir. Strong, fine first grade trees. We still have a good assortment of other fruit trees; persimmons, grape vines, raspberries and roses. Ornamental nursery stock all the year around.

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Don't be sidetracked by using inferior Fertilizers, but use the best - - - - - - **Tom Lewis' Fertilizers**

Unequaled for Field, Garden, Orchard, Vineyard, and All Kinds of Vegetation. For catalog and prices write

Thomas Lewis, 1916 Tenth St., Sacramento, Cal.

When writing advertisers, mention Cultivator.

Deciduous Fruit Culture

By J. W. Mills

CONSUMPTION OF RAISINS.

THE present time, when much interest is being shown in the promotion of the consumption of California raisins, seems a favorable opportunity to endeavor to enlighten the general public as to its great value, and the comparative neglect with which it has hitherto been treated, writes George Robertson in Fresno Republican.

An effort is now being made to increase the consumption of this old and well-tried product in the United States, and there is no reason why it should not prove a great success, as there is ample room for a great development in the marketing of raisins.

To give a practical illustration of this fact it should only be necessary to quote a few figures, which will speak for themselves.

In the United Kingdom.

It may be said, without exaggeration, that for generations the United Kingdom has always been the greatest market for raisins and currants. It has been an almost daily article of diet in some shape or form for both old and young, especially the latter. The boys of Christ's hospital, London, the well known "Blue Coat School," a large and ancient institution, receive a packet of raisins annually, the funds for which were left by one Peter Symonds, in his will dated 1586.

The United Kingdom, as already stated, is not only the largest consumer of raisins and currants, but also the leading distributing center, large quantities of both fruits being exported out of bond, especially from London.

In order however to make the quantities consumed in the United Kingdom exact, the figures for home consumption only are here given, the balance being exported to other countries. In the case of the United States, or more accurately, California, this unfortunately is not possible. It is true that the imports and exports are exact, but the total amount of the crop, and of the holdover when there is one amounting to anything, is a question of estimates.

The population of the United Kingdom according to the last census, amounts to 41,459,000, and that of the United States, 75,694,000.

The home consumption of raisins in the United Kingdom was 73,161,312 pounds, currants, 142,789,696 pounds. Total, 215,951,008.

Equal to per head of population, almost exactly five pounds.

	Pounds
California raisin crop 1908,	100,000,000
Holdover, say, ...	60,000,000
	40,000,000
Add imported raisins 1908..	4,875,691
	44,875,691
Less exported Cal. raisins..	7,084,178
	37,791,513
Currants imported	29,436,151
Total	67,227,664

Equal to .89 pound per head of population, but allowing for under estimates, we may safely call it one pound per head of population, compared with five pounds per head in the United Kingdom.

This clearly proves the large margin there is between the amount now consumed in this country and the extent to which the consumption might be developed; in other words, if the people appreciated raisins as they have done for centuries in Europe, the acreage in raisin grapes might be more than doubled, and the growers still obtain a fair price for their products.

Raisins as Food.

In Europe the "grape cure" is of long standing and thousands flock annually to the vineyards of the Rhine, Danube, and the Moselle, for the grapes, which are regarded as a universal remedy for impaired digestion, and diseases of the bowels and kidneys.

Each one begins with half a pound daily, increasing gradually to four or five pounds a day.

The food value of the grape or raisin is greater than that of any other fruit in popular consumption. This superior nutrient quality is due to the large amount of sugar, also of gluten, mineral salts, and fruit acids, together with a lesser quantity of water than usual in fruits. Grape sugar is the chief nutritive constituent. The particular advantage which grape-sugar possesses over all other types of sugar is the ease of its assimilation. Grape-sugar, unlike other sugars, is naturally in the state to which all other carbohydrates must be reduced by preliminary digestion before they are ready to be absorbed by the system.

Another authority states that it is the sugar especially that gives food value, while the mild acids help in other ways in the maintenance of good health. The diet of the young, especially, can be advantageously modified by the liberal use of such an article of food as raisins. Much more might be written on this subject.

Currant Advertising.

A few years ago the Greek currant growers found themselves in much the same predicament as the California raisin growers today, owing to over production and low prices. The Greek government came to their rescue, and organized a corporation under the title of the "Societe Privilegee Pour Favoviser la Production et la Commerce du Raisin de Corinth," which now controls the crop.

In the two years ending 1906-7, they spent $175,000 in advertising to bring the value of currants as a food before the British public. It serves as an illustration of the remunerative advantages of advertising, that, in spite of this heavy expenditure, they secured an increased net profit of nearly three times what they earned in the previous year.

PROTECTING VINEYARDS IN FRANCE.

The vineyardists of some sections of France sustain great losses some years by frosts after growth has started in the spring and from hail storms when the crop is maturing. The growers often resort to smudging as we do and here is their process: Small wooden boxes open at the top are filled with an inflammable composition consisting of a mixture of equal parts of resinous with earthy matters—clay, terra alba and the like—reduced to a fine powder and pressed into a compact mass. In the center a wick extends through the compound and serves to kindle it. The wick, however, may be dispensed with and the composition ignited by pouring a few drops of alcohol, petroleum or other inflammable oil over the mass and applying a match. These boxes, about eight inches long by six wide, made of pine wood ordinarily, are placed in line about thirty feet apart around certain areas, say of fifty acres. There is but little danger of frost when a dark or cloudy morning follows a cold night. The trouble comes when the first rays of the morning sun strike the almost

frozen and unprotected plants. By the smudging process a dense cloud of smoke is produced, hanging over the vineyard long enough to protect the plants from the sun's rays and give them a chance to recuperate from the dangerous effects of the frost. The composition in the boxes to windward only is ignited, the thick, black, heavy smoke hanging over the field forming a shield against the sun's rays. If it is desired to extinguish the fires it is only necessary to have an open box a trifle larger than the other by means of which the flames are quickly smothered.—Field and Farm.

APRICOT OUTPUT.

Continuation of Apricot estimates may be seen on page 441.

George C. Roeding

WE recently heard a keen and observing man say that the one man who had the best grasp on the horticultural situation in California, especially from a commercial standpoint, was Mr. Geo. C. Roeding of Fresno. Mr. Roeding has spent his life in horticultural work in this state and has built up what is doubtless the largest nursery business on the Coast. These nurseries in four different tracts cover a total of nearly 1700 acres and the products from them have been planted in very nearly every nation in the world, and we doubt if Mr. Roeding's advertising campaign carried on in many countries has not been a great factor in making known the extensiveness of the fruit industry of this state. These

nurseries have the widest range of products, though deciduous fruits and grape vines are the strongest factor.

Their magnitude cannot be appreciated excepting by one who drives over them and sees the intensive culture necessary to produce such plants as are raised. But something of an idea of the extent may be had from the book "California Horticulture," written by Mr. Roeding and in which is a list of the plants grown. This book in its way is one of the most complete that refers to fruit culture which this state has yet produced.

But Mr. Roeding's principal credit is not so much from writing books as in doing things. If there is a hard worker in the world it's Roeding. His day's work is two for the ordinary man—in other words sixteen to eighteen hours and under most complete system at that. Each day's mail brings to his desk a stack of letters approximately a yard high.

This strenuous life is made necessary by his own large interests, and in addition by his work for the public welfare, which of course, always falls to the busiest of men.

Only this week we had a chat with Mr. Roeding while in the South on a mission for this state in preparing for the Alaska-Yukon-Pacific Exposition. He is in charge of the Department of Horticulture for California. His duty is the arranging of horticultural and ornamental plant exhibits in the California building and grounds. It may be said that such work is in the interests of publicity or of advertising of the advantages of California's wonderful climate and soil. This is desirable even necessary in order to bring to our rich valleys the capital and labor necessary for their development.

Mr. Roeding's greatest work, we believe, is in making a commercial success of fig culture in this state. To him more than any other one belongs the credit of the introduction of Blastophaga or the little insect which first made fig culture possible. We are of course well aware that in this matter others would take the greater credit but we know that the suggestions as given to the Department of Agriculture that the introduction of this little insect might be accomplished through the department was made by Mr. Roeding. Prof. Swingle at that time in Asia Minor was deputized to bring a number of the insects to America. This was done and later Mr. Roeding, to secure a more perfect knowledge of the methods of work there and also to secure a further importation of the insects made a trip to Asia Minor. This enterprising citizen of our own state not only initiated the movement for the introduction of the insect but has followed up with his own personal efforts to secure results and consequent great profit to the fruit industry.

We are glad to present a photograph of Mr. Roeding to our readers.

LARGEST VEHICLE MAKERS IN THE WORLD
Studebaker
THE STUDEBAKER PLANT COVERS 101 ACRES

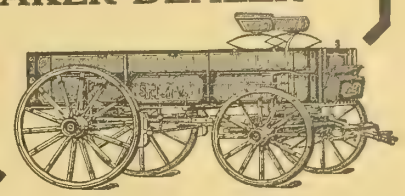
Means Lowest Yearly Cost

The greatest economy in buying a farm wagon lies in its years of service,—a *Studebaker* will last so much longer than an "ordinary" wagon that no matter how cheap the ordinary wagon may be the *Studebaker* costs less in the end. *Studebaker* quality has its basis in fact: Every piece of lumber in the *Studebaker* wagon is air seasoned two to three years. If it isn't right then it isn't used. Trained men select New England black birch hubs; choice white oak for spokes and felloes; the best butt cut, second growth hickory for axles; that's the quality of material. Then every *Studebaker* wagon is ironed and reinforced in every way that will add strength, with refined iron; then painted in a thorough and durable manner. These are the reasons why the *Studebaker* wagon has kept the lead for nearly 60 years.

SEE THE STUDEBAKER DEALER

Ask him to show you the *Studebaker* line of farm wagons, farm trucks, buggies and harness. *If you don't know a Studebaker dealer, write us.*

Studebaker Bros. Mfg. Co.
South Bend, Indiana



Newell Mathews Co.
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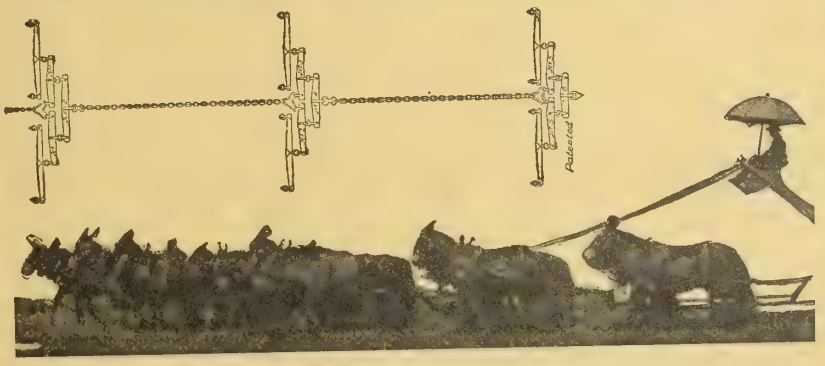
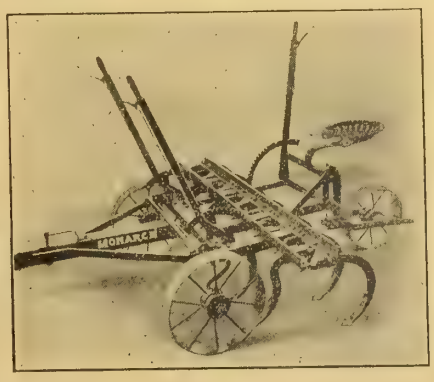
The Schandoney Equalizing Hitch



for Combined Harvesters, Plows, Harrows or for any other Draft work requiring four or more animals. Absolutely no whipping required and every animal must pull its share of the load. Over four thousand of these HITCHES now in use and not one a failure. For further information, Catalogue, etc., write today.

Schmeiser Manufacturing Company Davis, California

OUR MONARCH CULTIVATOR



Is designed for heavy work. Has great clearance (17 in.) between front and rear standards, which permits the working of trashy or lumpy ground, and lightens draught. While designed more especially for field use, it is now becoming a favorite among orchardists where deep cultivation is desired. By the arrangement of levers it can be carried level or deeper on one side if desired. Write

Killefer-Griffith Mfg. Co
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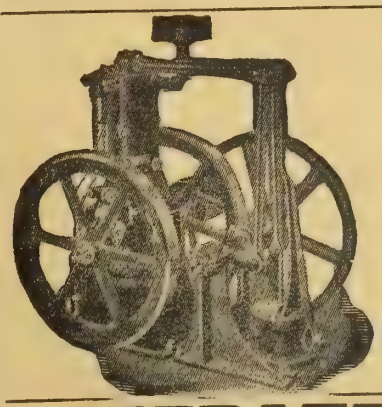


A Handy Little Engine

Just the thing to run the feed cutter, the pump, the churn, the grinder, or anything on the ranch. It's well named

The Little Wonder

Write or call on

Wm. Gregory
602 No. Main St. Los Angeles, Cal.

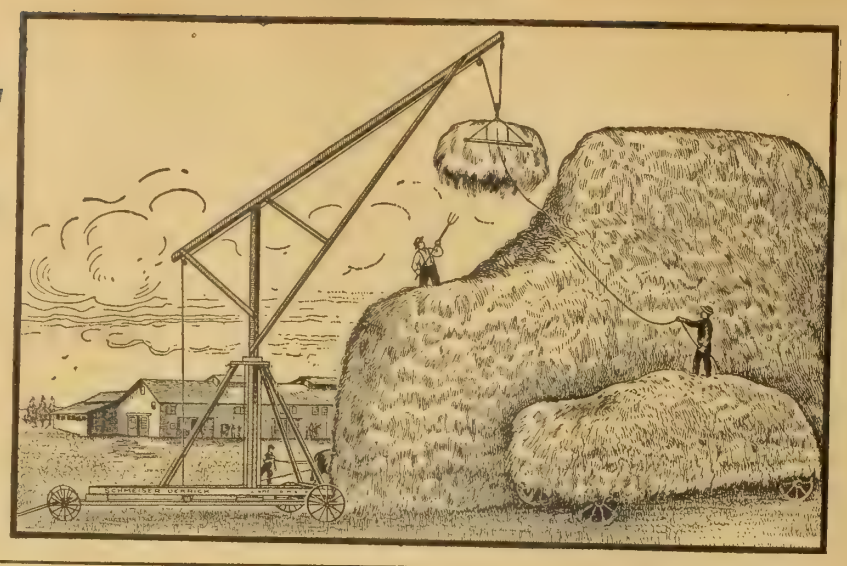
NITRATE OF SODA

We are prepared to furnish Nitrate of Soda at the lowest market price, and will be pleased to quote prices and furnish literature to any one interested, on application.

NITRATE AGENCIES COMPANY
W. S. SPARR, Agent, 321 Stimson Block, Los Angeles

The Schmeiser Portable Automatic Derrick

The State is Using a Number of These Derricks on the Experimental Farm, at Davis, With Great Success.



No Guy Ropes Required

Any kind of a fork or a net may be used, whichever may be desired.

You can not afford to be without it. Will pay for itself the first season, every year after that doing your work for nothing. Write for descriptive circular and we will tell you how it can be done.

Schmeiser Mfg. Co.
Davis, California

General Agriculture

DIRECTIONS FOR DESTROYING POCKET GOPHERS.

From a bulletin written by David E. Lantz, assistant in the Bureau of Biological Survey, we note the following regarding gophers:

Pocket gophers infest all the States and Territories west of the Mississippi, and parts of Illinois, Wisconsin, Florida, Georgia, and Alabama. They occur also in southwestern Canada and over the greater part of Mexico.

Throughout their range pocket gophers are very destructive to crops. They eat the roots of fruit trees and in this way sometimes ruin whole orchards. They eat both roots and tops of clover, alfalfa, grasses, grains, and vegetables, and are especially harmful to potatoes and other tuberous crops. Besides this, they throw up innumerable mounds of earth in meadows, pastures, and grain fields, which cover and destroy far more of the crop than is eaten by the animals or killed by having the roots cut off. These mounds also prevent close mowing, so that much of the hay crop is lost, and the pebbles they contain often break or injure farm machinery.

Pocket gophers may be destroyed by poison, by traps, and by the use of carbon bisulphid.

Poisoning Pocket Gophers.

Poisoning with strychnine is the most effective means known for killing pocket gophers, and, as it involves the least expenditure of money and labor, the Biological Survey recommends it for general use. As a rodent poison to be used by farmers, strychnine has several advantages. Its action is sure, its deadly character is known to most persons, and its bitter taste is an additional safeguard against mistaking it for a harmless drug. Strychnia sulphate is the most convenient form of the poison, since it is freely soluble in hot water and in the natural juices of vegetables used as bait. To disguise its bitterness so that rodents may not be deterred from eating the baits, sugar is often employed, or the strychnine may be mixed with its own bulk of commercial saccharine. A sugar syrup poisoned with strychnine may be used with excellent results. It is prepared as follows:

Dissolve an ounce of strychnia sulphate in a pint of boiling water. Add a pint of thick sugar syrup, and stir thoroughly. The syrup is usually scented by adding a few drops of oil of anise, but this is not essential. If preserved in a closed vessel, the syrup will keep indefinitely.

The above quantity is sufficient to poison a half bushel of shelled corn or other grain (corn recommended). The grain is steeped in hot water and allowed to soak over night. It is then drained and soaked for several hours in the poisoned syrup. Before using, corn meal may be added to take up the excess of moisture.

Dry crystals of strychnine also may be used. They are introduced, by means of a knife, into small pieces of potato, carrot, or sweet potato, or into entire raisins or dried prunes. A single large crystal (or several small ones) is enough for each bait. Raisins are especially recommended because they are easily handled and contain enough sugar to disguise the bitterness of the poison.

Select the freshest hill or mound and with a narrow garden trowel follow the soft earth of the tunnel until the main runway is reached. By noting the direction from which the earth was pushed out and locating the closed entrance, the burrow may be readily followed and the main runway quickly found. The poisoned raisin, corn, or small potato should be placed well back in the main runway and the openings closed.

Trapping Pocket Gophers.

Trapping is a successful method when followed intelligently and persistently. It is especially adapted to small fields, orchards, gardens, and irrigation embankments, where only a few gophers are present; but in the case of large areas that are badly infested, the method involves too much labor.

In using the ordinary steel trap, the first step is to make an opening into the main gopher tunnel. The trap should then be sunk so that the jaws are level with the bottom of the runway and lightly covered with green clover, alfalfa grass, or even loose soil, care being taken that these do not clog under the pan, or trigger. No bait is required. The hole should be just large enough to receive the trap and should be covered so as almost to exclude the light. Scalding the trap frequently to remove the animal odor is important.

Some of the special gopher traps possess the advantages of ease and simplicity of operation, and kill the animals instantly. These special traps should be set in the laterals leading into the main tunnel of the gopher, or at the entrance of open burrows where fresh earth is being thrown out. The trapper should choose the freshest of a series of mounds and dig along the lateral until it is found clear of soil.

Carbon Bisulphid.

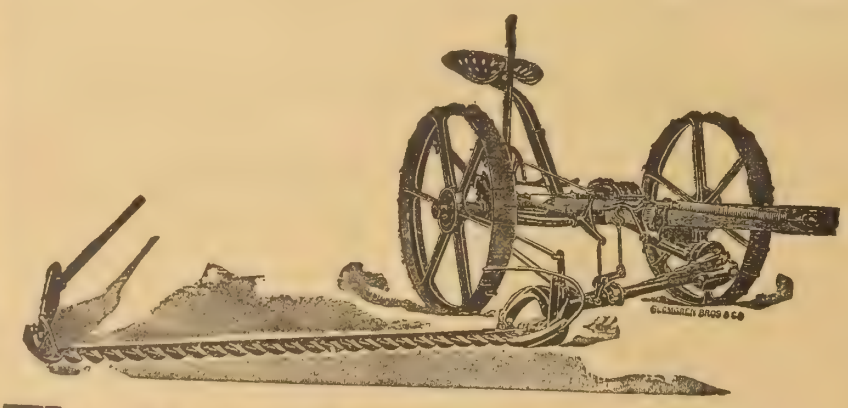
Carbon bisulphid has been employed for killing pocket gophers, and under favorable conditions its use is recommended. If the burrows are extensive or the soil dry, the gases are dissipated so rapidly that a large quantity of the liquid is required to kill the animals and the method becomes too expensive. If, however, the burrows are simple and the soil moist, bisulphid may be used successfully. For pocket gophers an ounce of the liquid for each burrow is sufficient. The carbon bisulphid is poured over a bunch of cotton, rags, or other waste material and this quickly pushed into the burrow, which should be closed at once.

Co-Operation.

Any farmer may readily rid his premises of gophers by the use of poison or traps. Unless, however, the entire community unites in active and intelligent co-operation in the de-

The Cost of the best Mower is lower than the cost of the cheapest Mower at the end of one season's use.

The best Mower gives the best service all the time.



The New Standard Mower

TIME AND LABOR-SAVING DEVICES and DEVICES FOR PREVENTING FRICTION found only on the NEW STANDARD MOWER.

The floating cutter-bar provides a frictionless channel for the knife and prevents wear on the guards. The guards are protected by chilled reversible rails, found only on the NEW STANDARD. Sixty cents will replace an entire set of rails on a five foot bar. To replace only two guards on other mowers will cost as much.

All shafts run in detachable sleeves and there is no wear on the main frame. The benefits of this construction more than warrants the cost.

A force-feed cup grease oiler is part of the pitman box. The screw cap is held in place by a spring and cannot work loose. One turn of the cap supplies ample lubricant and overcomes hot boxes and delays incident to the use of fluid oil. Hours are saved during harvest (when hours mean money) by this device, found only on the NEW STANDARD.

These are only a few of the prominent labor and time-saving devices which decrease the operating cost and add to the life of the NEW STANDARD MOWER.

Our illustrated Hay Tool Folder describes these features in detail and also tells why the New Standard Mower is the Easiest Running, Most Powerful Cutting and Longest-lived Mower made. Write for the folder today.

Newell Mathews Co.
200 North Los Angeles Street
Los Angeles, California

struction of the animals, the cleared area will be sooner or later invaded from neighboring premises, and the work of destruction must be repeated. Co-operation only will effect a radical cure. When co-operative efforts for the extermination of gophers over a considerable area are attempted, careful attention must be given to waste lands along fences, streams, public highways, and railroads.

THE FARMER A FACTOR.

As to the farmer's own estimate of his position in commercial life the Bakersfield Echo remarks:

"As a matter of fact it takes the smartest of men to make thoroughly good farmers. Any man with strong legs can follow a harrow, but that is not the whole of farming. To be a complete success on a farm a man must know a lot about most of the trades and nearly all the professions and in addition to that he must have as much business ability and good judgment as suffices the average business man. Added to his mental equipment he must have a sound body, and finally he must have as much capital as would start him comfortably in any of a dozen lines of business, or he must have the grit, courage, daring, resource and self-sacrifice to get along without money when by all self-evident rules money is absolutely necessary.

Figure 80 acres of good land in alfalfa at $100 per acre; add $1500 for a modest house; $500 for a barn, cow sheds, separator house, chicken houses, etc.; $300 for corrals and yards; $150 for other small buildings and improvements around the house, four horses at $125; two wagons for $250; mowing machines, rake, scraper, plows, cultivator and other implements at $250; small tools at $50; twenty cows at $50; separator, cans, etc., $100; and you have over $12,500 invested in what would be by no means a pretentious or extravagantly equipped farm.

Twelve thousand dollars will finance any one of several highly respected commercial enterprises and entitle the proprietor to rank among the business men in the community. Three or four men with $12,500 each can start a bank and pose as financiers, and sometimes a man with $12,500 can loan it out at 12 per cent and make his neighbors think he is an eccentric capitalist.

But when the farmer who has an 80-acre ranch of this sort, who has bought it and paid for it and built it up by economy, good management and hard work he is quite as likely as not to rank himself commercially with the proprietor of the peanut stand on the corner and if he happens to meet a drygoods clerk in the door of the post office he instinctively stands back and lets the clerk pass first.

A lot of people talk about the great need of intelligent farmers, and there is no question that no degree of intelligence is likely to be wasted on a farm, but as a matter of fact, the farmer who makes any success in his business is generally quite the equal intellectually of the successful merchant or professional man. The farmer spreads his knowledge and study over more subjects than most men, that is all.

The farmer is entitled to magnify his calling, to consider himself the salt of the earth, the backbone of the republic, the substantial, important element of the community. He is entitled to buy himself a green hat and stick out his elbows when he walks down the sidewalk, and if he does not do so it is merely an indication of his modesty and consideration and should win him increased honor and respect.

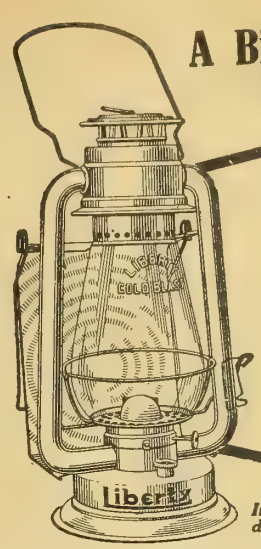
MANY NATIONS TO EXHIBIT DRY FARM CROPS.

The next sessions of the Dry Farming Congress will be held at Billings, Montana, some time during the fall of this year. The date was not determined at the recent convention at Cheyenne, but will be selected during the autumn months in order to enable the farmers to take to the Congress exhibits of their crops that will show to better advantage what has been done by dry farmers than is possible when the Congress meets many months after the harvest. Secretary-Treasurer John T. Burns has taken up the matter of an international exposition of dry farm products with the governments of a number of foreign countries and has received assurances from Brazil, Mexico, Australia and other lands that they will send exhibits to Billings. The people of Billings are taking an active interest in the movement and promise that the coming Congress and its exposition shall be one of the greatest in the history of dry farming.

TEN COMMANDMENTS.

1. Don't think about buying a farm if your wife won't live in the country.
2. Don't believe agents when they tell you gold-brick stories.
3. Don't chase after big farms.
4. Don't buy a farm unless you have money enough left to buy a cow.
5. Don't settle far away from the markets.
6. Don't run too much in debt when you buy your farm.
7. Don't pay a deposit on your farm until you have consulted a lawyer.
8. Don't forget to insure your farm buildings in a reliable company.
9. Don't buy a farm unless you are able to meet the mortgages.
10. Don't buy a farm unless you have consulted those who know.—Ex.

Fruit growers of Eagle Valley, near Richland, Oregon, are making a concerted fight on San Jose scale which is becoming a serious pest.



A Big, White Light

Every detail of every Liberty Lantern is the best. Best material. Best workmanship. Best design.

Liberty Lanterns

give the biggest, clearest light. The burners are supplied with just the right amount of air. The globes are of the finest lead flint glass. They are tight and compact. Never rattle. Never blow out or jar out. Bail stays where you put it. The simple globe lifting device makes lighting easy.

If not at your dealer's write us.

60 cents to $3.50

SIMMONS HARDWARE COMPANY (Inc.)
St. Louis and New York, U. S. A.

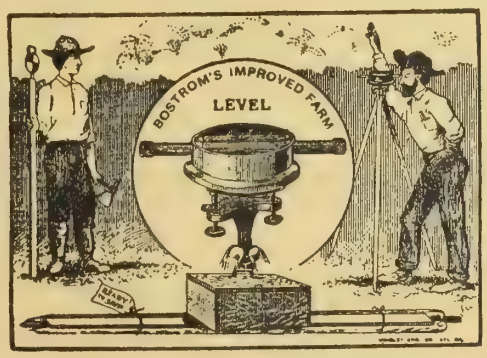
Malthoid Roofing

L. B. Valk, a leading architect of Los Angeles, Cal., U. S. A., writes:

"Many of the finest churches designed by me are covered, and satisfactorily, with Malthoid Roofing. I shall continue its use."

The Paraffine Paint Co. San Francisco California

E. G. Judah, General Representative, Security Bldg, Los Angeles

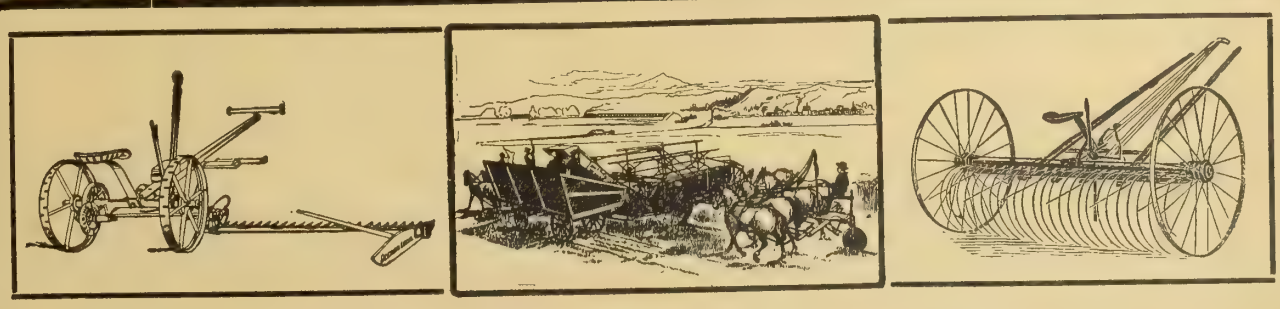


BOSTROM'S IMPROVED FARM LEVEL

Used for irrigation and drainage work. Cheapest and best level yet invented for farm use. Has the latest patented improvements in simplicity and usefulness. Can be operated by any one. Price including telescope tripod and target rod $15.00.

PALACE HARDWARE COMPANY
581 Market Street, San Francisco

Coast Agents. Send for Circular



Implements for the Ranch

We can supply **everything** that is needed in ranch implements. You can't afford to buy without first getting our prices and inspecting our goods. Note the following—a few of the excellent lines we carry. Is there not something in the list you need? If you can't call, write us. **Do it today.**

Deering Mowers
Deering Rakes
Deering Binders
Deering Reapers
Deering Headers
Deere Plows
Deere Harrows
Deere Cultivators

Dain Buck Rakes
Dain Stackers
Dain Hay-loaders
Southwick Hay-presses
Western Steel Hay presses
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Buckeye Fertilizer Drills
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AMERICAN FENCE

To get the most out of a farm, every square foot must be either tilled or else made to produce feed for live stock. A fence all around the farm, then cross fences, making more and smaller fields—permitting rotation of crops and change of pasture—are first essentialsin making possible maximum earnings.

Here are two great fences—the best square mesh and the best diamond mesh. We selected these two styles years ago, after careful study and advice from many of the most experienced and successful farmers, the correctness of which has been verified by actual results in the field. These fences are the simplest in construction; are made of any size or weight of wire desired and perfectly adapted to all uses and conditions.

If you want square mesh, buy American; if you like diamond, buy Ellwood. You can safely take the verdict of the millions of farmers who have tested and tried out these two great fences. Dealers everywhere, carrying styles adapted to every purpose. See them. Catalogue for the asking.

AMERICAN STEEL & WIRE CO.
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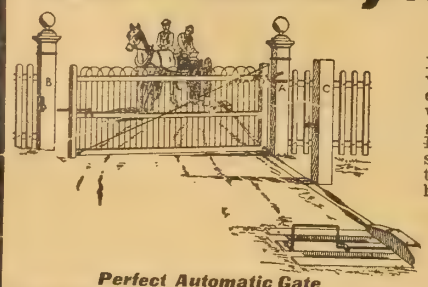
ELLWOOD FENCE

20th Century Automatic Gate

Always in Order



Perfect Automatic Gate

In general use for motor as well as horse drawn vehicles. Opened or closed without assistance or stopping. The gate can be placed at any driveway entrance. The machinery is all above ground, and so simple it never gets out of order. It will last a lifetime, and usually pays for itself, in time saved, within a year. It adds to the beauty, value, convenience and safety of any home. Address

A. J. Bloom
Petaluma, California

Bee Supplies

For the Pacific Coast

We are the exclusive agents for the **A. I. Root Co., Medina, Ohio.** Our hives are manufactured from selected California Sugar Pine. Branch houses at Los Angeles and Elk Grove, Cal. Write for Catalog. We also manufacture orange, fruit and packing shook, drying trays, etc. Beeswax wanted.

Madary's Planing Mill,
Fresno, California

Mercer's Weed Process Foundation

If you would be successful with your bees use Mercer's Weed Process Foundation. Absolutely the best on the market. Send me your beeswax to make up.

H. J. Mercer, 948 East Second St., Los Angeles, Cal.
Dealer in All Kinds of Beekeepers' Supplies

WOOD PIPE

Made from California Redwood or Selected Washington Douglas Yellow Fir

National Wood Pipe Co.

Machine Banded Stave Pipe **Continuous Stave Pipe**

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NORTHERN OFFICE—Olympia, Wash.
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SALT LAKE CITY OFFICE—Dooly Block.
Prices, specifications, hydraulic data and general information furnished upon request.

California Farm Names

FARM NAMES.

NOW and then the Cultivator has given some space to farm names but owing to being crowded recently has allowed them to accumulate without their appearing in the paper. We give, however, this week, another installment and think that the law recently enacted which grants copyright privileges will stimulate this move until we will be compelled to give space to it each week. Within the next week or two we hope to give the necessary steps to take in order to secure under this new law these privileges. Papers generally over the state have commented favorably upon it and we have seen no adverse criticism. In fact there can be none for benefit can only come from this move besides the copyright or trade mark privilege will give the incentive to build up a brand for fruits or products of the ranch which will mean a greater pride in the place and it is encouraging a custom which is bound to increase as its merits are more fully understood.

In our list of names this week we note the following:

"Woodside Ranch" owner, H. D. Williamson, Santee, San Diego, Co., California. Mr. Williamson has a well printed letterhead on bond paper with the ranch name. Underneath is "Alfalfa, Live Stock and Dairy." In the upper right hand corner "Over 250 miner's inches of water developed and used in irrigation." In the left hand corner of the letterhead is "San Diego County. Climate most perfect in the world, either in the mountains or by the sea. All grains, fruits and vegetables of the United States raised successfully." "The 'only' place to live. A Paradise for the saints, an Eden for the others."

"Soy-Wild"—owners Mr. and Mrs. N. B. Olds and Miss Ella Dillon, Ceres, Stanlisaus County, California. Mr. Olds writes: "I will be pleased to have the name of our little farm appear amongst the other farm names. We have lately purchased this farm of twenty acres. It is located three miles east of Ceres, Stanlisaus County and one and a half miles south of Hughson. It is under the Turlock irrigation district. I have twelve acres of alfalfa, Grenach grapes, four years old; 250 fig trees four years old, together with family orchard of all kinds of fruit. Grounds about house supplied with shade and ornamental trees together with a comfortable six-room house, with large barn and other buildings, and windmill tank, so that we think very much of our new home.

"Alpha-Dune Ranch"—owner, J. J. Smith, Brooks, Yolo County. Mr. Smith writes us on a neatly printed letterhead. In the corners are small panels with "A specialty of horses and cattle" and "Hay, unirrigated alfalfa seed and cream." Mr. Smith says "I am sending you the name of our farm home which is situated about midway in the Capay Valley in Western Yolo County. This valley is by nature one of the prettiest and best in the nation. The name is suggested first, by the broad unirrigated fields of alfalfa. Second, by the dwelling house and one of the barns being situated on a gentle hillock overlooking the valley. The name "Alfa-Dune" is inlaid in a concrete arch which forms the front walk 'gate' by the roadside. Also the front drive gate posts are made of concrete, the whole arch and posts being built in place and reinforced by two inch gas-pipe. The walks are of cement, the borders and main posts being made of colored cement in imitation of brown sandstone. The dwelling is frame, finished by a blending of old colonial and modern bungalow types, with cement steps and cobblestone front and basework. A large oak like those of "Bashon" shades the backyard. Also one shades the barnyard. The barns are of the old New England type, the other buildings embracing the far Eastern and Southern California styles. Three spring brooks cross the ranch, as does also the Vacaville, Capay and Clear Lake railroad."

"Belle View Ranch"—owner, M. C. Kelley, San Dimas, Los Angeles County, California. Mr. Kelley says: "I note in the last issue of the Cultivator in which you have farm names that another subscriber has taken the same name which I had selected for my ranch, namely, 'Mountain View' ranch. Hence I have changed and have selected the name given above. Has any other chosen this name? Is there any law against using the same name or is there likely to be? I do not wish to change after once using this name. I like this idea of naming the ranch or farm very much."

There has been enacted a law which grants copyright privileges to farm names. The fact that one has chosen a certain name does not however give its exclusive use. The first to apply to the proper authorities will secure this copyright privilege for the particular name in question. As noted above, we will give the steps necessary as soon as it is possible to secure them from Sacramento.

"Forest Oaks Ranch"—owner, A. E. Bennett, Tustin, Orange County; manager, J. V. Clifford on the ranch at Tulare, Tulare county. The manager, Mr. Clifford, writes on beautiful, specially designed letter-head, showing "Forest Oaks" in rustic letters while underneath on a background of oak leaves and acorns appears "Alfalfa and Stock Ranch."

Other names already in hand will be given in an early issue.

A large committee of bean growers at Oxnard is working persistently for a co-operative bean marketing organization.

HOW TO BUILD RURAL TELEPHONE LINES.

A booklet has just been received from the Western Electric Company and its subject is "How to Build Telephone Lines." Every farmer knows the value of a telephone, but most of them think it requires an expert to put up a system; and only a few know how easy it is to organize a company and build a line which will give good service at a moderate cost.

This booklet tells you how to construct a telephone line, how to install the instruments and connect them to the line, the material needed and the cost. This book is handsomely illustrated and the Western Electric Company, who are the largest manufacturers of telephones and telephone apparatus in the world, furnishing all the equipment used in the entire "Bell" system, advise us that they will mail the book free to any readers of this paper who care to write for it. The address of the Western Electric Company can be found from their advertisement, which appears in this issue.

Profit in the Poultry Yard

By Mrs. Frank Metcalf

We solicit short articles of a practical nature from the fancier and utility breeder, giving their experience with poultry. All inquiries pertaining to feed, management, disease and its prevention will be answered through these columns.

CALIFORNIA CARDINALS.

IT HAS been said, "Of making breeds there is no end" and it will be true to the end of time, that new combinations of blood will produce new types some improvements upon established breeds, and some not.

While living back East, I became interested in producing a combless fowl, so bred one family of Buckeyes without combs for an experiment, by selecting the smallest combed birds from year to year until feathers actually grew in place of combs in a few rare specimens.

These fowls I called National Reds, after breeding them smaller in size and with more dark undercolor than the Buckeyes, and in shape I selected birds as nearly like the photo as possible. This photo was taken from a rose comb R. I. Red I once raised, and Franklane Sewall acknowledged the foremost poultry artist and "chalk-talk" lecturer in the country, pronounced it the most ideal shaped R. I. Red he had seen to date. "Just what I have illustrated in my chalk-talks as the laying type," to quote from his letter.

A R. I. Red.

Now, combless fowls appeal to very few people, I find, and since coming to California, I have been looking about me for what this country needs in a chicken and believe by using these pretty, dark red National Reds of mine for a foundation, I can produce a breed exactly suited to conditions here.

Not but Buckeyes are all right here, but they are larger than many people care for, besides being very scarce and high-priced. Leghorns are too small and nervous, and right between these two there is room for a medium sized breed, and this want I aim to fill and clothe it in the richest of dark red plumage. Combs there shall be, too, all kinds of combs, Rose single and Pea-combs, so all may be pleased, and the American Poultry Association need not worry a mite about these birds, for this State is big enough to have a breed all its own and own its own Standard, too, so I shall not ask admission to the Standard of Perfection for this breed, but keep the Standard for the use of those who buy eggs and breed them.

Weights for this breed shall run from five pounds for hen, to seven pounds for cock, making a nice sized fowl for the table, and not too large for sitters and mothers. Eggs are the main dependence of most chicken raisers, so the egg type will be carefully selected, and if California Cardinals do not succeed, it will not be my fault.

The making of this breed and the naming of them for the state of my adoption is a labor of love for the benefits derived from this glorious climate. It has restored to me and mine the health we thought forever lost, and given a zest and enjoyment to life we never expected to find again.

Back there in the cold and snow, I had even begun to lose interest in my Buckeyes, here, I feel not only renewed interest in them, but able to tackle this new combination, and work out a new breed; the Leghorns of the Reds.—Mrs. Frank Metcalf.

POULTRY QUERIES.

Liver Enlarged.

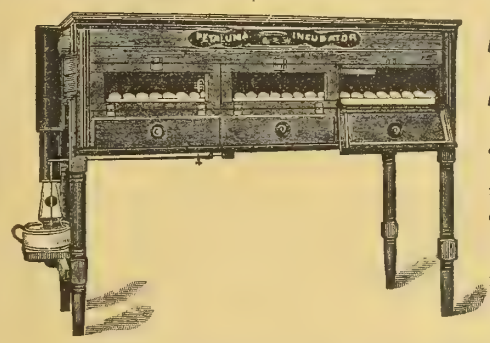
We killed a hen; her comb was bright red, appeared healthy, was laying and as fat as she could be. When her legs were cut off we discovered the connective tissue to be completely covered with little white lumps about the size of a pinhead. When these were broken, they were found to be full of brown pus. The oil sack was very much enlarged and filled with brownish pus. Her liver was very soft and seemed to drop to pieces when touched; very light yellow—A. L. C.,Kingsburg.

The hen had become too fat from too much fat-producing food, probably not enough exercise, and had liver enlargement. Was on the way to apoplexy, or some other fatal sickness arising from liver trouble. A change of food, and more exercise, with a dose of castor oil or some Epsom salts in the drinking water might

Don't Forget Quality

MIDLAND Poultry Food

Is based on ***quality*** and it is quality in Poultry Food that produces eggs. ***Cheap filler*** and ***cheap grain*** will ***not*** make eggs. ***Midland Poultry Food*** contains only the ***choicest*** cereals and animal food the market affords. You ***can't*** afford to try and be successful and not get results. ***Midland Poultry Food*** will produce results. Try it and see. $1.95 per sack



Petaluma Incubators and Brooders

Are still here, after others are gone. ***The Standard of the World Machine.*** Winners of ***more prizes*** awarded by ***World's Fair Judges*** than any other make.

Remember, we make a hot water machine. One of the ***best hot water machines*** on the market.

Send for our Illustrated Catalogue.

Petaluma Incubator Company

Petaluma, California

Our General Agents for Incubators and Brooders and Midland Poultry Food:
Petaluma Incubator Co., Petaluma, Cal.
Aggeler & Musser Seed Co., 113-115 N. Main St., Los Angeles
Berrar & Robertson, San Jose, Cal.

B. & R.

Poultry and Live Stock Supplies

We have the MOST COMPLETE and up-to-date supply house on the Pacific Coast. We are agents for the Petaluma Incubators and Brooders, Midland Poultry Foods, etc. We have everything required for Poultry, Stock, Dogs and Birds. Send for our catalogue; it is free.

Berrar & Robertson, 103 East Santa Clara St., San Jose, Cal.

When the chicks are hatched don't feed them anything for 24 hours, then feed them the best dry Chick Feed you can get. We say that is

West Coast Chick Feed

SAMUEL R. KELLAM, former president of the L. A. Co. Poultry Association, says: "West Coast Chick Feed is the best feed for young chicks I have ever used. I have given this feed a thorough test, and have always found that it produced fine, large, healthy chicks."

MRS. A. BASLEY, the celebrated poultry authority, says. "I want some more of your West Coast Chick Feed, for it is excellent. It is purer, cleaner and appears better balanced than other feed I had been using, and to tell the truth, I have been experimenting, feeding both together, and they always eat yours in preference."

Ask your neighbors, for there is more of "West Coast" sold in Southern California than all other kinds put together. If not sold by your dealer send us $3.50 and we will send a 100 lb. sack, freight prepaid within 300 miles.

West Coast Mill

705-709 So. Griffin Avenue, Los Angeles, Cal.

WARD'S ORIGINAL FIRELESS BROODERS
PRODUCES STRONGER HEALTHIER CHICKS THAN ANY HEATED BROODER
FULLY GUARANTEED
NO LAMPS. NO OIL BILL. NO DANGER OF FIRE
WRITE FOR ILLUSTRATED BOOKLET AND DELIVERED PRICES
Coulson Co. GEN. SALES AGTS BOX C. PETALUMA CAL.

Ranch Mirasol

EGGS FOR HATCHING—WHITE LEGHORNS—MITCHELL STRAIN

Large birds, heavy layers; bred for highest utility only. Order book now open for season 1909

Carl C. Curtis, Owner Cor. Lincoln Ave. and Ventura St., Pasadena, Cal. North Fair Oaks Altadena Cars

The Only Original Dry Chick Feed for Baby Chicks

Mamma And The Babies
All Raised on
CHAMBERLAIN'S PERFECT CHICK FEED

Write for Prices, Booklet, or name of nearest Agent.
W. F. CHAMBERLAIN FEED CO.
(*The Perfect Chick Feed Man.*) ST. LOUIS, MO.

Germain Seed Co., Los Angeles, Cal., Pacific Coast Agents

Excelsior Dry Chick Food

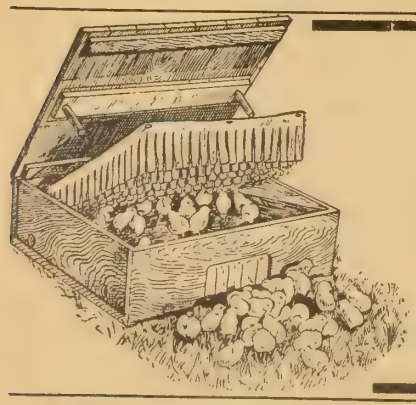
If You Are Not Satisfied Try Excelsior

If Your Dealer Don't Keep It Write Us

A balanced ration for the baby chicks. We have been manufacturing Excelsior Chick Food for years, and it is made to meet the conditions of California. Those who feed Excelsior have no trouble raising strong, healthy chicks.

We also make ***Excelsior Egg Food*** and Excelsior Scratch Food; nothing better. For particulars write

Excelsior Cereal Milling Co.
242 Central Ave., Los Angeles, Cal.



Poultry Supplies and Seeds

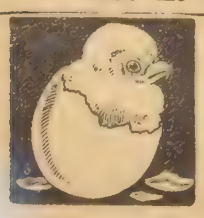
Petaluma Incubator and Brooders, fireless brooders, Midland poultry food, Steinmesch chick feed, Swift's beef scraps. Send for our large illustrated catalogue of poultry supplies and seeds, it is free.

Aggeler & Musser Seed Co.
113-115 N. Main St., Los Angeles, Cal.
So. Cal. Agents for Petaluma Incubators and Brooders and Midland Poultry Food.

Famous Rhode Island Reds

From Winners at Madison Square Gardens. The Greatest Utility Fowl in the world. These birds won 1st prize at Oakland's Great Show and are unquestionably the finest blooded stock in Cal. Eggs—1st pen $5.00 per 15—2nd pen $3 per 15. Day old chicks 10c each. A few hens and cockerels for sale. Address

W. E. GIBSON, R. D. 13, Niles, Cal.



WHITE LEGHORNS OF QUALITY

Bred from best American and Imported stock—for beauty and great egg production. Won more ribbons at Oakland's great show than any four competitors. ***Stock, Eggs*** and ***Baby Chicks*** for sale. Also eggs and chicks from ***High Class Buff Orpingtons***. (Cook strain.) Write for descriptive circular.

The Model Poultry Farm
Box H, Irvington, Cal.

have helped her. This is usually called fatty degeneration of the liver, and this sort of liver is the foundation for the "pate de foi gras," so much liked by the French.—Mrs. F. M.

Make 'Em Lay.

My Minorca hens do not lay. They are in fine condition and have good care. Have plenty of range on loamy, gravelly soil, and a variety of food. Will Mrs. Metcalf suggest something that I may get some eggs? —Mrs. L. S., Pomona.

Mrs. Metcalf might suggest a change of breed, but as the Minorcas will lay finely when the spirit moves them to do so, and such beautiful big white eggs when they do lay, Mrs. Metcalf will do no such thing. Feed them a mash well seasoned with black pepper once a day until they begin, and give them corn for supper three times a week. Whole corn or cracked, a handful to each crop. People say corn is not good for hens here in California, but my own and others' experience declare in favor of this old standby, and some even go so far as to say, "No corn, no eggs." —Mrs. M.

Pendulous Crop.

I have a hen which I thought was crop-bound and after cutting the craw open, found nothing in it. The swelling is so bad at times that the breast drags the ground. I feed wheat twice a day, they have plenty of green grass and exercise on adobe soil. No other fowl is troubled in that manner.—W. F. G.

Your hen has a pendulous crop, caused by over-feeding at some time. It is more unsightly than dangerous, although if it drags on the ground, it may become sore and inflamed. In Reliable Poultry remedies, it is advised to make an incision as for impacted crop, only longer. Cut out, with a pair of blunt-pointed scissors, both skin and crop, so the opening will look like a pair of brackets, removing quite a little membrane. Sew as described for impacted crop, being sure to sew the skin and crop separately. Feed lightly for a week, removing threads in sight at the end of four days.—Mrs. M.

Can any one tell me how to hatch turkey eggs in an incubator? If a person has good luck, is it tedious work? I have three gray geese. Can anyone tell me how to tell the goose from the gander?—S.

Personally, I never should attempt to hatch turkeys with an incubator. If you do make the attempt, be sure to keep the temperature as near 102 all through the hatch, as possible, as a variation which would not affect hen eggs will be fatal to the larger turkey eggs. It is difficult for an amateur to distinguish the sex of geese, but the gander is usually the smallest and most pugnaceous.—Mrs. M.

Practical Information.

Will you kindly tell me in the columns of our journal, as to what are the best books on poultry raising for one who has some knowledge of poultry keeping on a small scale, and who wishes to become more expert with a view of engaging in that business more extensively. Also please give practical method of detecting bad eggs in incubator or under sitting hens.—E. Y., La Mesa.

There are many excellent works on poultry raising on the markets, and a glance at the advertisements in our journal from time to time will inform you much about them. Locally, Mrs. A. Basley's Poultry Book gives much practical advice about the man-

Croley's

High protein MEAT SCRAP.
Just what the name implies.
A Meat Scrap High in Protein
Why Not Use the Best
Manufactured by
Geo. H. Croley
Poultry Supplies
631-637 Brannan St. San Francisco. Cal.
Los Angeles Agents. Globe Mills, 925 East Third Street.

"Chicks well hatched are half raised"

CHICKS

We can furnish you strong, healthy day-old chicks from selected utility stock. No. 1 White Leghorns, $9.00 per 100; $25.00 for 300; $40.00 for 500. Special White Leghorns, $12.00 per 100; $34.00 per 300; $55.00 for 500. Brown Leghorns, $10.00 per 100. Black Minorcas, $10.00 and $12.50 per 100. R. I. Reds, $12.50 and $15.00 per 100. Barred Plymouth Rocks, $12.50 and $15.00 per 100. In lots of 50 add one cent each.

San Jose Hatchery
395 E. St. James Street., San Jose, Cal.
Henry Langenschwadt, Mgr.

GEESE

Toulouse ***Embden***

Prize winning stock never beaten at any poultry show.

$1.50 Per Setting

Send your order at once for the best stock in the west.

T. B. C. Sielcken
Calistoga, Cal.

2000 LAYING HENS
East San Gabriel Egg Ranch
S. C. White Leghorns and Barred Plymouth Rocks

Eggs for hatching. We fill orders promptly from our selected matings of great egg-producing birds, at $5 per 100, $45 per 1000. At both Los Angeles Shows, 1909, our Leghorns won all firsts, silver cup and special prizes, and more ribbons than all competitors combined Eggs from prize winning pens $2 per 13.

San Gabriel car to Masonic Home; two blocks south to ranch.

Swanson & Johnson ***San Gabriel, Cal.***

$50 TO $300 SAVED

We are manufacturers, not merchants. Save dealers, jobbers and catalog house profit. I'll save you from $50 to $300 on my High Grade Standard Gasoline Engines from 2 to 22-H.-P.—Price direct to you lower than dealers or jobbers have to pay for similar engines in carload lots for spot cash.

GALLOWAY

Price and quality speak for themselves and you are to be the sole judge. Sell your poorest horse and buy a ***5-H.-P. only $119.50***

Direct From My Factory on 30 Days' Free Trial. Satisfaction or money back. Write for special proposition. All you pay me is for raw material, labor and one small profit. Send for my big **BOOK FREE.**

Wm. Galloway, Pres.
Wm. Galloway Co.
1455 Galloway Station
Waterloo, Iowa

East Side Poultry Yards

Have pure bloods. Eggs for hatching. Hatching chicks a specialty.

S. C. White Leghorns Chicks 10c. **Barred Rocks** Chicks 12c.

E. J. Look
16 Hancock St. E. San Jose, Cal.
Phone, Black 2651

COULSON'S POULTRY FOODS
MADE IN PETALUMA
GUARANTEED
SOLD EVERYWHERE

Redwood Tanks
Fruit Boxes, Egg Crates

Write NOW for prices.

R. F. WILSON
Stockton, Cal.

White Wyandottes

The 200 egg kind—the all white variety—the best all around fowl for farm or town purpose. Eggs from the best strains reasonable.
Wm. C. Parker, 111 Pacific Avenue, Santa Cruz, Cal.

Pasco, Wash., has new irrigation projects under way.

Something to Crow About

"Success" Fireless Brooders

150 Chick Size $5

50 Chick Size $3

We Pay Freight Anywhere

Send today for circulars and descriptions. We are selling hundreds of these brooders everywhere; buy one and you will use no other. Will raise better and stronger chicks and make them feather out faster than any other brooder. No oil, no smoke and no fire. Write today, free 32 page book.

McCLANAHAN CO.

112 E. 8th, Los Angeles

A Few Fine, Pure White Wyandotte Cockerels

for sale cheap, from great laying strain Eggs $1.50 per 14.

Buff Cochins

Eggs $2.00 and $5.00 per setting.

Cuckoo Cochin Bantams

Great layers of large eggs. Settings and trios for sale.

Hen Pigeons

$3.00 per pair. Runt-Homer Crosses, the big fast Squab breeders. My Show Record for 5 years, secured me 1st premiums at all Coast Shows. This proves that I have quality unsurpassed.

Harry McIntire

Box 1454 San Diego, Cal.

Poultry Supplies

Write for free Catalogue.

Germain Seed & Plant Co.

326 So. Main Street, Los Angeles

The Latest—Just Out

Perfection and Simplicity Combined

A perfect sewing device to mend harness, shoes, tents, awnings, saddles, suit cases, buggy tops, dash boards or any heavy material. Send $1.25 for sample. Free catalog. Agents wanted.

Stewart & Skinner Co. P.O. Box No. 968 Worcester, Mass. 117 Fresno Street, Los Angeles, Calif.

agement of chickens, feed and care, as does Mrs. Burbridge's book and many others. Probably Wright's Poultry Book is the most complete yet published, but like all other books, the best one has never been written.

The dealers in poultry supplies who advertise in our columns carry a complete line of excellent poultry books, and can advise you which are best suited to the line of poultry keeping you propose to take up. There are so many excellent works on poultry raising that you will have no trouble in finding what you need, but it is well to subscribe to several good poultry papers, to keep in touch with all the new things which are continually coming up, and watch our columns in the Cultivator.

Subscribe for a dozen of the best journals, and keep posted on what is doing in the poultry world, thus keeping up with the times, for something new is always coming up and being threshed out in the pages of our journals. The bad eggs under hens and in incubators are those which contain dead germs, or I presume you mean those, for it is comparatively easy to distinguish the infertile eggs, by the way the light shines through them.

Dead germs are a little difficult to distinguish until about the 12th day, when the live chicks will about have filled the egg, and it shows dark almost all over, while the dead germ floats as the egg is turned, and light shines through in portions of the egg. Experts claim to be able to tell the dead eggs by contact, as the live egg is several degrees warmer.

In testing eggs, it is said to be wise to hold them sideways instead of vertically, as holding the egg vertically is said to disturb the equilbrium of the germ, and perhaps if held in that position too long to a bright light, might kill it.—Mrs. F. M.

RAISING GUINEAS.

There are two varieties of this fowl: The pearl and the white. The pearl or speckled guinea is wild and shy and the flesh when fully matured, is dark and gamey in flavor. The young guineas are of a delicate flavor and should be marketed when six months old; the flavor then resembles partridge or quail and is much esteemed.

The white guinea is handsome in appearance, and is a good table fowl, delicate in flavor, yellow skin, etc. They are more domestic in their nature and when hatched by chicken hens will readily mingle with other poultry, not being of a quarrelsome disposition as the pearl variety is—which fault has kept this breed in the background.

As foragers the guinea rivals the turkey, and it is usual with owners to let them "paddle their own canoe" after being fledged. They begin laying as soon as warm weather comes and lay almost uninterruptedly until cold weather. The white guinea will lay in the nest of the common hen, while the pearl colored will deposit her eggs in the most out-of-the-way and inaccessible places.

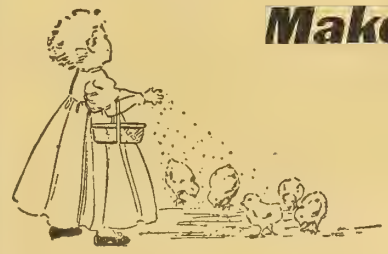
Guineas are quick to detect the presence of an enemy, whether hawk or weasel. They are first class detectives and should be kept on the farm for this purpose. Their shrill and discordant cry puts the enemy to flight before the owner can appear on the scene.—Farmers' Guide.

Spokane, Wash., is making great preparations for the coming National Irrigation Congress.

Coulson's POULTRY FOODS

Special Dry Chick Food

Makes Them Grow



COULSON'S SPECIAL DRY CHICK FOOD, during the five years it has been on the market has justly earned for itself its great reputation as a life-saver for little chicks by its special adaptation to their needs.

THE UTMOST CARE is observed in the selection of each of the dozen or more articles composing this unequalled feed; tender seeds, cracked grains blown free from dust, steel-cut oats, tiny pieces of dried meat and bone, willow and pure bone charcoal, are combined with other very necessary ingredients; every article being selected with special reference to its quality, strength, and desirability for the needs of the young chick.

FOR YOU TO BUY the many different articles composing Coulson's Special Dry Chick Food is quite impracticable; you could not be certain as to their quality for one thing, and the high cost of certain of them when purchased in small lots might lead to their being left out to the detriment of the chick.

TO MAINTAIN the high reputation of COULSON'S SPECIAL DRY CHICK FOOD, nothing is left undone to make it absolutely the best feed that can be made for the little chicks.

COULSON'S SPECIAL DRY CHICK FOOD can be fed exclusively to your little chicks for the first six weeks, at a cost of about four cents (4c) each; and what is of still greater importance, it will do all that can be done in the way of feed to bring them through that critical period of their lives in full health and vigor.

TO RAISE EVERY CHICK you hatch; to have fine, large, healthy chicks; to have chicks that will stand up and crow when eight weeks old; to raise chicks that you will be proud of, FEED COULSON'S SPECIAL DRY CHICK FOOD, THE LIFE SAVER.

Write Us for Free Samples and Prices

Manufactured Only By

Coulson Poultry and Stock Food Company *Petaluma, California*

GERMAIN SEED CO., Distributing Agents, Los Angeles, Cal.

"Old Trusty" Incubators

120 Egg Size $10.90
165 Egg Size $12.75
240 Egg Size $15.90

WE PAY FREIGHT

Now is the time to get a bargain. Send for 180 page book. Only a few machines left.

E. E. McClanahan
108-112 East 8th Los Angeles

Mandy Lee Incubators

Make money for poultrymen no matter what the results have been with other machines, every Mandy Lee Incubator is furnished with a

New Idea Moisture Gauge

ASK FOR FREE CATALOG

Which registers the amount of moisture during the entire hatch and enables the operator to have the correct amount. Moisture accurately handled in an incubator is a successful hatch insurance.

We are so well pleased with the Hygrometer purchased from you some time ago that we want eight more—one for each of our machines.

D. B. MENTZER, Propr. Mentzer Dutch Farm, Waynesboro, Penn.

Actual test made by the I. X. L. Poultry Farm, Schenectady, N. Y., with the Mandy Lee Incubator:

No. of Eggs Started.	No. of Eggs Tested Out.	No. of Chicks Hatched
May, 1908.....140	10	126
June, 1908..... 93	9	82
Jan. 1909..... 40	8	30

HENRY ALBERS CO., 534 So. Main St., Los Angeles

Thousands of Chicks

Hatching every week, send today for new 1909 Baby Chick Catalog, tells all about our 19 kinds of chicks, ducks, turkeys, etc. Also about our low prices on all kinds of hatching eggs. We ship chicks and eggs everywhere safely. Now is the time to order. We supply 50-chick "SUCCESS" Fireless brooder at $2 and 150-chick brooder at $4, if you order it filled with chicks. Ask about this today.

Pioneer Hatchery
112 East 8th Street
Los Angeles, California

Mrs. C. D. Hubbard's
White Wyandottes
Black Orpingtons and White Rocks
Write for Circular
San Fernando, California

LIGHT BRAHMAS

The best table fowl. Good layers. Gentle and profitable. Get the best, I have them. Eggs $2 and $2.50 per 13. Cockerels $3, $4 and $5.

The Show Poultry Farm
Route 1 Santa Barbara, Cal.

Kills Prairie Dogs and Gophers of all kinds. Endorsed by State Experimental Stations. 1,400 tablets prepaid for $1.25. Warranted. Raticide Tablets 25 cents. Ask druggist or send direct. Booklet free.

F. D. Chemical Co., Fort Dodge, Ia
Brunswig Drug Co., Los Angeles, Agents.

NOTICE OF STOCKHOLDERS' MEETING.

Notice is hereby given that the annual meeting of the stockholders of the Cultivator Publishing Company will be held at the Los Angeles offices of the Company, 115½ North Broadway, Los Angeles, California, at nine o'clock a.m., Saturday, May 1, 1909, for the purpose of electing the Board of Directors for the ensuing year and for the transaction of such other business as may properly come before the meeting.

E. PERKINS, Secretary.
Los Angeles, Cal., April 3, 1909.

Three Stroke Self Feed Hay Press

Two men can run it. All steel and iron. Smooth bales. Easy draft. Satisfaction guaranteed. Free trial. Ask for Catalogue 28.

The Auto-Fedan Hay Press Co.
1521 West 12th St., Kansas City, Mo.
Agents—John Schilling, Jr., Los Angeles, Cal. J. C. Gordon, Box 167, Sacramento, Cal.

Colfax, Wash., has broken all previous records in wheat prices and in quantity of exports this year.

SOME CAUSES OF INFERTILITY.

There is always a cause, sometimes more than one. Any cause that may promote health or vigor will have a decided effect on fertility. Good housing, sanitary conditions, good food, exercise and vigor all are essentials to fertility. Proper mating is also essential to fertility. An old, worn-out cockbird mated to old hens would be an undesirable mating where great fertility is desired. A young, undeveloped cockerel mated to immature pullets would also be undesirable.

Where one is breeding exhibition stock only, great fertility is not of so great moment as where one is catering to the market with broilers and roasters. In the latter case, every infertile egg means a direct loss. How to get the highest percentage of fertility thus becomes a problem of the greatest importance. Long experience has shown the best results attained by fall matings.

Before cool weather sets in the birds are mated, yarded and housed in quarters where they are expected to remain until after the following breeding season. We prefer a wind-tight house with an open south front, adjoining a scratching shed. A quart of whole wheat to each 12 birds in the morning, scattered in litter in the scratching pen. A warm mash of cracked oats and bran—about equal parts—with green stuff—scalded alfalfa leaves or meal added, or occasionally boiled potatoes chopped fine, or anything green attainable, for the noon feed. A quart of cracked corn in the litter at about 4 p. m. completes the daily menu, varied from day to day as much as possible. Sometimes a morning feed in the trough, or cracked oats only. Again a morning feed of whole barley.

Occasionally a morning feed of bran only—dry, of course—which is greatly relished. Sometimes a noon feed of cracked corn boiled soft and dried off with bran and fed warm, especially in cool or cold weather, is greatly relished. We like the effect of a handful of ground charcoal added to the mash two or three times a week. Fresh water, shell and grit, of course, are before the birds all the time. The item of grit we believe to be one of the utmost importance. We prefer screened pebbles of size anywhere between a grain of wheat and a grain of corn—the kind that may be found in any gravel deposit. A box of these pebbles is constantly within reach of the flock, and once or twice a week we like to mix a handful of pebbles with their trough feed in the morning. Try this and note the result.

We have read frequently that many breeders prefer to keep their birds from laying in the fall and winter in order that they may get fertile eggs during the hatching season. If this were essential, well and good; but is it? We believe not. During the fall months we feed our birds heavily daily with cut green bone to induce laying. When fairly well started to laying, we omit the green bone, for we know from experience it is not so conducive to high fertility as well-cooked lean meat, nor is rare meat so good as the cooked meat. Each breeder gets daily a slice of well-cooked lean meat good enough to tempt a hungry man—a slice as large as two fingers. Sometimes it is fried heart or liver, but generally what the butchers term "soup meat." It is boiled until thoroughly cooked and tender; the soup is drained off and mixed with the noon mash and the meat is fed directly after the mash.

We have had cockerels mated to hens, pullets mated to cock-birds and pullets mated to cockerels, and with this method of feeding we have been unable to detect any difference in the fertility of the eggs from the various pens. Several times we have had reports of high fertility. One man tested out only seven infertilities from 1140 Leghorn eggs; another got 92 chicks from 100 eggs. The Orpingtons, of course, showed less fertility, as might naturally be expected from so large a breed, but from our incubator we averaged nearly 90 per cent.

We have followed the above method of feeding and caring for the birds for many years and have never found any other method so sure of good results. It costs but little to try the method, and we know the results will be satisfactory. If your eggs in the past have not been satisfactorily fertile, try it.—Portland Oregonian.

PROFIT IN WATER FOWLS.

Water fowls are the greatest money-makers of any fowls grown on the farm, save turkeys, and we are absolutely sure they will give the turkeys a hot race for supremacy from a remunerative viewpoint for the reason you can raise so many more young ones than you can turkeys, and they are so much less liable to disease, says a breeder of ducks and geese. Turkeys are much more convenient to raise and are cleaner, making them more in favor with the majority of farmers, but when it comes to counting dollars in profit with the two great feathered American fowls we believe the goose will out-count the turkeys, although we have no data which we can refer to which would strengthen our claims, but close observation is a mighty good account book, however great the turkey proceeds are. There should be more water fowls grown on the average farm and poultry ranches throughout the country.

SOME DO'S AND DON'TS.

If possible keep beef scrap and dry wheat bran before the hens at all times, with plenty of oyster shells, grit, granulated bone and granulated charcoal. Feed either cabbage or mangel beets every day. Split the mangels in halves and drive a spike through them into a piece of plank and let the hens pick at them. Throw the cabbage on the floor; don't follow the old notion of hanging cabbage up from the floor two or three feet, so the hens will have to jump up to give them exercise. That kind of exercise is a positive injury to laying hens. Don't overfeed, but give the hens all they will eat up clean. Don't be afraid of getting them too fat; poor hens don't lay eggs in winter. Hens fed and managed right will be contented and happy and lay plenty of eggs during the winter months.

PREPARING GEESE FOR MARKET.

Geese should be grown to large size and then finished for the market in the shortest possible time. It is a good plan to shut them up in a limited enclosure and then feed them to the limit for about two weeks, selling them as soon as possible after this. In many markets the heavier a goose weighs the more it brings per pound, so it is an object to make them as heavy as possible.

"Not how much, but how good," is a good motto for the poultry raiser.

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Iris.

As to the Iris recently inquired about Mr. Lobingier writes:

There are several distinct kinds of Iris and many species, varieties and hybrids. The German is an early spring blooming flag and seems to succeed everywhere either in open sunlight or shade. The most popular is the Japan—Iris Kaemferii. It is found in great variety of color and double and single; hardy everywhere and delights in good mellow soil in open sunlight. They are increased by division, and can readily be grown from seed. They do not flower until near midsummer, when the flowering of the common Iris is past, which makes them all the more desirable. —Q. A. L.

Curing Lemons.

Please give a method of curing lemons on a small scale; have about sixty trees for the local market.—Old Subscriber, Long Beach.

The principal factor in curing lemons is to keep at an even temperature as much as possible and prevent too great evaporation; also the formation of moisture on the surface of fruit. Lemons should be packed while yet green, though at this time of year, or later, it has been difficult to get them up to the full size before turning. The usual size is 2 5-16 or 2¼ inches in diameter. The tinner can twist ordinary heavy wire into a ring of this size cheaply which may be given to the picker so that he may keep in mind the proper size. After the fruit is stored in the warehouse, be sure that the ventilation is sufficient to keep free from excess moisture. Covering with tent cloth has been found most satisfactory, but even then they must be watched almost daily to note condition and prevent excess or dryness or moisture.

Durum Wheat.

Please advise me regarding the Durum wheat. And do you think it will be a fitting crop in this part of the country? It is a good wheat country. It is very warm and dry in the summer. I think the average rain is not far from 10 to 12 inches. Where may I secure the seed and at what price? Is the Durum Wheat a good milling wheat.—L. C. L., San Miguel, San Luis Obispo county.

This query was referred to Professor G. W. Shaw of the State Agricultural College, and he answers as follows:

"The Durum wheat, I think will be very well adapted to San Miguel. This wheat can be obtained of any seedsman in Kansas and the Dakotas. Probably the local miller would be able to secure seed for anyone, having it shipped with their importations from Kansas."

Measuring Water.

Will you give direction for measuring water in a stream?—Mrs. N., Nordhoff.

The answer to this question would require more space than is at command in this department. So we refer our subscribers to page 441 of issue of April 16, 1908. Cuts and tables are there given with full instruction for measuring either by box or wier in running stream. The tables there given give result in either miner's inches or cubic feet. This table is so valuable and called for so often it is possible that we will repeat it with the cuts and tables in a later issue.

Alfalfa.

Do you know if alfalfa will pay in the upper Ojai Valley if irrigated? I have 40 acres of deep, rich, alluvial soil. It lies almost level, with streams flowing at least 10 months in the year. How much water is required for alfalfa? When should it be sown and what method of cultivation?—Mrs. G. N., Nordhoff.

There is no reason why alfalfa should not do exceedingly well under the conditions which you have described. The only question would be as to whether you would be short of water during the later summer months, but if only a two months shortage prevails you probably would not lose all the field of alfalfa, though it is possible you might not secure as many crops as you would if you could irrigate up to the next season. It is also possible that you might develop additional water supply either by wells or further development in the mountains about the place. As to amount of water see article on irrigation page this issue.

Beans and Boxes.

Please tell me how to raise string beans in boxes. Then transplant when danger of frost is over.—Subscriber, Selma.

We presume there would be no occasion this late to plant the beans in boxes, as all danger of frost should be passed before Subscriber could use the process which some gardeners do of securing their very early beans.

The method, however, is very simple and consists of a cheap, paper box, some use old berry boxes lined with paper so constructed that once the seed is well started in the glass house, it is carried in flats to the field when the little boxes are taken out and then stripped off, which leaves the potted plant with its small quantity of dirt just ready to set into the ground. Use care in not breaking this ball of dirt, which is solid around the roots of the small plant. If properly handled these plants will keep on growing as if the seed had been planted in the field and much earlier results secured.

Guernsey Cattle.

Kindly advise who breeds Guernsey cattle?—C. E. B., Hollywood.

The largest breed herder of Guernsey in Southern California is the J. M. C. Marble Company with offices in the H. W. Hellman Building, Los Angeles.

Citrus Culture in Arizona.

Is the Yuma section suitable for commercial citrus culture? What is the range of temperature there? What degree of frost kills an orange or freezes it to the ground?—J. W. D., Aptos.

There is less commercial citrus culture at Yuma than in the Salt River Valley. However it is possible to grow oranges in that section. That is in sections as free from frost as possible. The trees do not seem to bear as heavily as in the nearer coast sections. However the earliness of the fruit gives increased price for the crop, which would probably even the shortage in production. The range in temperature at the government station at Yuma, that is the extremes, are 22 degrees and 118 degrees. As to the degree of frost which kills an orange tree, it depends much upon conditions, such as age of tree and amount of moisture in the atmosphere. For instance we have seen young trees killed at temperature little below 24 degrees. This was however after several days of hard, dry winds with almost no moisture in soil or atmosphere. Again we have seen a temperature of 22 following heavy rains with cloudy morning after the extreme cold where neither fruit nor trees were injured to any great extent.

Grape Fruit Stock for Oranges.

I have been thinking of planting grape fruit seed for stock on which to bud valencias. I have been told that they are very susceptible to gum disease. Is this true and would you consider orange seed better for stock? —R. C., Anaheim.

The grape fruit or pomelo is possibly more susceptible to gum disease than the sweet seedling. If your land is of the nature which would be troubled with gum disease, we would advise the securing of sour stock seed. The pomelo makes a strong growing tree and is preferred by some. If proper care is given to soil, it is possible that the disease could be controlled even with that stock.

Ruptured Blood Vessel.

I have a cow in good flesh giving fine flow of rich milk that some weeks ago developed a lump in one teat and since that time has given bloody milk out of it. Can you tell me the trouble and give directions for treatment Is milk from other teats suitable for use?—Mrs. J. E. N., Nordhoff.

The inflammation in these cases is local and the milk from the other teats not affected is normal and healthy. Rub the udder well with hot lard at least five minutes twice a day. I should use a milk tube to draw off the milk and avoid any strain on the part until the ruptured vessel has a chance to heal.—M. E. A.

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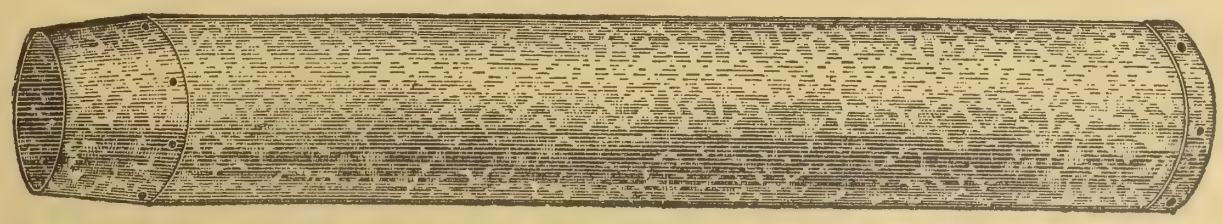

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The New California

A Small Empire Hitherto Neglected but Now Beginning to Attract the Attention It Deserves. Some of the "Whys and Wherefores."

Millions have visited California in the past, have stayed a week, a month or a year, and have returned to the East delighted with our climate, scenery, fruits, and show places, such as the missions, etc. They have exhausted several languages telling friends of the delights of spending a winter and money in California, holding up our state as the rich man's paradise. But when asked about the chances for the man either with moderate means or with means yet to get, the answer has invariably been the same: "It's no place to make money, and the worst possible place for a poor man. Make your money in the East, but spend it in California."

In expressing these sentiments they speak of the California of yesterday, not of the California of tomorrow. They did not know that the

NEW CALIFORNIA

in addition to having all the advantages of the old, has also the further advantage of being a "bread and butter" state. In this respect they are no more wrong than are hundreds of thousands of native Californians who today are not aware of the fact that there exists within their state an empire that in the next few years will become the talk of the nation, and one that up to one short year ago was practically unheard of outside the boundary of the state. But it is here nevertheless, and today thousands in the East are being consumed with a desire to visit this region and to make it their future home. There are thousands in the East who are making mental or actual preparation to come to the San Joaquin Valley, and the Land of Kerman in particular, to verify the glowing reports they are hearing of the opportunities here. Already hundreds have come and have secured the spot upon which they expect to spend remaining years, and where they expect to combine the certain making of money with pleasure of real living. Already the landscape is dotted with the temporary domicile of the new settler, where in the near future will arise the modern bungalow surrounded by semi-tropical fruits and rich alfalfa fields—comfort and wealth combined. The movement is on, and the "New California" is in the borning.

A SINGULAR CONDITION

That the richest agricultural portion of a well known state like California should remain in obscurity seems almost incredible, and many refuse to believe that all is not known about California that ever will or can be known. But there is a reason for this condition. California has been advertised as a winter resort purely, and as such has no equal in the nation. The railroads have worked along the lines of least resistance and have catered to tourist business entirely, offering extra inducements to easterners wishing to spend the winter here. Visitors have been congested in certain well known communities, and by the peculiar routing employed by transportation companies, tourists have either been whirled through the San Joaquin valley in the night or have been sent along the sea coast. But in either case they have come away without knowing aught about this wonderfully fertile valley and the possibilities which here abound, and which are now becoming known. The tourist business as it has been conducted in the past has congested people in certain communities, and in these localities productive lands have risen in value till the price has become almost prohibitive, at least to the man of moderate means, and there is no longer chance for remunerative investments. If further rise in land values in the so-called "older" communities is to come, it will come slowly and only then after a balance has been restored by populating the San Joaquin valley and after lands here have doubled several times in value. As it is, things are out of balance—lands sky high and scarce in one part of the state, and ridiculously low in another, and the latter the equal of the first, and generally conceded to be the superior by those who are competent to judge.

But portions of the San Joaquin Valley have been heard of, but the information has usually been thoroughly filtered before being passed to those who are looking for a location where it is possible to make money, and where the making of a living need give anyone no concern. For instance, Fresno county, in which the Kerman tract is located, has forced from the outside recognition as being the home of the raisin, the Smyrna fig, the olive and other semi-tropical fruits. Its wines have long since become famous. But while the county has been accorded these recognitions, somehow the public has been led to believe that it had some disadvantages not shared by other portions of the state. Just how these misrepresentations have gained currency is not material. The fact is that they are misrepresentations, and that the public is fast finding it out. People both east and west are learning that there is no more pleasant place to live in in the state, and that today there is no section that offers the advantages that the valley offers.

The Famous Kearney Boulevard, Extending 11 Miles East from the Kerman Tract

"THE LAST SHALL BE FIRST."

And so it comes that the "last shall be first," and that the section of the state destined to become the California of tomorrow, the real California, has been lying unnoticed by the hordes which in the past have swarmed over the state looking for a spot with the maximum of advantages and minimum of disadvantages. So it comes that today there is a greater chance for money making in farm lands than any community has offered in the past. So it comes that there yet remains a spot delightfully new where fortune, comfort, and contentment await the one who investigates it before it too has become congested with people, and values have gone into the thousands per acre. It is as yet a ground floor proposition, and all the profits incident to the rise that must come are yet to be taken, and will go to those who have the enterprise to secure their lands before the rush from the East forces values upwards.

But Fresno county is not all new, for within its borders are contained some of the richest colonies in the state, areas that have made themselves wealthy. A county that during 1907 raised products to the amount of over thirty-one million dollars is not a wilderness, neither is it an experiment. So while the Kerman colony is delightfully "new" it is a part of a county old enough to have astounded the outside with its wonderful agricultural richness.

This is not a land yet to be tried out. The experimenting has all been done and a reputation has been made for its products in the marts of the world. What Kerman lands, combined with Kings river water and Fresno county sunshine will do when mixed by man, is no problem, but a well established fact. Unlike many irrigated projects, some existing principally on paper—the future of the Kerman tract is a certainty. The pioneering days are long since over, and those who locate at Kerman can absolutely know what will result from their labors, for hundreds who have settled here in late years are already well on the way to opulence.

WHAT IT OFFERS

It offers the best water right in California, the same being abundant, appurtenant, perpetual and cheap, the maintenance tax being but 62½ cents per acre per year.

It offers a soil peculiarly fitted for the abundant production of all semi-tropical fruits, and pretty nearly offers a monopoly on the production of those specialties that require much sunshine and immunity from atmospheric moisture, such as raisins, sundried peaches and apricots, Smyrna figs, etc. The soil is deep, mellow and wonderfully rich, being easily worked . For the dairyman and alfalfa grower there is no country the equal of this.

It offers the advantages of a modern town, electric lighted, with sewerage, waterworks, public park, modern school house, splendid hotel accommodations, bank, etc. Kerman has telephones, and the best of railway and motor service, being located on the main line of the Southern Pacific between San Francisco and Los Angeles. There are no pioneering experiences to endure and no "new country" obstacles to overcome.

The prices of lands are as yet at bed rock, being from $110 to $150 per acre, including the water right. Terms are easy and so arranged that the settler can easily pay for his lands out of his crops after making the first payment. For further particulars either write to

CARNINE & STORGAARD, Kerman, Cal.

GENERAL SALES AGENTS

Or call at one of the following offices: ***Fresno Irrigated Farms Co.,*** 505 Kohl Bldg., San Francisco, Cal.; ***Fresno Irrigated Farms Co.,*** 553 So. Spring St., Los Angeles, Cal.; ***Dodd & Neu,*** 520 San Pablo Ave., Oakland, Cal.; ***H. J. Young,*** 222 Globe Bldg., Seattle, Wash.

Cream too Ripe.

I shall be glad if you can tell me what is the matter with my butter. I have one cow and although I churn alternate days, the butter looks, smells and tastes as though two weeks old. All utensils are kept scrupuously clean, being scalded and rinsed before and after use.—F. D., San Gabriel.

Evidently the cream is too ripe when churned and should be retarded by holding it at a lower temperature. This may be secured in the absence of ice by making a jacket for the cream can closely with three or four thicknesses of cheese cloth. Place the can out of doors in a shady place and put a can of water on a stand so that a small amount will drip on the sacking and keep it wet. If this is a fresh cow, after she has been in milk a little longer the cream will not ripen as fast as it does at present.—M. E. S.

Japanese Iris.

Upon reuest of a Santa Cruz subscriber for information as to culture of Japanese Iris, we wrote to Mr. Henry A. Dreer, seed and bulb grower of Philadelphia, and he gives the following points: "If you refer to the cultivation of Japanese Iris, would state that our best success has been in giving these ordinary field culture in well-drained ground where, during severe dry weather, we are in position to irrigate. There are large quantities of these Japanese Iris sold in connection with other hardy perennial plants. As a cut bloom, although they are very handsome and deserve popularity, they are handled but very little. For cut flower purposes, flowers should be cut when the buds are just in condition to expand, when they will last in water for four or five days.

How to Sow Kafir Corn.

Please tell us about Kafir corn, how much to sow to the acre for cutting with the mower and feeding green to milk cows. How does it grow on alkali land? We have heard that in Kansas where they irrigate it was often cut same as alfalfa. Please state at what stage it is cut. —H. D. W., Santee.

Kafir corn sown in this way requires about 25 pounds of seed to the acre. We find, however, that it is more profitable to drill it in continuous rows three feet apart as it can then be cultivated after it is irrigated and a quicker second and third cutting secured. We, however, for this use prefer the saccharine sorghum as the early Amber rather than the more woody non-saccharine varieties. It should be cut before it heads and not below the first point. It will then sprout at once. If there is more than can be fed, cure it for winter hay. The first sowing can be made at once and a second sowing follow in two weeks. In this way one will come ahead of the other and give time to get the land ready. Both are fairly tolerant of alkali and will stand more than alfalfa. The cultivation after irrigation also will carry them along on land that they would not stand if merely soaked with water and the alkali to gather on the surface.—M. E. S.

Government Land.

We have a letter from a widow at Napa who wishes to file a widow's claim on government land, and she requests that any information which Cultivator Subscribers may have may be forwarded to her. If any reader may know of such land which may prove valuable, the information will be forwarded from this office.

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Pilularis.

Where can I secure the seed of a Pilularis?—J. V., Fresno.

Any seedman advertising in the Cultivator we think can supply you.

Silver Skins.

Can you give me any information about the Silver Skin onions. Is it necessary to break them down, and how to do so, so they will not come up again? We have broke ours flat twice, but they come right up again and some have started to go to seed. —C. A. H., Burbank.

The breaking down of the onion tops will not prevent them from going to seed—or rather, it will not cause them to make good bulbs. The error is more deeply rooted in the minds of the average gardener that breaking down the tops will cause onions to bottom well. Either the seed has been from poor stock or the excessive wet winter is responsible for any failure to make good bulbs. I know of no remedy. Sometimes a crop that promises so poorly turns out pretty well and it is just possible, with continued fine weather, subscriber may find his loss inconsiderable.—Q. A. L.

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Legal Queries

Edw. L. Payne, attorney, 301-304 Douglas Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Payne is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Ditch Nuisance.

A water company has an open ditch situated on the side of the public road and about five or six feet from property line. The only entrance or approach to the several properties is over culverts about 16 or 18 feet long in front of each place. The ditch being an open one, and very much larger than necessary to convey the water ever run therein—there is a luxuriant growth of grass, weeds, etc., which, with the washing of sand from the main ditch, and sides of the lateral ditch itself, makes frequent cleanings necessary, which amounts to a considerable quantity each time, this is shoveled out of the ditch, and left there by the company and if not removed by some one, other than the company, will in time make a bank several feet high and wide. Quite like a field work, or rifle trench in time of war.

The company is willing to abate the nuisance if the property owners adjoining will pay 40 per cent of the cost to pipe the ditch.

This piling of weeds on sides of ditch prevents the adjoining owners from keeping their street in sightly condition, without removing the deposits, which is very annoying, expensive, or if left, unsightly. The ditch has been in use a good many years. Repeated efforts have been made to get the public authorities to take action. Nothing doing.

Has the company a legal right to shut out the property owners from their land, except the 16 or 18 feet culverts Has the company a right to maintain such a ditch to the constant annoyance and menace to the property owners, as well as that of the public?—Water Ditch.

The property owner has an action for damages against the company because of being shut out from the full use and enjoyment of his land by the ditch, unless he has acquiesced in the existing condition for such length of time as to be stopped from objecting.

If the company has not, by grant, or use for the required length of time, procured title to the easement, the owner has the right to remove the ditch.

The company's encroachments can be justified only to the extent of its easement; as to all beyond that its acts constitute a private nuisance, for which an action may be maintained. It is bound to keep the ditch in such a state that it will cause no encumbrance to the adjoining property owners beyond that warranted by the easement. The adjoining owner has in this, as in other cases of nuisance, the privilege of taking the remedy into his own hands.

If there is no grant to the company, its rights are measured by the manner in which it has used and maintained the ditch without objection for years past.—E. L. Payne.

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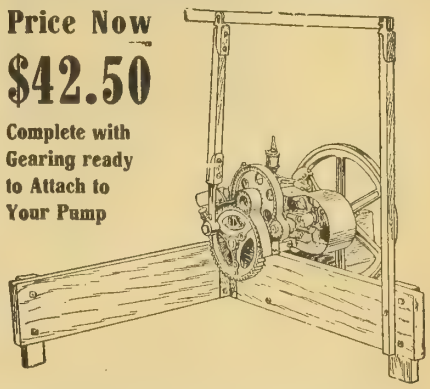

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FOR SALE—CALIFORNIA BLACK walnut seed in sack lots. Wanted: Mayette, Franquette and Parisienne Walnut scions, also Rupestris St. George, Rip. x Cord. x Rup. 106-8, Rip. x Rup. 3306 and 3309 cuttings grafting size. Address FANCHER CREEK NURSERIES, Fresno, Cal.

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BARRED ROCKS, RINGLET STRAIN, direct from the famous E. B. Thompson pens, New York. Have taken more prizes than any other Rocks at The Madison Square Garden Shows. For beauty, size and laying quality, unequaled. Eggs per setting $1.50 and up. Reduced rates on incubator lots. Special matings. $3.00 per setting of 15; 2 settings $5. Agent for The Potter System of Selecting the Laying Hen. Price $1.00. A. C. CISSELL, 1812 Santa Monica Ave., Los Angeles, Colegrove car to Swan street.

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M. E. DILLINGHAM, SAN GABRIEL, Cal., is selling out: About 20 golden Seabright Bantams, $2.50 per pair; 7 pairs Black Tail Japs, $2.50 per pair, all Partridge Cochine Bantams same price; 1 trio Black Breasted Red Game Bantams, $3.00; Buff Cochin Bantams, $2.50 and up per pair; and also 1 pen White Wyandottes, 1 male and 10 pullets, $12.00.

SILVER CAMPINES, GREAT LAYers, non-sitters, beautiful fowls, splendid foragers. Recently imported from Belgium. Eggs for hatching $3.50 per doz. Write for circulars. E. SMITH, 3527 Dauphin St., Los Angeles, Cal.

BLACK MINORCAS—FINEST QUALity. Bred to lay big white eggs and up to standard size. Eggs $1.50 to $3.00 setting. Grand Cockerels reasonable. J. P. McDONOUGH, Geyserville, Cal.

BUFF PLYMOUTH ROCKS, BRED TO lay, win and pay. My birds have won more prizes than all competitors combined. Eggs and stock. Circular. Dr. W. H. Holmes, Slavin Block, Pasadena, Cal.

WHITE MINORCAS (EXCLUSIVELY), standard bred, prolific layers, large white eggs. Eggs (after April 1st) $1.25 for 15; $3.00 for 45; $5.00 for 100. L. V. PETERSON, Guerneville, Cal.

WHITE ROCKS — SNOW WHITE, prize winning, bred to lay. Eggs $1.25 per setting. W. E. B. SMITH, 820 Elm Ave., So. Pasadena, Cal. Phone Sunset, Main 2866.

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MAMMOTH BRONZE TURKEYS — Eggs fifty cents each. None in West larger or finer marked. Laid by old hens. MRS. LAURA E. HARDING, Brawley, Cal.

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WHITE MINORCA EGGS FOR hatching, $5.00 per 100 after March 15. Some prize winners. MRS. E. BANTA, Calistoga, Cal.

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RHODE ISLAND RED EGGS FOR hatching, $1.50 for 13, $7.00 per hundred. CHAS. F. TUTTLE, Phone Main 1294, P. O. Box 320, Altadena, Cal.

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FOR SALE—MEHRING MILKING MAchine with extra parts and covered pail, all in good order. WM. H. BIRD. Box 6, Compton, Cal.

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Take Electric cars to Compton
TUESDAY, APRIL 20
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This herd was formerly advertised for sale at Burbank and was postponed for reasons which will be explained on this date, and removed to the Palmer Ranch for convenience of sale.

45 Head of as Fine Dairy Cows as you will find in Southern California, nearly all fine Holsteins and Durhams, a few fine Jerseys fresh and coming fresh, large rich milkers, all young and in fine condition. This herd is the result of years of careful breeding and culling and dairymen looking for first-class stock should not miss this sale.

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On account of dissolution of partnership, this stock must and will be sold to the highest bidders, positively no limit or reserve. Stock can be seen on the Palmer Ranch after April 17th.

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The Limoneira Company at Santa Paula will make exhibit at the coming A-Y-P Exposition at Seattle.

ALL THAT IS CLAIMED.

Long Beach, Cal., March 5, 1909.
Mr. John Schilling, Jr.,
Agent Auto-Fedan Hay Press Co.,
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Dear Sir:—I have used your press in all kinds of hay, and must say it beats any press I ever used. Have had experience with a good many different makes. I used your press in Kansas prairie hay, also in long barley grown in California. Have done fine work in both kinds. Am well satisfied with it as a safe, durable and speedy machine.

Yours truly,
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Made of Yucca Palm

Is cheap, durable and quickly put on the tree. It prevents Rabbits from destroying your trees. A sure protection against frost, sun-burn, grasshoppers or dry winds. Can be easily removed; will last for years.

Send for samples.

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12 inch long,	$ 9.00	per	1000
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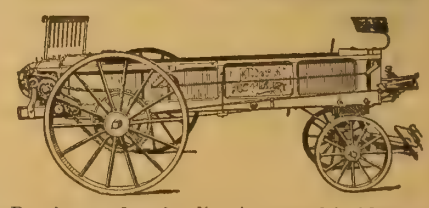

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Household Department

TWO LOVERS AN' LIZETTE

Who, me? in love, an' wid Lizette?
  You better b'lieve I ain't;
No sassy gal like dat could give
  Dis nigger heart-complaint.

If Gord don't love her more den I,
  Den all I got to say
Is, dat her soul's in danger sho',
  An' she had better pray!

It's her dat is in love wid me;
  An' I jes laughs an' tell her,
"De fruit dat draps d'out bein' shook
  Is sho' to be too meller!"

But all de same, you talks too much
  To suit me, 'bout Lizette;
Some gent'man's nigger gwine get hurt
  About dat same gal yet!
—Howard Weeden.

EARLY VICTORIAN.

"THAT is your last word?"

"Emphatically." His eyes avoided the pretty flushed face of his wife and swept the wide drawing-room with an apprising glance. "What more do you want?"

He threw his hands out with a ponderous gesture that somehow fitted his stolid British presence as finely as the light shrug of the shoulder fits the Frenchman, and his face hardened into obstinate lines.

But she said nothing in return.

Stung by her pregnant silence, he went on: "I'm a plain city man, with no pretensions! What was good enough in my father's time is good enough for me. I don't hold with the present ridiculous fashion in houses. It's simply an excuse for squandering money. My parents lived here and chose the furniture, and it's all good of its kind—Early Victorian, if you like, but solid and handsome—far better—." He checked himself with an effort under the sudden temptation to allude to the poverty from which he had rescued his bride but two years since, and went on hurriedly, with a heightened color: "It's no good, Iris, you'll have to make it do!"

But she guessed the trend of the sentence so clumsily suppressed, and her eyes narrowed with annoyance, as, following his gaze, they rested on a portrait on the farther wall, that of a portly lady in a lavender silk dress, with smoothly parted hair drawn over her eyes and bearing the insignia of her office, a massive silver chatelaine, which the artist had minutely reproduced in detail, perhaps in utter hopelessness over the hard middleclass face.

Yet, for all that, a certain look of pride crept into her son's eyes as he gazed up at the—so-called!—"work of art."

"If you follow her" he said with a nod, "you won't go far wrong! And now I must be off."

With a third of the money she now could claim what a life could have been hers in the little flat by the busy gate—what treasures of art, what feasts of intellect! For now she had the means, she lacked the environment.

She thought with a shudder of the formal "dinners" their present style of entertainment invariably took, and, although she loved her husband, she rebelled in the depths of her Bohemian heart at the life she had voluntarily and even thankfully stepped into.

But in those days it had meant comfort not only for herself, but for the practically dying mother, and the peaceful assurance to the latter of the safety of her child after she herself had passed through the dark valley.

It had been all for the best.

She pulled herself together with an effort of courage as her mind ran back to her mother's death.

After the first shock of her grief she had given herself up to improving the gloomy Bloomsbury mansion; picking up quaint, inexpensive old chairs, discarding the heavier ones, adding bright, artistic chintzes, and consigning the "impossible" curtains to the depths of the lumber room.

All so quietly and unobstrusively that her husband from his pinnacle on the rock of conservatism had hardly realized the change until this eventful day.

Then, through the stupidity of a shopman, a fine old dresser had arrived at the precise moment when Cecil Armstrong was leaving for a week's fishing in the north. Explanations had been precipitated, and the veto had gone forth.

Anyhow, she had a treasure of a cook—that weapon in the hands of a wife!—and she wondered with a little smile of amusement, what the prim figure with the chatelaine would say to the modern cuisine.

"Extravagant kickshaws, I expect," she said to herself, and, as if in answer to her thought, an idea flashed into her mind, a comedy of revenge against that debatable "family taste," so complete and alluring that her laugh rang out in the somber room.

It was a pouring wet evening when Cecil Armstrong returned to town. The weather for the last few days had been unsettled, the fishing bad, and the first novelty of "roughing it" had given way to steadily growing disgust at the discomfort of perpetually wet clothes and smoky fires.

He leaned back in the hansom and gave a sigh of relief as, crossing Oxford street, they turned up into Bloomsbury, and he pictured to himself the discret welcome of Robert, the comfort of the brightly lit house, and the well-cooked dinner with his pretty young wife.

She was standing just outside the drawing-room door—not in the pretty evening dress he had somehow anticipated, but very straight and slim in a plain gray silk, devoid of ornament, and from her waist there hung his mother's chatelaine.

Unobservant by nature, he yet felt there was something instinctively wrong about her hair, and, although she greeted him affectionately, a little chill crept into the subtle sense of homecoming.

All the hundred-and-one little improvements—the scattered embroideries and masses of plants and carelessly arranged flowers—were missing. The old heavily framed prints were back on the dull gray walls, and, albeit the night was chilly, no fire burned in the gate, where a painted screen was balanced, with an impossible waterfall that threatened to deluge the steel fender and pour out over the enormous bear-skin rug.

He enjoyed his Scotch broth thoroughly, but when it was followed by a massive joint of cold sirloin, placed, not on the carving table, but, in all its majesty, under his very nose, hiding his disappointment with a heroic

Bohn-Syphon Refrigerators

THE BOHN dry air syphon "Porcelain" lined refrigerators are the only refrigerators we have ever seen that we regarded safe and good enough for our endorsement and broad guarantee.

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The BOHN system of cold storage is used by

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The manufacturers claim for this refrigerator more economy in the consumption of ice, a better circulation of air, a more perfect drainage, the absence of all odors, a more sanitary and hence a safer receptacle for food.

Of course, the BOHN-SYPHON refrigerator costs more than the ordinary ice box—that is, the first investment is more, but ultimately the BOHN-SYPHON should pay for itself in the saving of ice, in the preserving of foods and the guarding of the health of the family. You really can not discard one of the old style, unsatisfactory ice boxes too soon.

Whether you want to buy now or not, it would pay you to investigate carefully the merits of the BOHN-SYPHON. It is sold, like all our goods, under a positive guarantee of satisfaction or your money back.

Call or write for catalogue, it will give you much interesting and valuable information on economical refrigeration and the proper preservation of food and health.

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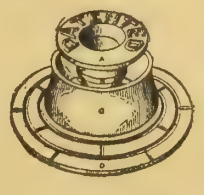

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Enjoying the balmy air of the South or the cool and bracing air of the North.

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If you have tried most everything else, come to me. Where others fail is where I have my greatest success. Send attached coupon today and I will send you free my book on Rupture and its cure, showing my new discovery and giving you prices and names of many people who have tried it and were cured. It is instant relief when all others fail. Remember I use no salves, no harness, no lies.

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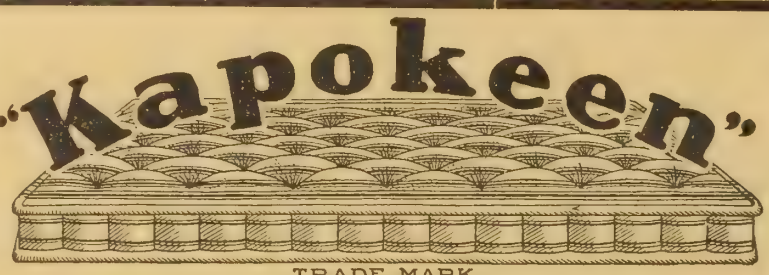

TRADE MARK

The Mattress of Quality

In introducing our Kapokeen Mattress to the readers of The Cultivator, we are taking the first steps toward establishing a National reputation and market for an article, which, on account of its many advantages, has gained a pre-eminent position in its own vicinity.

"Kapokeen" is made from the Kapok or silk floss obtained from the bean of the Eriodendren tree, grown on the island of Java. It is prepared by our own patented process, which removes every particle of seed and preserves in full the resiliency of the natural fibre.

The mattress is made in our own factory where every precaution has been taken to insure absolutely hygienic conditions, by skilled workmen using only the best quality of materials throughout.

NOTE THESE POINTS.

Kapokeen can be "made over" in exactly the same manner as hair.

Kapokeen is sun dried, sun cured, and free from chemicals or other foreign substances.

Kapokeen, no matter how long it has been in use, by being placed for two hours in the sun, will expand and become as resilient as a new mattress.

Price No. 1 Kapokeen Mattress, 4-4 size, 5 1-2 inch box, Imperial edge satin ticking **$15.00**

Three-Quarter Size, $12.50 Single,$10.50

Kapokeen Mattreses are made only by

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A postal will bring you a little booklet describing this mattress

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Thousands in use all over the country. A good light is the greatest pleasure and the first necessity of every home.

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GREAT ECONOMY—COST LESS TO BURN than an ordinary lamp. As easy to operate as gas or electricity, and better than either. ABSOLUTELY SAFE under all conditions. Lighted and extinguished like gas. Burned HIGH or LOW like GAS without a trace of odor. And a BRILLIANT, soft, steady, shadowless light—but this you will have to see to appreciate.

The lamp as shown in cut burns 32 hours on 3 quarts of oil.

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$16.30 buys this handsome six-hole Nickle-Trimmed Cast Range direct from the Manufacturer

without high shelf. With high shelf, just as shown in the cut, $19.97; large oven, six cooking holes, best quality of iron. Burns coal or wood. Handsome nickle trimmings. OUR TERMS are the most liberal ever made. You can pay after you receive the range. You can take it into your own home and use it 30 days. If you don't find it exactly as represented, the biggest bargain you ever saw you won't have to keep it.

Write today for our beautifully illustrated Stove Catalogue No. 101-C. A postal card will do it. Don't buy until you get it.

P. F. Ross & Co.

268 Market St. San Francisco, Cal.

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attempt, he suggested an explanation himself.

"Something gone wrong in the kitchen, I suppose, my dear?"

"Wrong " said his wife, innocently. "I hope not! It looked an excellent joint. I saw it cut myself." There was pride in her steady voice, but she dropped her eyes before his astonished look, fearful of the mischievous spark she feared might be there.

He looked across at her with sudden anxiety.

"It's all right," he said, hastily. "I'm not a bit hungry, that's all. We've had such rotten weather lately. 'Im glad to be back again—"he cleared his throat—"very glad."

His wife got up with a sudden twinge of compunction and poured him out a glass of port. "That will do you good," she said, gently; "it's the old bin."

He put his arm about her and she bent down to him.

"You've done your hair differently?" he suggested, with a puzzled glance.

She put up her hand and stroked back a rebellious strand, that would curl against her will.

"It's neater, isn't it?" she said. I knew you'd be pleased."

She picked a little bit of fluff off his coat collar and went on, softly: "I'm going to try, Cecil—after what you said—you remember?—to take life more seriously, and try to model myself and the house, and, in fact, everything, on the old regime you so approve of."

A shade of anxiety stole across his strong, open face, as he listened to her.

"No more foreign ways—no more French food—" a vertical line came between his eyes, but she went on with increasing fervor—"no more money squandered on dress," she smoothed out the stiff folds of her silk gown primly, "and no foolish alterations in the house."

What could he do but murmur incoherently his approval of her conduct as he kissed her pretty face so near his own?

"I believe it's a joke," he said, doubtfully, as he poured himself out another glass of port, but when he joined her upstairs, in the melancholy looking drawing-room, his heart sank again.

"Almost cold enough for a fire, isn't it?"

"In May!" Her voice showed marked disapproval, as he moved about restlessly on the stiff sofa, innocent of cushions.

Just as he was turning to go, with a heavy gesture of annoyance, she stopped him with upraised hand, as though fired by a fresh idea.

"If you would care, Cecil," she hesitated, purposely, "there's my den—as I call it; and a fire—you know how chilly I am!—and we could sit there together."

Before he could reply she ran lightly past him up the stairs.

As he joined her, openly grumbling, on the landing above, she threw wide the door of a room hitherto unused, and switched on the light.

He gave an involuntary exclamation as his eyes fell on the bright log fire, flanked by two deep chintz-covered chairs, adding its sweet scent of pine wood to that of the massed flowers scattered in profusion in the cozy room.

She drew forward one of the comfortable chairs with the pride of ownership.

"Sit down, darling, and light up—here are matches," and proceeded to make coffee.

Once she turned and tucked a soft cushion under his head as he lay back comfortably in silence, drinking in the old familiar artistic atmosphere—that instinctive touch of clever fingers now banished from the rooms below.

And as he watched her, the only incongruous note; in her formal Victorian dress, her beautiful hair deformed by its very neatness, her individuality tampered with, slowly the lesson played its intended part.

So that, when she handed him his coffee and his eyes met hers:

"I give in," he said, under his breath, "and for heaven's sake go and get into a comfy tea-gown, old girl—and be yourself again, and, look here—" his voice rose almost gayly as he saw the happiness shining in her face—"I didn't mean it—I'll give you carte blanche in future; do what you like, only—no more cheese and cold beef—eh?"

And a kiss wiped out the last sting of the Early Victorian comedy.—Exchange.

About the House

TO WASH A PRINT DRESS.

THE price paid for the pretty cotton and gingham fabric in no guarantee as regards durability of color for often those colors which look most promising are the ones which vanish quickest.

Colored print goods will be freshened if the color is set before washing the first time and this may be done by soaking the garment in a strong solution of salt and water for an hour before washing, though some colors require a little different treatment. A light shade of pink or blue may be set with salt water in which a little alum is dissolved and there is nothing better than oxgall for setting the different shades of purple, lilac and light reds. Pretty gingham and other cotton waists and dresses can be washed so that they will lose none of their beauty if it is done in the right way and nice colored garments should be washed by themselves and not hurried through with the weekly washing.

There is nothing better for keeping the color in nice cotton fabrics than warm soft water in which enough pearline has been stirred to make a good lather then the garment must be washed quickly through this suds and rinsed through two waters; turned wrong side out and hung in a shady place to dry.

When perfectly dry roll up for an hour after sprinkling evenly with warm water, then iron on the wrong side with hot irons. The starch should be strained to make it as smooth as possible and to avoid starch spots showing on the goods, and no colored goods should be subjected to sunshine while wet, nor be left in the wind after drying.

Fruit stains can be removed from colored fabrics by soaking the stained portion in turpentine and some other remedies are cream of tartar and water for grass stains equal parts of ammonia and turpentine for paint, lard for tar or wheel grease; and spirits of salt may be used on colored as well as white cloth for removing iron rust.—M. A. Y.

He.—I've money to burn.
She.—Then I'm your match.

DISPOSAL OF WASTES.

The proper disposal of waste products presents a difficult problem. Do not throw old bottles, tin cans, broken vases, or dishes near the house, as they become filled with water and after a rain form a good breeding place for mosquitoes. There should be a metal pail in or near the kitchen and all the garbage should be put into this. Empty it every morning and evening and wash it out, using boiling water and soap. Use an old broom for washing the pail. If garbage or refuse pails are kept clean, there is no odor. Remember that a wooden barrel is not a good thing to use for garbage because the liquid runs through. The removal of the garbage is quite a difficult problem. In small towns it is a good idea to burn everything as far as possible. In a small family all the garbage may be burned in the kitchen range, or in the furnace, if you have one. Use all the coal ashes to fill holes in the road or to make walks.

The quick removal of all waste products is the first law of sanitation. Sanitarians know that typhoid fever need not exist. It is the result of a little germ that enters the body in food and drink, grows very quickly in the small intestines, and is then thrown off again in the excreta. Be very careful not to throw these discharges on the ground, as they soak through the earth and contaminate the well water. Select a different place every day to throw the slop water or the dish water. Many a case of sickness comes from unwashed floors, unclean pails, deplorable outbuildings. There are so many little things that go to make good sanitary conditions. Fire is the best disinfectant we have, so burn the wastes as quickly as possible.—Mary F. Rausch.

BUTTERMILK.

Buttermilk as a remedial agent cannot be praised too highly. The lactic acid, the sour of the buttermilk, attacks and dissolves every sort of earthy deposit in the blood-vessels. Thus it keeps the veins and arteries so supple and free running there can be no clogging up; hence no deposit of irritating calcareous matter around the joints, nor of poisonous waste in the muscles. It is the stiffening and harrowing of the blood-vessels which bring on senile decay. Buttermilk is likely to postpone it ten or twenty years, if freely drunk. A quart a day should be the minimum, the maximum according to taste and opportunity. Inasmuch as gouty difficulties arise from sluggish excretion, buttermilk is a blessing to all gouty subjects. It gently stimulates all the excretories—liver, skin and kidneys. It also tones the stomach and furnishes it the material from which to make rich, red, healthy blood. If troubled with gout, avoid meat, sweets, pastry, wines, spices, hot rolls, bread of all sorts and everything belonging to the tribe of ferments. Eggs, game, fresh fruit, vegetables, especally salads, may be eaten with impunity. If anyone has a creaky joint or a swollen and aching one, he should drink all the buttermilk he can relish whenever and wherever he can, but it should be fresh-churned and wholesome.

Little Barbara, on seeing a dish of quivering lemon jelly placed upon the table, exclaimed, "O mamma, see how nervous that jelly is!"—Youth's Companion.

THE TROUBLE.

Och, why should I think av that shlip av a gurl,
Av that soft little whisp av a thing?
Och, why should she throuble a bullock like me,
Who's thraveled and taken me fling?

Aroo, and a pea is a mite av a thing,
Tho' shut in your shoe and 'twill shmart!
But a mite av a gurl will throuble ye more
When she's tight on the tip av your heart!

—Arthur Stringer.

THE ONLY AD HE EVER HAD.

There was a man in our town
Who was so wondrous wise;
He thought a business he could run
And never advertise.

Take heed and learn the moral
Of this sad and mournful tale,
For the only ad he ever had
Was: "Closed for Sheriff's sale."

—The Wilclarco.

LOST HOPE.

Alas for the man who never sees
The stars shine through his cypress trees!
Who, hopeless, lays his dead away,
Nor looks to see the breaking day
Across the mournful marbles play!

Who hath not learned, in hours of faith,
The truth to flesh and sense unknown,
That life is ever lord of death,
And love can never lose its own.

—John Greenleaf Whittier.

HAD PREDICTED GREATNESS.

"How do you like running a street car?"

"It ain't so bad," replied the boy graduate. "However——"

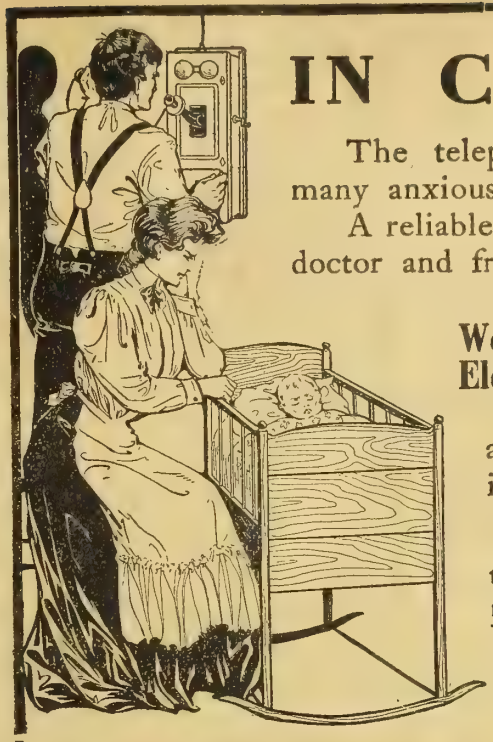
"Yes?"

"I don't think much of our class prophet."—Louisville Courier-Journal.

Employer—The increase in the cost of meat makes a lot of difference in my living expenses! Don't you find it so?

Clerk—No, sir; my salary is so small that I've bought no meat for several years!

Employer—You're fortunate! You won't mind it then if on account of the high price of meat I reduce your salary a little.—Simplicissimus.



IN CASE OF ILLNESS

The telephone is a friend in need. It will save you many anxious moments and possibly **the life of a loved one.**

A reliable telephone places you in instant touch with your doctor and friends without taking you from the "sick room."

Western Electric Rural Telephones

are of proven reliability. They will not fail you in emergency. **Think over the small cost.**

All of the material needed to build the very best rural telephone line will cost you and your neighbors only about as much as two or three sheep. With our Free Bulletins before him a boy can install and operate the system.

Cut out this advertisement, write your name and address on the margin and mail to-day to our nearest office, so that our **Free Bulletin No. 71** which describes the entire plan in detail, may be sent you immediately.

WESTERN ELECTRIC COMPANY

The world's oldest and largest telephone manufacturer. There are over **4,000,000 Western Electric Telephones** in use in the United States to-day.

Rural Telephones a specialty

Eastern	Central	Western	Pacific
New York	Chicago	Saint Louis	San Francisco
Philadelphia	Indianapolis	Kansas City	Los Angeles
Boston	Cincinnati	Denver	Seattle
Pittsburg	Minneapolis	Dallas	Salt Lake City
Atlanta		Omaha	

DYNAMOS-MOTORS WESTERN ELECTRIC COMPANY CABLE-TELEPHONES-SUPPLIES

AMERICAN TELEPHONE & TELEGRAPH CO. LONG DISTANCE TELEPHONE BELL SYSTEM AND ASSOCIATED COMPANIES

Mayer Leading Lady

THE CORRECT SHOE FOR STYLE, EASE AND GOOD WEAR

You could never hope to buy a more stylish or serviceable shoe than the "Leading Lady." It is right up-to-date in appearance and fits the foot perfectly from the very first. Besides being stylish and comfortable, the

Leading Lady

wears much longer than most shoes. It is so well made that it lasts twice as long as the average shoe, and will retain its shape to the end.

Why buy inferior shoes when, with the same money, you can get the "Leading Lady?" **Your dealer will supply you; if not, write to us.**

Look for the Mayer Trade Mark on the sole.

***FREE*—If you will send us the name of a dealer who *does not* handle Leading Lady Shoes, we will send you free, postpaid, a beautiful picture of Martha Washington, size 15x20.**

We also make Honorbilt Shoes, Martha Washington Comfort Shoes, Yerma Cushion Shoes and Special Merit School Shoes.

MILWAUKEE Mayer CUSTOM MADE

F. MAYER BOOT & SHOE CO.
MILWAUKEE, WISCONSIN

WESTERN BRANCH: Washington Shoe Mfg. Co.—Seattle.

The Barker Portable Cottages Bungalows, Garages, Tent and Poultry Houses

These houses are correctly built of selected material and are so different from the ordinary portable houses as the aim has been to make them look like a permanent structure built on the ground. They have stood the test of years and are conceded by experts to be the best, cheapest and most practicable portable house made. Please investigate before purchasing or building. We also manufacture sanitary poultry houses of our own designs. Write or call at office and factory, corner of Topeka and Alameda Streets, Long Beach car line.

Pacific Portable Construction Company **Los Angeles, Cal.**

Here Is Something New From Kalamazoo

Prove for yourself in your own home, that the Kalamazoo is the most perfect—most economical—most satisfactory range for you to use—Your money back if it's not.

Send for Catalog No. 508 with special terms and compare Kalamazoo prices with others

Cash Or Time Payments

We want every housewife to know the comfort and convenience of a Kalamazoo in her home. You can buy on **easy time payments** or pay cash if you like. Either way—you save $10 to $20 on any stove in the catalog. We make it easy for responsible people to own the best stove or range in the world.

We Pay the Freight

Kalamazoo Stove Co. Kalamazoo, Mich.

"A Kalamazoo Direct to You"

San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, April 14, 1909.

Butter.

Butter remains exactly as last week. The market is featureless, with receipts sufficient for demands.

Produce Exchange wholesale quotations are as follows with actual selling price to the trade 2½c advance on Extras.

Creamery ex per roll	47½
Firsts	45
Eastern Creamery ex	47½
Dairy	24
Cooking	22½
"Butterine"	16@20

Cheese.

Cheese is slightly higher with good demand.

Southern California Anchor	17
Northern fresh	16½@17
Anchor, Young America	18
Longhorn	22
Eastern singles	18½
Cheddars	19
Swiss	17@18
Imported Swiss	30
Daisy	17½@18
Limburger	21
Oregon triplets	18
Twin	17½

Eggs and Poultry.

Eggs have again advanced or at least the market is sufficiently strong that it is slightly better than last week's quotations. In some cases case count selling 2 cents in advance of last week.

Eggs local candled	24@25
Eggs case count buying price	22

Dealers pay for live stock.

Hens per pound	15@16
Young roosters	16
Fryers per lb	23
Broilers per lb	26
Roasters	20
Old roosters	8
Turkeys	20
Geese	14
Ducks	15
Squabs	1.25@1.75

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs from 175 to 200 pounds	6½@6¾
Prime steers	4¾@5
Heifers	4@4½
Calves per pound	5
Sheep ewes per head	3.75@4.00
Lambs per head	3.55
Wethers	4.50@5.00

Potatoes.

Wholesale prices are:

Sweets per ctl	1.75@2.00
Sweets choice	1.15@1.25
Sweets White	1.50
Sweets Red	1.50
New per box	1.00@1.50
Early Rose local	2.50@2.75
Early Rose northern	2.50
Burbanks local	2.25
Lompocs	2.35@2.50
Highland fancy	1.60@2.00
Salinas	2.50
Oregon Burbanks	2.00@2.25

Onions.

Wholesale quotations:

Australian Brown	2.25@2.50
Danvers	1.75@2.00
Oregon's	2.00@2.25
Nevada's	2.00@2.25
Utah's	2.00@2.25
Red Globe	1.75@2.00
Imperial Bermudas per crate	2.35@2.50
Texas Bermudas	2.45@2.60
Garlic	10@13

Vegetables.

Artichokes per doz northern	40@60
Artichokes locals	25@50
Asparagus green	5@8
Asparagus per lb common	3@5
Beets per doz	20@25
Bell peppers per lb	25@40
Beans string	16
Beans Limas per lb	8@10
Brussels sprouts per lb	9@10
Cabbage per sk	1.00@1.50
Cabbage red per lb	3
Celery per crate	2.00@3.00
Chili per lb	20@25
Chili dried	9@10
Chicory per doz	50
Cucumbers per doz hot house	1.75@3.00
Cauliflower per crate	75@1.25
Carrots per doz	20@25
Chives per doz	1.60
Endive per doz	25
Egg plant	25
Green onions per doz bunches	15@20
Horseradish per lb	12@15
Lettuce per crate	1.50@1.75
Lettuce choice	50@90
Mushrooms per basket	3.00
Oyster plant	35
Peas per lb	3@4
Parsley doz	15@20
Parsnips	20@25
Rhubarb	60@80
Rhubarb Northern per box	1.35@2.00
Radishes per doz	15@20
Spinach per doz	15@25
Turnips doz	15@20
Tomatoes crate	1.00@1.25
Water cress	15@20

Citrus Fruits.

Navels fy	2.00@2.25
Navels ch	1.25@1.50
Tangerines halves	1.00@1.50
Grapefruit seedless	2.75@3.00
Grapefruit seedlings	1.50@2.00
Lemons fy	2.00
Lemons ch	1.25@1.75
Lemons ch	1.75@2.00
Limes half box	1.25@1.75
Kumquats basket	25

Fresh Fruits.

Wholesale prices on the market are:

Baldwins 4 tier	1.35
Bellflowers	1.05@1.25
Newton Pippins	1.00@1.50
Red Pearmains	1.00@1.25
W W Pearmains	1.00@1.25
Spitzenberg	2.25@2.50
Jonathans	1.75
Aligator Pears per doz	3.50@4.00
Custard apples per lb	10@15
Guavas	4@6
Loquats per lb	8@10
Pears box	1.00@1.50
Pomegranates per box	1.75
Raspberries	20
Strawberries	5@7
Strawberries ch	3½@4

Dried Fruits.

Wholesale prices are:

Apricots	8@10
Evap apples fy per lb	8½
Figs loose white	5
Figs blk	5
Peaches in boxes	7@8
Peaches sacks	6@7
Pears	9
Plums pitted	8@9
Nectarines	7½@9
Prunes 30's to 40's boxed	8
Prunes 40's to 50's	7½
Prunes 50's to 60's	7

Beans Dried.

Wholesale prices are:

Limas per ctl	4.50
Pink No. 1	3.25
Lady Washington	5.00
Small White	6.00
Black eyes	3.75@4.00
Garvanzas	4.00
Lentils California	7.00@8.00
Lentils German	8.00
Bayou	3.50

Nuts.

Almonds IXL per lb	14@15
Ne Plus Uutra	14
Pecans polished	16@17
Peanuts Virginia	6½@7
Peanuts California	5
Peanuts Jap	6@6½
Walnuts No 1	11@12
Chestnuts	13@14

Honey.

Wholesale quotations:

Extracted water white	8
Extracted Light Amber	6½@7
Comb W W	16
Comb white	15
Beeswax	30

Hay.

Prices paid to producers f. o. b. Los Angeles are as follows:

Barley No 1	21.00@23.00
Barley No 2	18.00@20.00
Alfalfa northern per ton	14.00@15.00
Alfalfa local	15.00@18.00
Tame Oat No 1	22.00@24.00
Wheat No 1	19.00@21.00
Wheat No 2	18.00@20.00

Grains.

Wholesale selling price f. o. b., Los Angeles.

Wheat new per ctl	2.10
Kaffir corn	1.85
Corn Eastern sacked	1.80
White oats	1.90
Seed Rye	1.80

Feed Stuff.

Wholesale selling price f. o. b., Los Angeles:

Cracked corn	1.85
Shorts	1.80
Bran	1.65
Cocoanut cake meal	1.85
Cottonseed meal	1.25
Oil cake meal	2.50
Feed meal	1.85
Rolled barley	1.50

San Francisco Markets

SAN FRANCISCO. April 14, 1909.

Butter.

Butter held at last week's quotations till Monday when it advanced a half cent on extras and one cent on firsts. Receipts are large but heavy demand cleans up market and holds steady at advance.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras per lb	23½
California firsts	23
California seconds	21½

Cheese.

California flats fy	15
Firsts	14½
Cal Young America fy	15
Firsts	14
Seconds	11½
Young American Oregon fy	16½
Eastern N. Y. Cheddars fy	17½
Oregon flat fy	15

Eggs and Poultry.

Eggs stand exactly as last week with firm market.

Official quotations of the S. F. Wholesale Dairy & Produce Ex. are:

Fresh ranch extras	23½
Eggs first per doz	22
Eggs second	19½
Eggs thirds	18
Hens per doz	4.50@7.00
Hens extra	8.00@10.00
Young roosters	9.00@10.00
Old Roosters	5.00@5.50
Fryers per doz	8.00@9.00
Broilers per doz	6.00@7.00
Geese per pair	1.50@1.75
Goslings per pair	1.75@2.00
Ducks young	6.00@9.00
Live Turkeys	17@19
Dressed Turkeys	18@22
Pigeons young	2.00@3.00

Live Stock.

San Francisco prices gross weight:

Steers No 1	5¼@5½
Do second quality	4½@5
No 1 cows and heifers	4@4¼
Second quality	3½
Hogs 100 to 140	7@7¼
Hogs 140 to 150	7¼@7½
Rough heavy	4½@5
Calves per lb	4@5¼
Lambs yearlings	5½
Milk lambs	6½@6¾
Wethers No 1 unshorn	5@5¼
Ewes No 1	4½@4¾

Potatoes.

Wholesale market quotations:

River white fy sacks	1.25@1.50
Early Rose	1.85@2.00
River Burbanks	1.35@1.50
Salinas Burbanks	2.00
Lompoc Burbank	1.75@1.90
Sweets per crate	1.65@2.00
Oregons	1.70@1.85
New potatoes	2@3

Vegetables.

Wholesale quotations:

Asparagus per lb	4@5
Bell peppers per lb	25
Brussels sprouts per lb	3@5
Cabbage per box	2.00@2.25
Cauliflower doz	75@1.00
Carrots per sk	65@75
Celery per doz	40@60
Cucumbers per doz	75@1.50
Chili peppers per lb	20@25
Egg plant per lb	20@25
Green peas per lb	4@8
Mushrooms per lb	12½@25
Marrowfat squash per ton	20.00@25.00
Squash cream per box	50@65
Onions green per box	60@75
Rhubarb per box for bay	1.00@1.65
Rhubarb Southern per box	1.00@1.50
String beans	10@12½
Tomatoes box Mexicans	75@1.25
Wax Beans	10@12½
Garlic new	7@9

Onions.

Onions Oregons	2.25@2.40
Australian Brown	4.00@4.25
Texas Bermudas per crate	1.85@2.00
New green per box	25@65

Citrus Fruits.

Navels fy	2.25@2.75
Choice	1.75@2.25
Tangerines per crate	1.25@1.50
Mandarins	75@1.00
Grapefruit seedless	1.75@3.00
Grapefruit seedlings	1.00@1.75
Lemons ch	1.50@1.75
Lemons fy	2.25@2.75
Limes	8.50@9.00
Limes Cal sm box	1.00@1.25

Fresh Fruits.

Bellflowers	1.00@1.35
Bellflowers No 2	50@90
Spitzenberg	1.25@2.00
Newton Pippins	1.35@1.75
Ben Davis	1.25@1.65
Winter Nellis	1.25@1.50
Other Kinds	75@1.00
Strawberries L. A. per crate 15 bkt	
Pineapples per doz	2.00@4.00

Dried Fruits.

Prunes 4-size basis	2½@3
Santa Clara	3¼@3¾

½c premium for larger sizes

Apricots per lb; Choice 8½; fancy 7@10.

Peaches—Choice 4; fancy 6½

Apples evap	6@7
Pears	4@8
Figs	2½@4
Nectarines	5@6
Pitted Plums	7@8

RAISINS—1908 crop, f. o. b.: Clusters and Layers, 20-lb bxs—Imperial Clusters, 6-crown, $2; Dehesa Clusters, 5-crown, $1.75; Fancy Clusters, 4-crown, $1.40; London Layers, 3-crown, $1.15; do, 2-crown, $1.05. Seeded, 25-lb bxs—Fancy bulk per lb, 5¼c; Choice bulk, 5c. Loose Muscatels, 50-lb bxs—Standard, 4-crown, 4c; do, 3-crown, 3¼c; do, 2-crown, 2¾c; Seedless, 3½c. Seedless Sultanas—Unbleached, 4¼c. Thompson Seedless—Unbleached, 4¾c. Dried Grapes, 2½c.

Nuts.

Walnuts S S No 1	9½
Walnuts No 2	6
No 1 Standard	8½
No 2 Standard	4½@5
Almonds Nonp	11½
Almonds IXL	10½@11
Ne Plus Ultra	9½
Drakes	8½@9
Chestnuts	9½@14
Peanuts Cal	5½@6

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

Beans Dried.

Limas	4.10@4.25
Pink	3.00@3.15
Small white	5.25@5.50
Large white	4.25@4.40
Black eyes	3.25@3.50
Red Kidneys	3.75
Garvanzas	3.00
Bayo	4.50
Horse beans	2.10
Cranberry	4.00

Hops.

Hops 1908 crop	6@8½
Old Crop	1@3½
1909 crop contracted for at	10@12

Honey.

White comb	15½@16
Light Amber	9@10
Exracted W W	7@8
Extracted light amber	5½@6
Beeswax No 1 per lb	28@30
Beeswax No 2 per lb	23@25

Hay.

Arrivals for the past six days have been 2560 tons, being an increase over the last week's arrivals. Although quite a bit more has come in, our market continues strong, and the demand has practically equalled the supply day by day. As stated in our last report, quite a feature of our market now is the appearance of medium and poorer grades, which are being baled up out of the stacks and out of barns, as the farmers realize that they will not need it by reason of the approaching crop. This grade of hay, however, is not doing well upon our market. Quite a bit of it has bunched in here lately, and sells at very much under the current quoted rates for sound No. 1 hay of better grade coming out of the warehouses. All No. 1 grades sell readily at high prices, but the medium qualities, and especially those that are touched a little with damage, drag very slowly.

Reports from all over the state are to the effect that the season will probably be late, although the excellent weather of the past week has stimulated things wonderfully. Roads are drying, and conditions are such that we should have quite heavy arrivals for the next few weeks. The interior demand is reduced, however, as all available stock is turned out where pasture is accessible, and in many cases the green hay is being cut to save the enormous expense incidental to the present high range of prices.

Alfalfa is becoming weak, as the season is shortening, and should sell at quite a bit lower prices in the immediate future. Straw is in light supply, and sells at previous quotations.

Choice wheat hay per ton	24.00@26.00
Choice wheat hay per ton	24.00@26.50
No 1 wheat or wheat & oat	21.00@24.00
No 2 wheat or wheat & oat	17.00@20.00
Choice tame oat	23.00@25.00
Other tame oat	20.00@23.00
Wild oat	19.00@23.00
Stock hay	11.50@13.00
Alfalfa	16.00@18.50
Straw per bale	60@80

Grains.

Wheat No 1	1.95@2.00
Barley	1.45@1.50
Corn small	1.80@1.85
Oats white	2.00@2.10
Oats gray	1.90@2.00
Rye new crop	1.80@1.85
Corn Egyptain	1.60@1.65
Alfalfa seed, Cal	16@19
Alfalfa seed, Utah	18@19
Mustard yellow	5¾@6
Millet	3@3½
Broom corn seed per ton	23.50

Feed Stuff.

Bran per ton	29.00@30.00
Feed cornmeal per ton	37.00@38.00
Cracked corn per ton	38.00@39.00
Rolled barley per ton	30.00@31.00
Oil cake meal per ton	38.50@40.00
Cocoanut cake per ton	25.00@26.00
Middlings	33.00@35.00
Shorts	31.00@32.50

Citrus Market

LOS ANGELES, April 14, 1909.

The heavy shipments of oranges of the last two or three weeks have been somewhat in excess of the keenest demand and have resultd in a slight easing of the market. It can not be said that the prices have been cut materially but some slight concessions have been necessary in order to unload the large stocks in some markets. Slight slowing up of shipments have been called for and in fact will be forced from this time on because of Orange county and some other sections having practically cleaned up on navels. This will call for a material shrinkage to meet the slighter demand which will be occasioned by the small fruits which will enter the Eastern markets soon.

Lemons show no material change other than, if anything, the market is stronger than a week ago. The demand is good and gives promise of continuation, or if anything growing better as the season advances.

Shipments.

Shipments of oranges to date since November 1, aggregate 15,378; lemons

Nitrate of Soda

In Original Bags

NITRATE AGENCIES COMPANY

64 Stone Street, New York
Keyser Building, Baltimore, Md.
36 Bay Street, East, Savannah, Ga.
305 Baronne Street, New Orleans, La.
140 Dearborn Street, Chicago, Ill.
1103 Temple Bldg., Toronto, Canada
San Jose, Cal.
321 Stimson Block, Los Angeles, Cal.
603-4 Oriental Block, Seattle, Wash.

2,238, or a total of 17,616 cars. To same date last year oranges 15,097; lemons 1,955, or a total of 17,052.

NEW YORK, April 9.—Eighteen cars oranges and one car lemons sold. The market is very strong and higher on account of the light offering of navels. Weather clear, cool.

NAVELS—	Average.
Pointer ACG Ex	2.55
Hunter do	2.60
Alhambra ST Ft Ex	3.00
Flamingo California Cit Union	2.85
Cerrito L V W Brown	3.65
Swastika do	3.15
Elephant OG Cash Assn	3.25
Gold Buckle RH Ft Ex	3.10
Lochinvar do	2.95
Jameson QC Ft Ex	3.05
BLOODS (Halves)—	
Elephant	1.65
Southland Beauties	1.45
Vista Bonita	1.45
Royal Knight	1.30
BLOODS (Boxes)—	
Vista Bonita	3.05
La Mesa	2.85
Sweetheart	2.75
Yankee Doodle	2.50
TANGERINE (Halves)—	
Mahala	1.70
Lion Head	1.35
Orchard	1.55
LEMONS—	
Rialto Girl Growers Ft Co	2.50
do choice Growers Ft Co	2.25

BOSTON, April 9.—Ten cars sold. It is raining. Market is unchanged.

NAVELS—	Average.
Whittier ST Ft Ex Whittier	2.45
Swallow OK Ft Ex	2.55
Pine Cone SB Ex Highland	2.80
Laurel QC Ex Corona	2.75
Bridal Wreath RH Ex Redlands	2.70
Lochinvar RH Ex E Highland	2.80
Extra Choice ST Ex Rossmoyne	2.85
Alhambra ST F Ex E Alhambra	2.80
Pine Cone SB Ft Ex E Highland	2.80
RUBY BLOODS—	
Extra Choice ST Ex Rossmoyne	2.55
LEMONS—	
Extra Choice ST Ex Rossmoyne	2.45

PITTSBURG, April 9.—Eight cars sold. Weather favorable. The market is steady on navels and lemons.

NAVELS—	Average.
Orchard National Oronge Co	3.25
Mutual Redlands M O Co	2.55
Homegrove SA Ex Claremont	2.70
Floral SB Ex Colton	2.50
SEEDLINGS—	
A-One Peycke Co	2.35
Deal do	2.20
LEMONS—	
Naralimo Sparr Ft Co	2.10
Senorita do	1.75
Circus do	1.85

CINCINNATI, April 9.—Weather cool. Market declining. Three cars navels, two cars seedlings, one car bloods and one car lemons sold.

NAVELS—	Average
Golden Beauties	2.70
Don Quixote ST Ex E Alhambra	2.35
Rivera ST Ex Rivera	2.50
Wedding Bells	2.50
SEEDLINGS—	
Vista de Robles, Hammond O	2.50
Ibex ST Ex Rivera	2.25
Vista de Robles Hammond O	2.45
LEMONS—	
Las Fuentes Crocker-Sperry	1.25
Montecito do	1.00

CLEVELAND, April 9.—Snowing. Market steady. Five cars sold.

NAVELS—	Average.
Clover Redlands OG Assn	3.00
Golden Rod Highgrove OG Assn	2.90
Truth Riverside Ft Ex Riverside	3.20
Braeside do	2.90
RUBY BLOODS (Halves)—	
Gavilan Riverside Ft Ex Riverside	1.45

ST. LOUIS, April 9.—Cool. Market steady. Nine cars sold.

NAVELS—	Average.
Sunset SS Ex Orange	2.35
Newsboy RH Ex Redlands	2.45
Tally-ho SB Ex Rialto	2.55
Colombo ST Ex Fullerton	2.65
Golden Orchard Ind Ft Co	2.85
Lone Palm McGowan & W	2.85
Golden Gate Redlands OG Assn	2.75
HOMOSASSAS—	
Tally-ho SB Ex Rialto	2.65
Big R do	2.20
LEMONS—	
Fountain Speich & Co	2.20
Circus Sparr Ft Co	2.00
Naralimo do	2.15
Senorita do	1.90

NEW YORK, April 12.—Fifty cars navels, three cars lemons, two cars seedlings, one car bloods and one car Jaffas sold. The market opened strong, but closed weak, and lower on navels. Weather clear, favorable.

NAVELS—	Average.
Orchard, National Orange Co	3.40
Standard do	2.95
Lion Head I. L. Lyon Sons	3.10
Tiger Head do	2.85
Euclid Euclid Ft Co	2.75
Producers Redlands OP Co	2.65
Mt Harrison Sewall	2.90
Rialto Girl Growers' Ft Co	2.70
Slover Mt Growers' Ft Co	2.65
Alpha Riverside Ft Co	2.75
Aurora E Peycke Co	2.95
Cerrito L V W Brown	3.15
Swastika do	3.15
Elephant OG Cash Assn	3.30
Plain Ends do	2.80
Blue Baner Sutherland Ft Co	3.15
Native do	2.95
Golden Flower Redland OG Assn	2.65
Crafton do	2.95
Solano Stewart Ft Co	2.60
S S do	2.65
Signal do	2.55
Red Globe Riverside Ft Ex	2.90
SEEDLINGS—	
Titus Ranch San Marino G P A	2.70
El Toreador do	2.50
Arcadia ST Ft Ex	2.40
Burro do	2.25
MEDITERRANEAN SWEETS—	
Alhambra ST Ft Ex	2.65
Don Quixote do	2.55
ST MICHAELS—	
Alhambra SA Ft Ex	2.80
Old Mission C C Chapman	2.85
BLOODS—	
Eagle Head I L Lyons Sons	2.80
Slover Mt Orange Growers' Ft Co	2.70
Mariposa Cal Citrus Union	2.85
TANGERINES—	
Homer (½s) QC Ft Ex	1.25
Mahala (½s) L V W Brown	1.40
Lion Head (½s) I L Lyon Sons	1.35
Euclid (½s) Euclid Ft Co	1.55
LEMONS—	
Knight	1.40
Independent Growers' Ft Co	2.95
Bridal Veil Limoneira Co	1.70

CLEVELAND, April 12.—Weather cool. Market is lower. Eight cars sold.

NAVELS—	Average.
Conqueror Independent Ft Co	2.70
Golden Scepter Rialto Orange Co	2.60
Gold Buckle R-H Ex E Highland	2.95
Royal Knight R-H Ex Redlands	2.90
Crocus San Bernardino Ex Yerkes	3.05
Cosmos do	2.95
Red Globe Riverside Ex Riverside	2.95
Citrus Belle Independent Ft Co	2.50
California Orange Riv Ex Riv	2.30

ST. LOUIS, April 12.—Raining. Market weak on account of the weather. Twelve cars sold.

NAVELS—	Average.
Orchard National Orange Co	3.00
Golden Scepter Rialto Orange Co	2.30
Greyhound San Antonio Ex Clarem	2.40
Belt R-H Ex E Highland	2.55
Fiesta Riverside Ex Riverside	3.00
Pond Lily do	2.60
Liberty Escondido Ft Gr Assn	2.30
Standard National Orange Co	2.90
LEMONS—	
El Modena Sunset Ex El Modena	1.90
Belt R-H Ex E Highland	2.00
GRAPEFRUIT—	
Liberty Escondido Ft Gr Assn	2.50
Eldorado	2.25

PITTSBURG, April 12.—Thirteen cars sold. Market easier on large sizes of navels. Weather favorable.

NAVELS—	Average.
Naralimo Sparr Ft Co	2.50
Highlander Highland Ft Gr Assn	2.75
Golden Rod Highgrove Or Gr Assn	2.65

BOSTON, April 12.—Seventeen cars sold. Weather favorable. The market is strong and higher.

NAVELS—	Average.
Elephant Orange Growers C Assn	3.00
Rose Redlands Orangs Gr Assn	2.90
Clover do	2.80
Aurora E Peycke Co	2.75
Producers Redlands Or Packing Co	2.50
Del Oro Sparr Ft Co	1.70
Quail OK Exchange	2.70
Lily Queen Colony Ex Corona	2.70
Lochinvar R-H Ex E Highland	2.70
Fiesta Riverside Ex Riverside	3.00
Orchard National Orange Co	3.00
Standard do	2.85
Niagara Stewart Ft Co	2.80
Square Deal	2.65
Artillery California Citrus Union	2.50
LEMONS—	
Bridal Veil Limoneira Co	1.80
White Cross	1.60
Whittier Semi-Tropic Ex Whittier	2.75
Pico	1.55
Cosmos San Bernardino Ex Yerkes	2.25
BLOODS (Half Boxes)—	
Elephant Orange Gr Cash Assn	1.45
Quail OK Exchange	1.35
Coyote	1.25

CINCINNATI, April 12.—Weather favorable. Market steady. Two cars of navels, one of seedlings and one of lemons sold.

NAVELS—	Average.
Liberty Escondido Ft Gr Assn	2.35
Coyote OK Exchange	1.35
Greyhound San Antonio Ex S Dim	2.35
Eldorado Escondido Ft Gr Assn	2.35
Blue Jay OK Exchange	1.00
SEEDLINGS—	
Solano Stewart Ft Co	2.60
Rescue do	2.40
GRAPEFRUIT—	
Liberty	1.60
Eldorado	1.35
TANGERINES (Half Boxes)—	
Liberty	1.30
Pet	1.00

For Mehring Foot-Power Milking Machines see O. J. Weber Co., 225-227-229-231 East Sixth St., Los Angeles, Cal.

Cream Separators, all sizes, all prices. O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

"Success" Fireless Brooders

50 Chick $2.50
150 Chick $5.00

We Pay Freight

Will raise every chick, send today for free circular; tells about this wonderful brooder.

No Lamp, No Smoke, No Odor, No Danger of Fire

We pay freight. I sell on trial, if not satisfied I will refund you every cent. Order now. I can ship the day I get your order.

E. E. McClanahan
112 E. 8th, Los Angeles

Notice of Removal

Mellus Bros. Manufacturers of Fumigating and Lemon Curing Tents

Irrigating Hose, all sizes. Prices and samples quoted upon application. Write your wants. Wagon Covers, Hay Covers, and Canvas Covers of every description.

MELLUS BROS. & CO. Phones—Home, F4871: S. S., Main 3500 305-307 E. Fourth Street, Los Angeles

Sweet Potato Plants

All kinds of Sweet Potato Plants in any quantity. $2 per thousand.

W. W. BURFORD

740 Glendale Ave., Glendale, Cal. Home Phone, 263

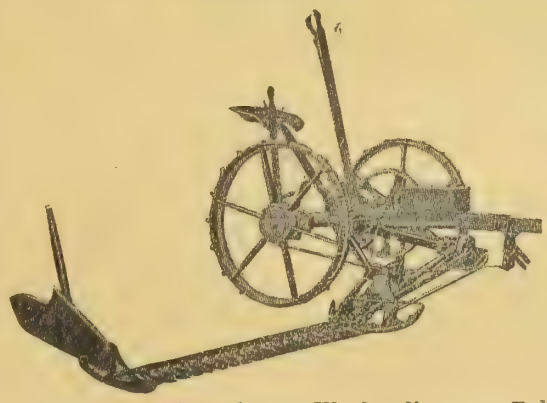
EUCALYPTUS

We have all the leading varieties

VIGNOLO EUCALYPTUS NURSERY, Anaheim, Cal.

The Plano Line

Of Haying and Harvesting Machinery



is one of the leading lines on the market. The Plano Mower has a number of improvements not found on other leading machines. All we ask is a chance to show up our line and then let you judge for yourself as to the quality compared with others.

We are Headquarters for Haying and Harvesting Machinery. We sell the Plano line of Mowers, Rakes, Binders, Headers, Harvesters and The Eagle Hay Press. The Columbia Ann Arbor Power Press. Our Famous Triumph Push Rakes and stackers. We handle more Bale Ties than any three of our Competitors.

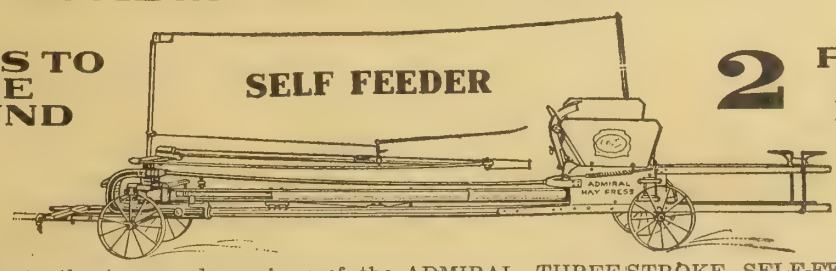
L. M. Davenport Co.
110-112 No. Los Angeles St., Los Angeles

AN ADMIRAL WITHOUT COST

3 FEEDS TO THE ROUND

SELF FEEDER

2 PROFITS IN HAY BALING



The difference in the increased earnings of the ADMIRAL THREE-STROKE SELF-FEED PRESS more than pays for the press in one season, at a conservative estimate of 2½ tons per day over the old style two-beat, foot feed press, besides the ease of labor on both men and team, and better work. Let us figure a little to convince you.

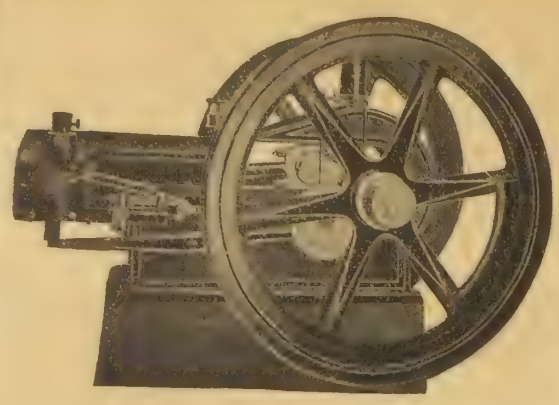
2½ Tons per day for one week, 15 tons at $1.50 net	$ 22.50
One month's earnings over the other press (26 days)	97.50
On an estimate of five months' work out of the year	487.50

The above gain with the ADMIRAL more than pays for the press.

New Century Hay Presses, Specially Built, Season of 1909, $250. All kinds of Wagons, Buggies, Implements, Tools, etc. Catalogues upon request.

Capito Carriage Company

Cut Rate Carriage and Implement Dealers, Los Angeles, California



7 to
5000 H. P.

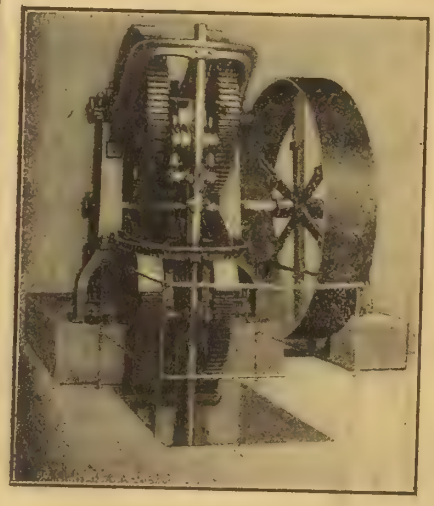
Install
a
Western
You'll
Smile and Smile and Smile

Least Fuel
Most Water
Fewest Repairs

Western Gas Engine Co.

Factory and Main Office:
908-32 N. Main St., Los Angeles, Cal.
Northern Branch: 22 First St., San Francisco, Cal.

The Smooth Running, Noiseless Pomona Deep Well Pump



It is thirty to fifty per cent more efficient than any centrifugal pump ever made. No high speed bearings to cut out. All breakages and rod troubles eliminated.

This is the only pump you can afford to buy if you consider your own interests. Hundreds of satisfied users testify to this.

Used by the best water companies who know what a good pump is.

Send for a catalog or what is better come to POMONA and let us show you some of these plants in operation.

POMONA MANUFACTURING CO.
POMONA, CALIFORNIA

THE Latest Deep Well Turbine Pump

Guaranteed to deliver from 100 gallons per minute upwards, depending on the diameter and capacity of well, from a depth of 50 to 300 feet below the surface. Can be either belt driven or direct connected to electric motor as occasion requires.

Write for Catalogue 46B.

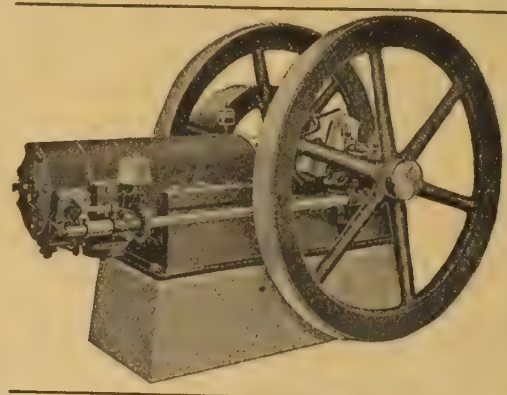
Byron Jackson Iron Works

A deep well pump that has no valves or plungers to wear or get out of order, no gears, consequently no noise or breaking of teeth.

Compact, durable, always primed and ready to operate, constant flow, hence increased capacity of well.

This type of pump is fast taking the place of Vertical Steam, Deep well Plunger and Propeller Pumps.

Main Office and Works:
Carlton Station
West Berkeley, Cal.



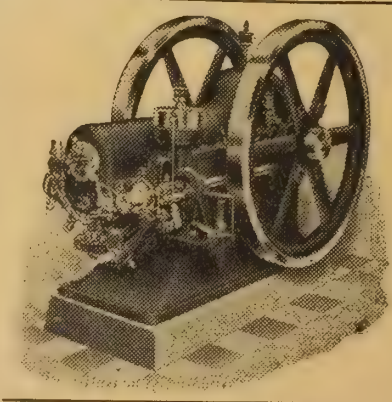
HERCULES Distillate Engine

Heavy, strong and simple in construction

The Right Engine at the Right Price

Horizontal and Vertical; all sizes. Buy direct from the manufacturer and save the agent's commission. Send for our new Catalogue C.

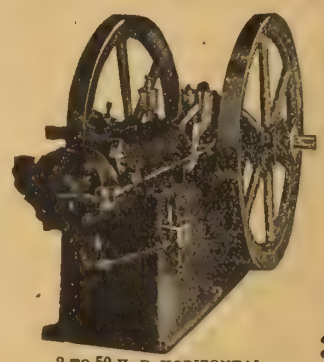
The Hercules Gas Engine Works
351 Market St., San Francisco
Telephone Douglas 3630



Another New Gas Engine

Is amongst us and if you are in need of power you should investigate this one. You will find that it possesses the most desirable features of all the old timers and the price is right. Plenty of catalogues for distribution.

Henshaw-Bulkley & Co.
262-264 So. Los Angeles St., Los Angeles

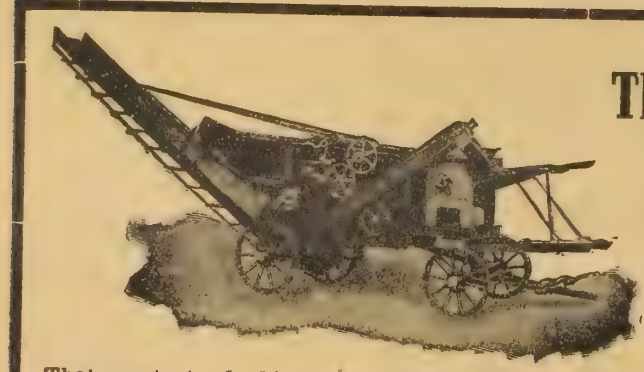


2 TO 50 H. P. HORIZONTAL

STOVER GAS ENGINES

The simplest and the best. We have had long experience installing pumping plants. We know our business. See us before you buy. 2 to 50 H. P.

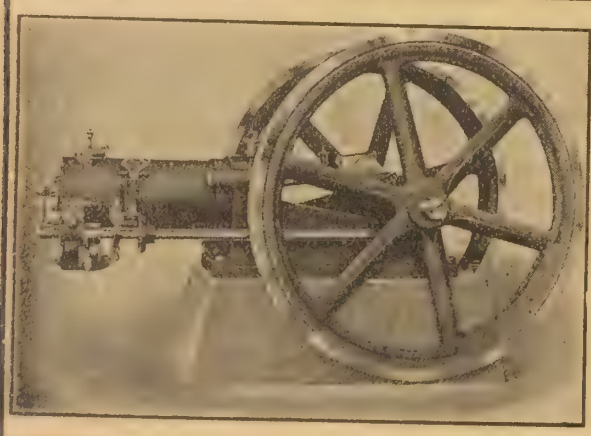
LIVINGSTON & LEE
352 So. Los Angeles St., Los Angeles, Cal.



A
Threshing Machine For The Farmer

That wants to do his own threshing—and not have to wait until the other fellow is ready to do it for you. More than pay for itself the first season. Guaranteed to thresh the grain clean. Can be operated with 4-H. P. sweep, steam or Gasoline Engine. Stock shipped from Sacramento. Write me for large descriptive circular, prices and terms.

GEO. W. FOOTT, 117 Grand Ave., Portland, Oregon



DOAK GAS ENGINES

Simplest and most economical. Use Gas, Gasoline or Distillate.

Stationary, Portable
Hoisting and Marine

All sizes from 3 H. P. to 50 H. P. carried in stock.
Write for our catalogue "C".

Doak Gas Engine Co.
7-9 First St.
San Francisco

California Cultivator

Published Weekly — One Dollar a Year

Los Angeles — April 22, 1909 — San Francisco

Stanford University and City of Mayfield

Mayfield is One of the New Towns of the State and is Located but a Short Distance from Stanford University. This is Said to be One of the Most Attractive Spots on San Francisco Peninsula

Courtesy of Out West Magazine.

Disks Merely An Excuse

TRADE Sharples MARK 29 Yrs

Properly built dairy cream separators need neither disks nor other contraptions inside the bowl. **This is absolutely proven by the fact that the world famous Sharples Dairy Tubular Cream Separators are built without such bowl contraptions and yet skim two to ten times cleaner, skim faster, run smoother, turn easier and wear longer than any disk or other style of separator made by any of our competitors.**

Why the Other Fellows Use Disks

Tubulars are entirely different from all other separators. **Tubular construction is the only mechanically and scientifically correct method of separator building.** All other separators are still built in the old time, incorrect "bucket bowl" way. They have short, squatty "bucket bowls," set above their bearings and fed through the top. "Bucket bowls" are practically useless without disks or inside contraptions. Other makers can't build Tubulars, because our patents prevent them. So they stick to the old time way—use disks or other bowl contraptions because their machines are no good at all without them—and offer them to you as an excuse for buying their antiquated, complicated, inferior machines.

Sharples Dairy Tubular

We Don't Think You Want Them

We don't believe you want a work making, uncleanable, butter tainting, expense creating "bucket bowl," filled with disks or other contraptions. If you don't, then get a Tubular. But if you do—remember that "bucket bowls" are all about alike—all in the same class—as is confessed by the maker of the "original" disk filled separator. This maker admits that a catalogue house has been building a disk separator, like his, for a number of years and he now advertises a patent infringement suit against this catalogue house machine and asks the Court to make the catalogue house stop. The real trouble with our disky friend is that the farmers have learned what he now admits—that anybody can build disk separators, and build them cheap, and that the catalogue house separator is the same as the old disk separator. Farmers are wise enough to know that any man or woman who will put up with the inconvenience and expense of a disk separator had better buy it as cheap as possible, then when they throw it away they haven't lost so much. Several new disk separators are more modern and satisfactory than the much advertised "old original" and sell for half.

If you want your money's worth—want your separator to last a life time—don't get any disk machine—get a Sharples Tubular. Most farmers are getting Tubulars. Write for catalogue No. 260.

The Sharples Separator Co.

West Chester, Penna.

Toronto, Can. **Winnipeg, Can.** **Chicago, Ill.** **Portland, Ore.** **San Francisco, Cal.**

WILLIAMS' GOOSE-NECK CULTIVATOR

Patent applied for
ARNOTT & CO., General Distributers,
112 So. Los Angeles St., Los Angeles, Cal.

Especially adapted for citrus orchards. Sizes 7 to 14 ft. Lightest draft. Write today

The following is a sample of the unsolicited testimonials received regarding the Williams Goose-Neck Cultivator:

Merle, San Diego County, Cal., March 25, 1909.

Arnott & Company,
Los Angeles, California.

Dear Sirs:—You may recall that I recently purchased one of your Williams Goose-Neck Cultivators. I wish to say that I am exceedingly well pleased with it. In fact, as I told Mr. Jones, your representative in Oceanside, I would not take $500.00 for it if I could not get another. This is not an exaggerated statement, I mean it literally. In this section we do not have irrigation and everything depends on proper cultivation, so that good tools are very important. There are three points in which the Williams Goose-Neck Cultivator surpasses all other cultivators which I have seen, viz:

First. The draft is very light. My two horses weigh 900 lbs. each and they have no difficulty in drawing the 7 ft. cultivator.

Second. The Williams Goose-Neck Cultivator stirs the soil well without exposing the subsurface, thus preventing the escape of moisture.

Third. The cultivator being of low construction, one can cultivate under the trees as easily as harrow.

I was showing my cultivator to a neighbor the other day and had him take it home to try it. The use of it for half an hour so thoroughly convinced him of the merits of the tool that he has, through Mr. Jones of Oceanside, given you an order for one-half dozen cultivators.

Messrs. Williams & Son of Orange certainly deserve great credit for inventing the Goose-Neck Cultivator.

Sincerely yours

LOUIS C. LUHR.

WILLIAMS & SON, Mfrs., Orange, California

Olds Complete Power Spraying Outfit

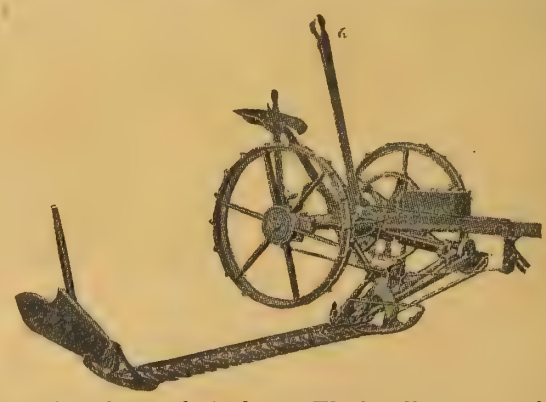
Equipped with their air-cooled engine, which is a great advantage, making it much lighter and easier to operate. Send for circular and Price List 6802 to

The Compressed Air Machinery Company

Dealers in all Kinds of Machinery
34 to 40 Jessie St., San Francisco

The Plano Line

Of Haying and Harvesting Machinery



is one of the leading lines on the market. The Plano Mower has a number of improvements not found on other leading machines. All we ask is a chance to show up our line and then let you judge for yourself as to the quality compared with others.

We are Headquarters for Haying and Harvesting Machinery. We sell the Plano line of Mowers, Rakes, Binders, Headers, Harvesters and The Eagle Hay Press. The Columbia Ann Arbor Power Press. Our Famous Triumph Push Rakes and stackers. We handle more Bale Ties than any three of our Competitors.

L. M. Davenport Co.

110-112 No. Los Angeles St., Los Angeles

Kill Insects

ON PLANTS **ON POULTRY**

With

Devils

Dust

Devils Dust is guaranteed to Kill all kinds of vermin on poultry and insects on plant life.

1 lb trial package 40c postpaid.

HENRY ALBERS CO., 534 SOUTH MAIN LOS ANGELES

Notice of Removal

Mellus Bros. Manufacturers of Fumigating and Lemon Curing Tents

Irrigating Hose, all sizes. Prices and samples quoted upon application. Write your wants. Wagon Covers, Hay Covers, and Canvas Covers of every description.

MELLUS BROS. & CO. Phones—Home, F4871: S. S., Main 3500 305-307 E. Fourth Street, Los Angeles

California Cultivator

Vol. XXXII—No. 16 Los Angeles, California, Thursday, April 22, 1909 Subscription $1 a Year

Eat Raisins on Raisin Day---April 30

If You Don't Know How to Eat Them See Rocipes on Household Page This Issne. Also Some Interesting Facts Below on the Raisin Industry

EAT RAISINS is the slogan, all over the United States for next Friday, April 30; eat them not because they are a luxury, because they taste good, nor even because the Raisin Committee, which represents the grower, asks you to, but because they are nourishing food. In the leaflet sent out by the committee is the following quotation from a Department of Agriculture bulletin:

One pound of California raisins represents a food value equal to each of the following:

Six pounds of apples.

Five pounds of bananas.

Four and one-fourth pounds of potatoes.

One pound of bread.

Four pounds of milk.

Four and three-fourths pounds of fish (edible portion.) Two pounds of eggs.

One and one-third pounds of beef.

An important medicinal value of raisins is in their laxative effect.

In the same leaflet is the following statement:

"The truth is not commonly known that raisins are a food of the highest quality—50 per cent more nourishing than meat and far more healthful. Raisins are indeed the greatest health food ever produced, but while used merely as a sweetmeat, a luxury, their real value has remained unknown.

"The sugar of the grape, matured and perfected in the raisin is, by scientific analysis and experience, superior to all other. It is required by the human system in moderate quantities, especially by children. For them, as for the adult, raisins are far more healthful than any form of confectionery.

"The well-grown and well-cured California raisin is the most delicious and healthful food that a bountiful Providence has bestowed upon mankind. It should be found upon every table daily in liberal quantities."

This advertising campaign should lead to vastly greater consumption and reduce the 20,000-ton holdover crop yet in California growers' hands, possibly clear the field so as to give the next crop a fair chance when it is marketed next fall.

In this connection a few figures as to the raisin production of the world may be of value. The following is from facts gathered by Mr. George Robertson of Fresno:

Raisin Crop of the World in 1908.

Country.	Pounds.
Spain, raisins	52,896,000
Sultanas, (Smyrna, Asia Minor)	116,480,000
Sultanas, Greek	6,720,000
Commonwealth of Australia—	
Victoria, raisins	10,990,224
Victoria, Sultanas	3,167,360
South Australia, raisins	1,805,776
New South Wales, raisins	100,512
South Africa, (Cape Colony)	2,000,000
Total foreign raisins	194,060,272
California raisins	100,000,000
Total	294,060,272

In addition to this, two hundred and ninety million pounds of raisins and Sultanas, there must be added:

Currants.

Country.	Pounds.
Greece	369,600,000
South Australia	2,607,472
Victoria	1,313,760
Total currants	373,521,232

The acreage in vines of all kinds is increasing in all parts of Australia, and in a few more years Australian growers will probably be able to supply more than enough for their home consumption, both of raisins and wine. If any growers

(Continued on Page 472.)

Can More Money Be Secured for Prunes?

A Look at the Prune Situation, with Extracts from the Report of the Committee of Fifty

THE Prune growers of Santa Clara Valley are swinging into line with the co-operative fruit growers of the state. At the meeting held in San Jose some time since the determination to co-operate was almost unanimous, and the good work continues.

At that meeting Mr. J. O. Hayes presented the report of the Committee of Fifty. Mr. Hayes spoke of the former five cent price which even in face of two consecutive years of short crops has gone down till the grower is compelled to accept two cents or less.

The report then continues:

"Something must be wrong with the prune business or present conditions would not be. To find these wrong conditions and their remedy the Committee of Fifty was called together. It has thoughtfully considered existing conditions and means for correcting them, and at its last meeting unanimously agreed upon a plan that will, it is believed, bring the prune business to a stable and prosperous condition. This plan we are about to present to you.

Cause of Trouble.

"Before a remedy can be successfully applied the cause of the trouble to be corrected must be found. The Committee of Fifty therefore first sought to find the cause of the existing prune troubles. We finally concluded that lack of consumption was the primary cause. There are many wrong conditions that have contributed to produce this cause and these have been fully considered. Among these may be mentioned the late financial panic, now happily past, though many of its effects are still with us; defective and improperly packed fruit, which has turned many customers away from prunes; bad methods of marketing the fruit which have resulted in a constantly declining price that has brought loss to nearly everyone who has handled prunes and disgusted dealers almost to the extent of causing them to refuse to handle prunes.

"All these conditions and others have been considered and we have concluded that as growers we must deal with these conditions as business men. It is useless for us to rail at the packers, brokers, wholesalers and retailers. All these men are human and they will act as their interests seem to them to require, without reference to what we say about them. The prunes are ours. If we have not interest enough in our product to see that it is properly handled and marketed we need not expect others to do it for us and we have only ourselves to blame if we find our market destroyed and our product of little value.

Must Do Two Things.

"Two things we must do if we are to make prune raising a permanently profitable business. We must have the prunes properly cured and packed for shipment and then we must see that they are eaten. It is a comparatively easy matter to correct any wrong curing or packing conditions that may exist. The all-important thing with us, as growers, is to have our prunes eaten If the consumer were buying and eating our prunes all the troubles that have followed the prune from the box to the retailers' hands would disappear. The trouble with the prune market is to be found primarily in the fact that the prune has not been eaten. If the consumer were eating prunes he would be buying them from the grocer. If the grocer were selling to the consumer he would be ordering from his wholesaler. If the wholesaler were receiving orders for prunes he would buy prunes to fill his orders and if the wholesaler were buying from the packer, the packer would be chasing the grower to buy prunes to ship to the wholesaler, and the grower and those who handle prunes would soon forget their troubles and all would make money and everyone who handled prunes would praise them instead of ridiculing them.

How to Get Prunes Eaten?

"The important question to us growers is, therefore, how can we get our prunes eaten? Assuming that our prunes are properly prepared for shipment to the trade (and we must see that this is done) we must address ourselves to two things. We must see that our prunes are sold to the consumer at a reasonable price and that the consumer is made to know the desirable quality of the prune and how to prepare it to be eaten and that he is induced to buy it. If this can be accomplished you will all agree that our troubles as prunegrowers will be over. Can we induce the consumer to buy prunes and eat them? We can. How?

"First—Dry them and pack them properly so that they will be in attractive condition and not rotten when offered to the consumer.

"Second—Print recipe books telling the cook

(Continued on Page 472.)

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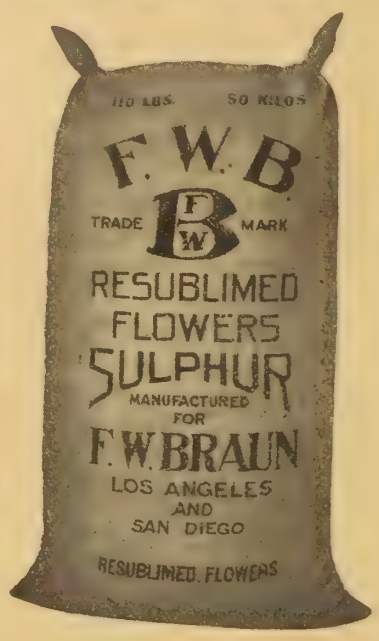

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With the Citrus Growers

REFRIGERATION CAR.

MUCH speculation has been aroused by the appearance of a car of new design which has occupied a sidetrack north of the plant of the National Ice Company for the past few days. This is the first experimental refrigeration plant of the Department of Agriculture and promises to be a most important factor in solving one of the greatest problems in the shipment of citrus fruits—precooling of fruit before shipment.

Since its arrival here the refrigeration car has been gotten in condition for making precooling tests. Water has been piped to the car from the National Ice Company's factory and the car has been placed where it can conveniently be connected with cars that have been loaded for shipment.

Blasts of cold air, driven into the loaded car through a 24-inch pipe from the refrigeration plant will, it is believed, cool the fruit so thoroughly that the car can cross the continent with its initial icing. The car was built to furnish refrigeration for the government's experimental work in any part of the United States, where investigations may be in progress. It can be attached to any building or loaded car along the sidetrack. Data will be thus obtained at the end of the season, showing what effect the precooling has on fruit which has been cooled down to the different degrees of temperature, and the time required to complete the precooling process with the different volumes of air passing through it.

Exact engineering data will be obtained on questions of refrigeration of fruit before shipping. The work has been hampered heretofore by lack of refrigeration facilities, and it was decided to start the experiments in California, because of the hearty co-operation obtained from all interests benefitted here.

Experimental work will be conducted at the close of the orange season in Southern California in deciduous fruits in Northern California. Later the car will be taken east and experiments will be conducted in the precooling of peaches and vegetables.

The refrigerator car was designed, all the details worked out and its building and equipment supervised by S. J. Dennis, expert in refrigeration in the fruit transportation and storage investigations of the Bureau of Plant Industry, Department of Agriculture. Its chief purpose is to secure refrigeration for the government experiments at such points in the country where adequate refrigeration cannot now be secured. A temperature of 16 degrees has been obtained in the coilroom in experimental runs.

This movable plant is something entirely new in the refrigerating business. One-half of the car contains the machinery while the other half is an insulated coil-room containing about 5200 feet of 1¼-inch extra heavy continuous welded ammonia coils arranged in eight coils, each coil complete with separate ammonia expansion valves, and separate ammonia stop valves. In the other half of the car the machinery is located. There is a 35-H.P. kerosene oil engine for the source of power; this engine by various belts and countershafts drives a 12-ton ice machine, a 2 K. W. generator for lighting and power, a 45-inch blower for blowing the air to be cooled over the coils, a centrifugal brine pump and a motor-driven triple pump.

This room also contains a 42-inch double pipe ammonia condenser, two large liquid ammonia receivers, an oil intercepter for the ammonia, water storage tanks, speed changing countershaft, and the complete piping and fittings for kerosene, water, ammonia and oil lines.

An Orange Grove in Sanger.

This plant is installed in a space practically 20 feet long by 7 feet wide and 6 feet 6 inches high, so it can be readily understood the difficulties to be encountered in undertaking to place such a large amount of apparatus in such a small space.

As a means of obtaining data on the refrigerator supply of the car plant a large calibrated ammonia reservoir has been fitted up in the car for measuring the ammonia circulated in the car. Provision also is made for weighing-tanks to weigh the ammonia in case tests of that sort are considered necessary.

Refrigerating men will realize that it requires a rather compact arrangement in order to put a complete 12-ton plant, including a small electrical plant, in one-half an ordinary box-car, cooling coils being arranged in the other half of the car. The cooling room is heavily insulated so as to stand a high temperature without undue loss of refrigeration.

The car is built very strongly to stand the tests and to carry the heavy machinery and weighs 60,000 pounds. A stiff platform and extra trusses provide for the machinery.—Riverside Press.

ATTACKING CO-OPERATION.

The effort of the Florida fruit growers to organize and co-operate in the marketing of oranges has called forth all kinds of attacks on the co-operative plan. Note the following from a recent Florida Produce News, an argument which was probably picked from some of the attacks made on the California Fruit Growers Exchange a few years ago when its plan had not been so fully demonstrated as it is now.

"Let us sell every car for cash California, at a home auction. But auction or otherwise, let it be for spot cash. This would close one-half of our too numerous packing houses, would reduce charges to a legitimate figure, would dispense with every unnecessary man Jack now living off the grower, would materially add to our net returns, would bring the buyer and grower in direct contact, would compel enforcement of Mr. Powell's excellent suggestions, as the packer who failed to do good work would be spotted at once, as a car packed today would sell tomorrow."

Fortunately the California Exchange member doesn't need to "spot" the packer. That was what he used to do and he gradually learned that his time was spent in "spotting" and he got mighty little comfort—or money—out of the "spotted" packer.

The present plan is very acceptable to the average California grower, at least to nearly 60 per cent of them. If Florida can devise a better, bully for Florida, but California is pretty well satisfied with her Exchange, which is the largest co-operative marketing association in the world.

PRE-COOLING IN FLORIDA.

Florida shippers of oranges are making their first experiments in pre-cooling. Many shipments have been packed close in the car and sent out to care for themselves. Now, a paper says: "It is necessary to strip cars thoroughly so as to have good circulation of cold air through the fruit; also, that too many boxes can be put into a car. A car of 340 boxes just fills a refrigerator car full, two boxes high from one end of car to the other and consumes about two-thirds or three-fifths of the car's space.

"All of these cars were handled with despatch by the transportation companies.

"With a central packing house and a pre-cooling or refrigerating convenience attached the citrus business can be guaranteed a safe, sure and remunerative one."

POTASH MAY PREVENT IT.

We are somewhat inclined to the opinion that much of the decay of Florida oranges at the ripening season and while in transit to market—of which much complaint is now being heard, though doubtless exaggerated—is due to a deficiency in the application of potash to the trees during the bearing season. It has been noticed and trees standing near fowl yards and frequented by chickens present the same difficulty every season, which is attributed to an excess of ammonia. If this were counteracted by the liberal use of potash at the right time the trouble would be largely diminished if not entirely avoided. —Tampa Times.

A correspondent writes as follows to the Florida Fruit and Produce News: "Referring to the suggestion made in a recent issue of your excellent paper, that Florida orange growers send a committee to California to study the methods employed by the growers of that state by means of which the business has become one of great profit, it would be more practicable, it appears to me, to arrange with the California Association to send us a thoroughly experienced and capable man to take charge of the orange packing and marketing interests here with a view to organizing along the lines of the California Association.

"Beyond question there must be organization, and that of the right sort, or our Florida growers would better abandon their groves and turn their attention to something else. Let us, however, rather use the system which is the result of years of experience and which is making of the California orange industry, a mine of gold."

An editorial in the same issue adds: "Our growers should secure the services of a practical, experienced man who is familiar with the methods in vogue in California; that he may go over the ground here and work out a plan suitable to the conditions and needs of the Florida growers. If the services of such a man could be secured, and a plan of visitations be outlined whereby he could make a tour of the state to meet and talk to the orange growers direct, more could be accomplished towards organization than by any other method yet suggested. Meetings should be arranged for and advertised in advance to secure as large an attendance as possible of those interested. Stereopticon pictures from actual photographs should be used and a general plan of educational campaign carried out. Such a scheme would cost money, but this should not be insurmountable. What is needed now more than anything else is some man of large views, of a philanthropic disposition and with the genius for leadership who will take hold and put it through. Where can he be found?

The chinaberry must go. It harbors the pestiferous whitefly that is infecting the orange groves in some parts of the state, and prevents the final extermination of the insect. The chinaberry was never of much use anyhow, and we don't think it will be missed very much.—Produce News.

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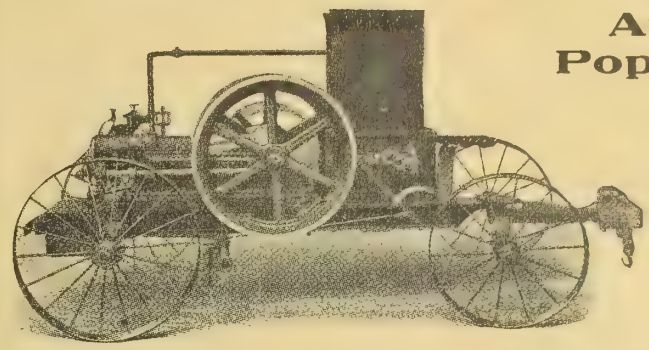

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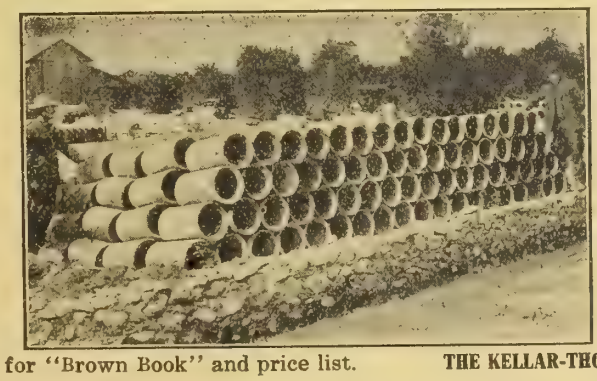

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California Cultivator

ESTABLISHED 1889

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Contents

STANFORD UNIVERSITY AND CITY OF MAYFIELD, Cover.

EAT RAISINS ON RAISIN DAY, 467.

CAN MORE MONEY BE SECURED FOR PRUNES, 467.

CITRUS.—Refrigeration Car; Attacking Co-operation; Pre-Cooling in Florida; Potash May Prevent It, 468, 469.

EDITORIAL.—Fool Rumors; Prunes; Arabian Alfalfa Seed; Raisin Day; Florida Committee Coming; Apricot Output, 470.

AGRICULTURAL NOTES ON THE PACIFIC COAST.—Northern, Central, Southern, the Coast, 471.

DECIDUOUS FRUIT CULTURE.—American Apples in Europe, 472, 474.

LIVESTOCK AND DAIRY.—Questions; Swine in America; Sugar Beet Feeding Value; Is the Berkshire Best; Alfalfa Or Clover for Brood Sows; Teaching the Young Calf to Drink, 475, 476, 477.

SMALL FRUITS AND VEGETABLES.—Asparagus Culture; Screens for Cabbage Seed Bed, 478.

ORNAMENTAL GARDEN.—How to Grow Roses; More Beautiful America, 479.

GENERAL AGRICULTURE.—Bit of Grange History; Arid Agriculture; Springs in California, 480, 481.

CALIFORNIA FARM NAMES, 482.

POULTRY YARD.—Poultry Raising From a Woman's Standpoint; Sex of Eggs; Feeding Green Bone; Long Distance Orders; Feeding Milk; Incubator Chicks; Cause Of Limberneck; How to Caponize; Don't Feed Your Chicks Too Early: Soft Shelled Eggs, 483, 484, 485, 486.

QUERIES AND REPLIES.—Lameness; Corn For Silage; Silos; Cottony Cushion Scale; Needs a Mother; World's Record; Mangel Wurzels For Hogs; Poisoning Squirrels; Fertilizer For Garlic; Scab; Fungus Troubles, 487, 489, 490.

VETERINARY.—Lameness; Heaves, 490.

HOUSEHOLD.—The Hickory Log; Nannette's Woe; About the House; Raisin Receipes, 491, 492, 493.

PRODUCE MARKET.—Los Angeles, Markets; San Francisco Markets; Citrus Markets, 494, 495.

FOOL RUMORS.

Rumors which did vast damage to the strawberry industry of all Southern California were started in the strawberry growing centre of Gardena, a few miles out of Los Angeles last week. Strawberries had become plentiful, consequently they were cheap, many families supplied themselves with quantities of the berries and as a result of over-eating, or, maybe, for some other reason, were taken sick. The first excuse which they offered and seemed to be plausible was that the Japs from whom the berries had been purchased had sprayed their vines with Paris green or some poisonous mixture to prevent attack of insects. Of course, no one stopped to see whether this had been done, but instead rushed to the daily papers with the claim that the Japs were poisoning their berries.

The city dailies, of course, came out with big headlines and the great berry buying public proceeded to cut off strawberries, whether grown by whites or Japs, from their bill of fare. This, of course, caused investigation of the Japs and the physicians who had the cases in hand and it was soon proven that poison had nothing whatever to do with the sickness. But, of course, the damage was done and it is now said that the white berry growers of Gardena alone suffered to the extent of more than $1000 per day as the result of the senseless charge which had no foundation whatever, in fact.

This is not the first or only time that such reckless disregard of the truth or the property of others has impelled untruthful people to start these rumors. The damage is, of course, great not only to the one community, for in this case not only Gardena but various sections all over the southern part of the state suffered, because timid housewives are even yet refusing to buy berries because of fear of poisoning. It is unfortunate that an example cannot be made of those who made such groundless charges.

PRUNES.

The report of the committee of fifty which was made at the recent prune growers meeting at San Jose and from which we quote liberally on first page of this issue, gives some excellent reasons for co-operation amongst prune growers. We think the principal one mentioned by the committee is this, that a higher grade of fruit shall be put up. We do not refer to the quality of the fruit as it was grown, so much as to the manner in which its quality is lowered by the method of packing. We know of one household where the housewife has vainly tried to get satisfactory fruit of this kind. The ordinary boxed prunes have been packed direct from the boiling vat and put up so wet that they have lost their value and become mushy, and in fact, to quote a housewife's own words, "nasty mess." It may seem harsh to speak of this fruit in that way, but one who likes such fruit and has tried vainly to get a good, firm, meaty fruit, only to have a mushy, soft fruit continually put upon them, loses their temper and speaks as did the housewife. This same housewife remarked that she had tried all the groceries to get some of the ordinary cured prune, which had not been destroyed by "Processing," but the grocer spoke of this as being unclean and not fit for sale, and of course could not supply them. There is one brand of prune put up in tins hermetically sealed, but these are not kept by the general run of grocers. They are exceptionally fine when they can be had.

Now, if the prune growers will accept this one recommendation of the committee on co-operation in marketing and then advertise liberally to show that a higher grade of prunes are now being put out, we do not believe that 100,000,000 pounds of prunes a year, or even double that, will be sufficient to flood the market and discourage profit bringing prices.

ARABIAN ALFALFA SEED.

We have received considerable inquiry as to where Arabian Alfalfa seed may be secured and find on inquiry that it is possible none may be had for this spring planting. Regarding the matter we inquired of Prof. G. W. Shaw, of the State University, and he writes as follows:

"It will not be possible to obtain Arabian alfalfa seed at the present time. There will probably be some seed available next year, but in rather limited quantities. I may say that the Department of Agriculture is making an effort to ascertain how large a call there is likely to be for this type of alfalfa and to secure definite statements as to how much could be disposed of. They do not state at what price, but I presume it will cost double that of the common seed."

From this it would appear that the person who is interested in this seed would do well to get in touch with the department or with Professor Shaw at once. The person should have the insurance of his having seed if he intends to plant this most desirable of all the alfalfas. At least present indications are that it is the most desirable for California conditions. It is possibly more susceptible to the cold weather than the ordinary alfalfa, though in Imperial Valley it has permitted cutting, we believe, eleven times during the year.

Raisins and oranges have each had their turn and now we imagine the prune men have an itching along the same line. If not they should have for the industry needs just the stimulus of some such agitation as the raisin question is now having.

RAISIN DAY.

Friday, the 30th of this month, has been settled upon as the day to eat California raisins. It now appears that more general observation of the day will be made than ever has been given to a similar advertising proposition. The suggestion has been taken up in a more general way than was anticipated by the management of the advertising and the committee at Fresno has been floored with requests for information as to the day and as to the steps necessary to take in order to give as big a boost as possible.

Surely the industry needs encouragement. During the last year a condition has prevailed which is almost equivalent to disaster for the raisin producers. This campaign may be too late to save the day for these men on this year's crop, but doubtless great, permanent good will result to the industry as a whole. We presume the day will become an annual one, though we imagine better results might be obtained by changing the day to one in the fall when fresher and higher grade raisins can be placed on the market.

FLORIDA COMMITTEE COMING.

We understand the committee of Florida orange growers which is coming to California to investigate citrus fruit packing and shipping conditions here, will arrive next week. The Florida citrus growers have been in hard lines in marketing their fruit for some time. There has been no organization to control shipments and the method of packing has been unsatisfactory to some of the trade so that most unsatisfactory returns have been secured by the growers. For several months there has been agitation of the matter of co-operative marketing or of some step which is necessary to give the industry greater encouragement.

We extend welcome to our Florida friends and trust they will find much in California to inspire them to better work and, of course, we hope they will bring some suggestions for California growers which may prove of value.

THE APRICOT OUTPUT.

Present indications go to show that this year's output of apricots will be most satisfactory as to quality, that is so far as can be determined at this early date, and the quantity will be well up to the average. For the last two weeks the Cultivator has given estimates from various sections and, just as we go to press, we have another letter from Ventura county, written by Mr. T. W. Spier, in which he says: "From information and observations find apricot crop in county promises well. Fruit is equally destributed on trees and ground full of moisture. Estimate crop at 85 per cent, providing favorable weather continues." Ventura is one of the largest apricot producing sections of the state.

The report from Pomona and from Fresno indicate somewhat of a shortage, but we believe all told, the average will be good. In some sections like Pomona shortage is occasioned by decrease of number of trees rather than by crop conditions.

Mr. Mills reports Sacramento Valley rather light crop of high grade.

Shop Talk

TRIAL SUBSCRIPTION OFFER.—On another page of this issue of the Cultivator will be found an advertisement of a special trial subscription offer. Without doubt the readers of the Cultivator have never before had such an opportunity for getting acquainted with the best magazines. Even this offer is now limited to the first of June and we wish to impress upon those interested the importance of sending in orders at once.

Every ranch home now receives its regular monthly and weekly magazines, which are necessary to every member of the family, and this assortment presented by the Cultivator contains publications suitable for all.

Our subscription department has received during the past year and will continue to receive orders for any books and magazines in the market. We do this, of course, for our own interest as well as for our subscribers, and while we, as publishers, obtain reduced rates, we allow the reduction to benefit our subscribers as an additional attraction to our paper. Just bear this in mind and let the Cultivator order your reading matter for you. In the meantime send us $2.25 for the phenomenal trial list offered this week.

Agricultural Notes of the Pacific Coast

Northern California

Fruit outlook for Chico, Butte county, is exceptionally good.

Beet seeding is yet going on at Winters, Yolo county. The acreage this year will be large.

The town of Paradise, Butte county, is planning for the extending and beautifying of a natural park.

A shipment of fruit trees from Missouri to Sutter county was found to be infested with peach root borer.

A hailstorm recently visited Auburn and did some injury to the fruit industry, but the outlook is still fair.

The Government plant introduction garden at Chico is experimenting with an introduction of Asiatic melons.

Students at the State University Farm at Davis, are given trips to different ranches in order to show them the methods of work.

A number of wells have been sunk near Davis which have proved exceptionally satisfactory in furnishing irrigation supply.

An addition has been made to the Burbank experiment farm at Sebastopol which is now being planted to experimental fruit trees.

The weather forecaster at Sacramento predicts that the Sacramento river will be higher this summer than it has been for six years.

Almond growers of Yolo report approximately one-third of an almond crop, while in other sections some reports show quite large setting of nuts.

The State University issues warning to farmers to beware of agents selling "stone dust" which may be claimed to be of value as a fertilizer.

The Morse Seed Company of San Francisco will make large plantings at Haywards for next year's seed supply. Forty acres will be planted this year.

It is expected that a creamery will be completed and in running order at Cottonwood, Shasta county, shortly, which will handle the milk from 500 cows.

Palermo fruit growers take exceptions to the plan of a fruit shipping house sending out oranges from that section under Southern California brands.

The board of supervisors of Colusa county has appointed a highway commission to investigate the needs of the counties in the matter of better roadways.

It is said that over two thousand visitors from various towns recently visited an incubator plant in Petaluma on a day when 18,000 chicks were hatched.

Marysville proposes to have her system of levees reinforced and increased in heighth before the first of October so that no possible flood can drown them out.

Prof. Jaffa has been looking over the State University grounds in the expectation of establishing a poultry plant as part of the educational features of that institution.

The Sonoma County Pomona Grange at its recent meeting at Healdsburg, unanimously adopted resolutions condeming the proposed increase of salaries of county officers.

Central California

Prunes promise a fine crop.

Asparagus canning is in full swing.

Tulare county has developed a regular organized cattle stealing syndicate.

Impetus to raisin shipments has been given by the great Raisin Day campaign.

Surplus stock of prunes is nearly all shipped, and it is expected prices will soon advance.

One cantaloupe buyer at Turlock is offering to contract for three hundred acres of melons.

One grower will plant one hundred acres of oranges near Terra Bella, Tulare county, this spring.

Contractors at Lodi are already offering to contract for Tokay grapes at $20.00 to $25.00 per ton.

Deer Creek, Tulare county, ranchers report about sixteen sacks of barley to the acre as a probable yield.

It is proposed to build a large reservoir for storm water storage near the La Grange dam in Stanislaus county.

Lincoln Grange of Cupertino, Santa Clara county, celebrated the ninth anniversary of its organization, last Saturday.

It is expected that the melting snows in the Sierra Nevadas will soon give high water to the rivers of the San Joaquin valley.

The San Jose Grange recently passed resolutions endorsing the bill appropriating funds for the state farm at Davis and urged that the bill be signed.

A cattle company is being formed at Corcoran with a capital stock of $500,000, which will handle cattle in a large way, fattening on the sugar beet pulp made at the factory.

It is estimated that three million sheep which are owned in California were given about seven million dippings for scabbies last year. The percentage of the disease has been reduced from 15 to about 8 per cent.

At a recent meeting of orange growers at Lindsay the Lindsay Growers Protective League perfected an organization. The executive committee consists of G. S. Berry, R. H. Shoemaker, C. O. Cowles, W. B. Kiggens, and H. C. Morrison.

A car of orange trees shipped to Lindsay and found infested with yellow and black scale was denied admission to the county by the Horticultural Commission and trees later defoliated and scrubbed with kerosene emulsion and later released.

The act passed by the recent legislature which makes it a misdemeanor for any person to harbor or permit ground squirrels to infest the property, will probably give an impetus to the effort to subdue or, if possible, rid the state of these expensive pests.

The prune growers of Santa Clara county are somewhat divided as to whether to follow the farmer's union plan of disposing of their coming prune crop or to organize a co-operative movement more along the line of the orange growers exchange. The greater number prefer the latter method.

Southern California

Santa Ana will observe next Saturday as clean-up day.

Somis, Ventura county, reports a fine apricot crop this year.

Imperial valley cabbages are commanding not far from $45.00 per ton.

The California Vegetable Union is now paying $45.00 per ton for cabbage.

Fullerton has shipped over five hundred boxes of asparagus to the East.

A Cultivator representative at Fallbrook reports a good outlook for all crops.

El Centro recently shipped two cars of onions which netted 3 cents per pound.

A large packing house at Alessandro, Riverside county, was recently burned.

Tri-counties Reforestration committee is holding a meeting at Redlands this week.

Escondido farmers report the finest promise of barley hay ever given in that section.

A twenty-seven hundred acre ostrich farm is in contemplation for Imperial valley.

Nearly two hundred cars of oranges are being shipped every day. Most of them under ice.

Codling moth parasites have been sent by the State Horticultural Commission to Riverside.

The Ojai Valley Orange Growers Association has disposed of the fruit this year satisfactorily.

Orange shipments are going forward on a more liberal scale than at any time this season.

The Department of Agriculture is experimenting with a refrigeration car in pre-cooling of oranges at Riverside.

The Yucaipe Lumber Company will plant several hundred acres to eucalyptus trees in Yucaipe valley, San Bernardino county.

Citizens of Westminster are petitioning for the construction of a drainage canal which will make available much new land.

The Palo Verde Mutual Water Company has a large number of men at work in the Palo Verde valley laying ditches for irrigation.

The Government Experimental Refrigeration car for pre-cooling fruit has had its first trial and has been pronounced a success.

San Bernardino county apple growers have had some trouble this year with wooly aphis and some shipments of nursery stock have been found infested.

The Jersey Farm Company is the name of the new corporation which is now building large barns and is getting ready to produce milk to supply the city of Santa Ana.

Imperial alfalfa is ready for market and some has already been shipped. It is commanding $6.00 per ton in the stack. The harvest of barley hay will begin in about a week.

Ventura county bean growers are succeeding in working out the details of a co-operative marketing organization. The members hope that this year's crop will all be marketed through it.

The Coast

The first California strawberries to be sold in Spokane arrived about April 1st.

Alaska dealers have placed an order with Seattle grain growers for four million tons of oats.

Boulder, Colorado, contemplates irrigation extension which will bring 3000 acres under the ditch.

Portland, Oregon, has a new creamery which will be thoroughly up-to-date and have large capacity.

Irrigation plans contemplated in the state of Colorado will add over one-half million acres to its tillable lands.

It is hoped that the Government will aid in the reclamation of nearly a million acres of land near Prosser, Wash.

The apple king of Hood River, Oregon, is Oscar Vanderbilt, who will soon have one thousand acres planted to apples.

Rains which recently came to Colorado farming lands saved the wheat crop which until that time was in a serious condition.

An irrigation project which will bring twenty thousand acres of land under irrigation at La Grande, Oregon, is under way.

Fruit growers of Pecos valley, New Mexico, have formed a co-operative fruit grower's association which will look after the marketing interests of its members.

An effort has been made to secure the removal of the sugar factory from La Grange, Oregon, to Utah. This factory has had a pay-roll of about $160,000 a year.

The Wyoming Stock Growers' Association representing practically all the cattle growers of that state have adopted resolutions protesting against the removal of duty on hides.

Three additional dairy inspectors have been appointed by the state dairy department of Washington which it is hoped will give better service in the dairies of the state.

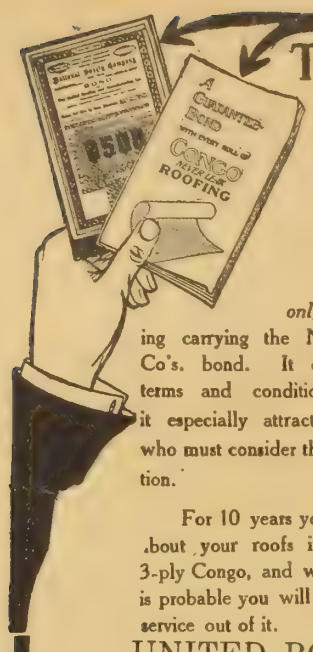
Orchardists in Lynn county, Oregon, have done more spraying during the past season than for years. It is expected that an exceptionally good crop will be marketed next season.

Fruit generally over the Sacramento Valley will be later than last year. The first box of cherries out of Vacaville last year was April 16. It is thought that it will be at least the 25th this year.

Oregon hop growers are concerned lest the production the coming year shall be excessive again. Reports of loss in the hop yards have been exagerated and the shrinkage which was fully expected will not be great.

The farm demonstration train under the auspices of the Washington State College reports 2800 visitors to the train in one day. The train was met at some places by school children in parade headed with flags and band.

Suit has been filed by the Farmers Educational and Co-operative Union of America through its committee for Washington and Idaho to require railroads in Washington and Oregon to give the same rates on grain, livestock and other farm products to Astoria as to points on Puget Sound.



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A SURETY BOND with every roll

Congo is the *only* Ready Roofing carrying the National Surety Co's. bond. It carries with it terms and conditions that make it especially attractive to anyone who must consider the roofing question.

For 10 years you can rest easy about your roofs if covered with 3-ply Congo, and we know that it is probable you will get *even longer* service out of it.

The Surety Company is issuing these bonds, and back of them is their *two million dollars of assets.* It is a matter of keen satisfaction to us that they were willing to stand behind Congo Roofing.

You are immune from any responsibility other than giving the roofing ordinary care.

Write to-day for samples of Congo and full information.

Remember, that with *every* roll of Congo you get a genuine Surety Bond.

UNITED ROOFING AND M'F'G CO.
Successors to Buchanan Foster Co.
CHICAGO 567 WEST END TRUST BLDG., PHILADELPHIA, PA. SAN FRANCISCO
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Rex Lime & Sulphur Solution
For Grape Mildew

This famous preparation of calcium sulphide has been found to be far superior and cheaper, and easier applied to grape vines for Mildew than Dry Sulphur. It also prevents the Thrip from remaining on the vines; it is a tonic to the vines; is guaranteed to be of a strength of 33% Beaume test with the largest possible amount of the Solution in the penti-sulphide form. It can be used in the dry weather and will adhere to the leaves and will not be blown off by the wind as Dry Sulphur.

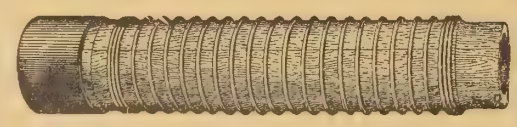
For further particulars ask your dealer, or address:

California Rex Spray Co.
Benicia, Cal.

Peaches 4 to 6 feet, $15.00 per 100; 3 to 4 feet, $13.00 per 100.
Apricots 4 to 6 feet, $13.00 per 100; 3 to 4 feet, $11.00 per 100.
Plums 4 to 6 feet, $16.00 per 100; 4 to 4 feet, $14.00 per 100.
Walnuts 4 to 8 feet, $30.00 per 100; 3 to 4 feet, $20.00 per 100.
All the Varieties No. 1 Trees

San Fernando Nursery Co.
San Fernando, California

All Soils Alike to Wood Pipe



The heaviest adobe, the most corrosive alkali, the lightest sand; all alike where Wood Pipe is used.

It Resists Them All

Wood Saturated. Air Excluded—Can't Rot. Metal in Bulk, Galvanized, Asphalted—Can't Rust. High factor of Safety in Binding—Can't Leak.

Prices, specifications, hydraulic data and general information gladly furnished upon request.

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318 Market Street, SAN FRANCISCO — 210 Wells Fargo Bldg., PORTLAND, OREGON — Dooly Block, SALT LAKE

Farmers, Take Notice

To increase your crop in quantity and quality you must fertilize. The Tom Lewis fertilizer insures big crops for everything that grows. The best and cheapest fertilizer made. It is the farmers' money maker. No trouble to use. Big crops are sure to follow. This fertilizer produces 6 to 10 pounds of grapes to the bunch. For catalogue and prices write

Thomas Lewis, 1916 10th Street, Sacramento, Cal.

When writing advertisers, mention Cultivator.

Deciduous Fruit Culture

By J. W. Mills

AMERICAN APPLES IN EUROPE.

ANNOUNCEMENT is made by J. F. Pershing, who has returned to Spokane from a tour of Europe, that he has arranged for the sale of $450,000 worth of Washington apples in London, Liverpool, Paris, St. Petersburg, Berlin and Hamburg this year. Mr. Pershing sent 20 cars of apples grown along the upper Columbia river to Europe last fall, and says he received good prices, disposing also of the entire consignment. He also made arrangements with the commission men of the cities mentioned to handle the fruit next season.

Mr. Pershing says that William Dennis, lord mayor of Westminster, head of the firm of Wm. Dennis & Sons, the largest apple dealers in the world, will visit the Pacific Northwest next summer, and will be in Spokane some time in July. Mr. Dennis is greatly interested in the horticultural possibilities of the northwestern states, and is coming to learn more about the country. Mr. Pershing said:

"During my trip I spent some time in Paris, and was most strongly impressed by their methods of packing there. In this regard they excel the Americans in every way. All of their fruit is packed between layers of excelsior, and one apple never touches another, thus preventing any blemishes.

"There is a vast field in Europe for the sale of American apples, and I believe that in the next few years Americans will sell most of the fruit throughout Europe. Delicious and Winter Banana apples are the chief favorites, but there is a good market for most other varieties.

"American apples are new in France, but they command good prices, and with improved methods of packing I believe that the French market there can easily be controlled. There are no cold storage plants in Paris, and if American apples are shipped there about the time that their own apples are off the market, good prices can be secured."—Southern Fruit Grower.

RAISIN DAY.

(Continued from Page 467.)

imagine that good raisins, currants, and dried fruits cannot be produced in Australia, they should inspect the samples lately received at the Chamber of Commerce.

The present acreage in wine, raisin, and table grapes in Australia and South Africa is as follows:

	Acres
Victoria	26,435
South Australia	22,575
New South Wales	8,521
West Australia	3,521
Queensland	2,070
Total	63,122
South Africa (Cape Colony)	33,000

The above countries are practically the only ones that produce raisins and currants; some raisins and grapes are from Chile in the Huasco Valley, and also in Persia, but they are consumed locally and never come on the market.

There is little or no demand for California raisins in Australia at the present time, both on account of local production, and also because the import duty on them amounts to six cents a pound. New Zealand takes about a million pounds, but the best customer is Canada, which consumed in 1907 upwards of six million pounds, and no doubt a ready market might be found there for a much larger quantity if steps were taken to bring them more before the public.

It has recently been suggested that a large quantity might be disposed of to the many co-operative societies in Great Britain, but it has been proved long ago that they cannot compete with the Spanish raisins, owing to the low cost of production in that country.

The following figures will make this fact clear:

California Raisins Imported Into the United Kingdom:

Year.	Pounds.
1899	90,740
1898	38,638
1901	114,696
1900	315,000
1902	17,425
1903	55,006
1904	3,864
1907	138,980

California raisin growers are not the only ones interested in the industry who have had a bad year. One of the largest produce firms, established over a century, with an office and warehouse staff numbering upwards of nine hundred, writes from London on the 23rd of February regarding raisins and currants:

"A very large proportion of the shipments arrived in London on bad markets, and showed heavy losses to all concerned in the distribution. Prices also fell in the countries of production fairly early in the season, but it is impossible to say what is an average of prices obtained by the growers."

Value In Present Effort.

Great good should come to the raisin industry from this effort. Great good should come to all branches of the fruit industry, for this, like the orange advertising campaign, is teaching the value of advertising to teach the people the value and healthfulness of fruit food.

PRUNE ORGANIZATION.

(Continued from Page 467.)

and housewife how to prepare the prunes in the many ways they may be prepared, to make them palatable and attractive to those who are to eat them.

"In this connection also inform them of the healthful and nutritive quality of the prune.

"Third—Reduce the price to the consumer. We can not expect the consumption of prunes to be what it should be while the retailer asks the consumer 15 cents per pound or more for prunes that cost him 5 or 6 or even 7 cents per pound.

"Fourth—Advertise to call the consumers' attention to the desirable qualities of prunes and how to cook them, and to induce them to buy and eat them. This advertising will also enable you to reduce the price of prunes to the consumer.

"To accomplish these results we need not start in to revolutionize the business of handling and marketing prunes. What is necessary is to follow the prune after it reaches the retailer and see to it that he sells it to the consumer at a reasonable price and help him to sell it.

"To accomplish these purposes the following plan has been discussed and is submitted for the consideration of this convention:

Corporation Proposed.

"The organization of a corporation made up of growers; all growers being entitled to membership and a voice in its affairs. This corporation through its officers and agents shall investigate methods of drying, packing, etc., and inform all growers of the best methods to be pursued to put the fruit in the most perfect condition for sale to the consumer. This corporation shall also undertake an advertising campaign throughout the consuming districts in the East. This campaign being designed to inform the people how to prepare prunes in

The Story of Kerman

The question naturally arises in the minds of many: If all that is claimed for Kerman tract is true. If it is true that this tract is today attracting more interest than has any other tract of agricultural lands in California; if it is true that more wide-awake, actual settlers have come to this tract since last November than have come to any other tract in California in the same length of time in years, if not in the entire history of the state—if all these things are true—(and they can easily be verified) how does it come that it has laid then unoccupied so long? Why have not local men snapped up these chances in the past? These and similar questions arise and demand an answer.

A Portion of Kerman showing the Kerman Inn, the Pioneer Block and other buildings. Photo taken from the park.

And there are reasons for this condition, the same as there are for any and all conditions. "Nothing happens," and nothing has happened here that is not the result of natural causes that are easily explained. First, in the last issue we explained how and why it was that this great domain—an empire almost—that is destined in the future to attract the attention of the country as the greatest producer of high priced semi-tropical fruits, alfalfa, dairy and poultry products, had been lying here almost ignored, not only by the homeseekers from the East, but by the thousands of Californians who in the past have turned to irrigated soil for sustenance, comfort and often opulence. It seems almost incredible that a valley as rich as are certain sections of the San Joaquin could have been so securely hidden from the hundreds of thousands of land hungry people who of late years have settled the semi-arid plains of the middle West, have populated all of Northwest Canada and have congested the irrigated areas on the north coast, till the best lands there now cannot be had for less than thousands per acre, some of them selling as high as $3,500 per acre, actual cash transactions; it seems strange, to put it mildly, that this area should not have attracted due notice. But it did not, and the reasons are now clear to all who have given the matter a little thought. And the Kerman tract suffered in common with many other localities, but more so.

What is now the Kerman tract was at one time a sheep and cattle range. Later it became a part of the famous wheat fields of California and the amount

The Kerman Inn and the new Club House.

of wheat these lands produced per acre is yet looked upon as being record breaking. Years ago this tract passed into the hands of one of the most powerful banking institutions in the United States. The lands were rented and were continually cropped until their values became so high that it was no longer possible for dry farming to pay a rental high enough to pay interest on the amount they would bring when sold for other purposes. The bank which owned these lands some twenty years ago secured the magnificent and almost unique water right which is now doing more than any other one thing to make these lands so highly sought. But the professional wheat farmer is not an irrigator, and hence but little use was made of the water right.

A few years ago the Kerman tract was bought by the Fresno Irrigated Farms Co. They knew of the possibilities of this tract and had faith in it. Arrangements were made to colonize the tract. In fact, the work was begun and some of the lands were sold. It takes time to bring a tract like this to the attention of the public, and while sales were made, the movement did not gain great momentum when the fire and earthquake occurred at San Francisco. The lands that had been sold had been taken principally by Californians, the "Fire" disturbed financial affairs very materially, and many who had money to invest concluded to hold back till matters had readjusted themselves.

Close upon the heels of "the fire" came the panic in the East, which further held back those who were reaching out and seeking either investments or new homes.

And yet progress was made at Kerman. Orchards and vineyards were set out, lands were put into alfalfa, settlers were building comfortable homes. Schools were built and the town of Kerman was changed from a water tank and a depot merely to one of the liveliest little towns in the valley. Kerman has today two hotels, one modern in every particular, a national bank, numerous mercantile establishments of all kinds. Kerman has electric light and power, telephones, water and sewer system, and the tract has rural free mail delivery. A new reinforced concrete school building will be ready for occupancy September 1st. Kerman is the home of the California Stock Food Co. and their alfalfa mill is located here. This mill stands ready to take every ton of alfalfa that can be grown on the tract and pay cash for it, the price last year at the mill running from $8.50 to $13.00 per ton. Kerman has an electric lighted park. New houses are springing up, and yet several families are now living in tents awaiting the erection of their homes.

In short, Kerman is today an up-to-date little city, furnishing all required conveniences. It is located on the main line of the S. P. between San Francisco and Los Angeles, being now a freight division of the Southern Pacific. The "Owl," the fastest train on the S. P. system, stops here, and we have also the new motor car system, furnishing rapid and frequent transit.

The New Era

The possibilities of the Kerman tract became known in the East, and six months ago people from there began to come here to investigate. That proved the opening of the new era, and since that time more land has been bought and put into fruit and alfalfa than in any other year of the past. People have come here singly and in parties, and but a very few have left here without purchasing.

The Empire School on the Kerman Tract

And these purchasers are not speculators, but people who are coming here to make their homes. Dozens who have bought since last fall are already on the land and are improving it. Improvements are rife on every hand. Up till April 8th, 6,000 acres of new lands had been put under water this spring, and 1,000 more in late crops will be put under water before the season closes. Miles of new canals and ditches have been made. Over 300 acres have been put into cantaloupe by the new settlers this month.

Merely Started

While much has been done, it is only a start. The tract is but beginning to be known. Early efforts are bearing fruits and the new settler can now tell what he can do from what has been accomplished by those who came here early. It is no experiment, and those who are really looking either for a home or gilt edged investments rarely leave here without purchasing, and then going home trying to induce friends to come here while it is yet a "ground floor" proposition. One agency in the East writes us that by next fall, when crops are secured there, there will be a landslide to the Kerman tract; that all who have been here are

A familiar view on some of the road corners on the tract, showing that settlers are numerous.

enthusiastic about the future possibilities, and that it will be more a question of supply than demand.

Now is the Time

The man who makes the most money is invariably the one who "sees it first." Those who come before the rush from the East sets in next fall will get the choice locations, and also the benefit of the rise in value. The future of the Kerman tract is absolutely secure. It has the best water right, the soil, lay of land and the climate to produce high priced products. There is no pioneering. Everything is ready for the home making. Investigate it now. For particulars write to

Carnine & Storgaard

General Sales Agents

Kerman, California

Or call at one of the following offices;

FRESNO IRRIGATED FARMS CO., 505 Kohl Bldg., San Francisco, Cal.
FRESNO IRRIGATED FARMS CO., 553 So. Spring St., Los Angeles, Cal.
DODD & NEU, 520 San Pablo Ave., Oakland, Cal.
H. J. YOUNG, 222 Globe Bldg., Seattle, Wash.

SECURITY SAVINGS BANK

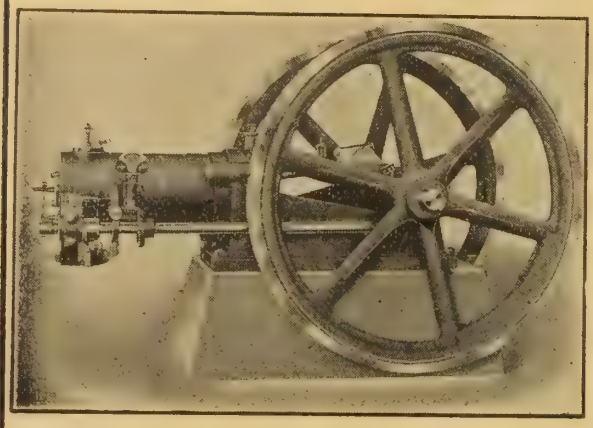
Security Building, Fifth and Spring Streets

Established 1889
Oldest and Largest in Los Angeles

Capital and Reserve, $1,300,000.00
Resources, over $22,000,000.00
Over 50,000 Depositors

4% Interest on Savings Accounts
And on Six Month's Certificates of Deposit

3% On "Special Ordinary" Accounts
Which accounts MAY BE CHECKED AGAINST without presentation of pass-book. Interest is paid monthly on the minimum monthly balances.



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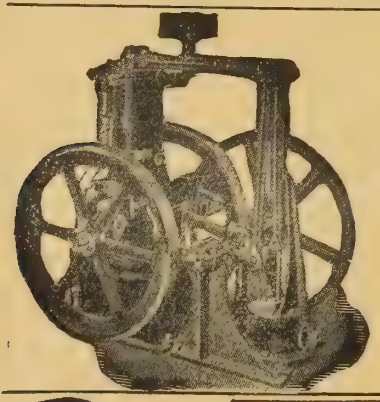
Simplest and most economical. Use Gas, Gasoline or Distillate.

Stationary, Portable Hoisting and Marine

All sizes from 3 H. P. to 50 H. P. carried in stock.
Write for our catalogue "C".

Doak Gas Engine Co.
7-9 First St.
San Francisco



A Handy Little Engine

Just the thing to run the feed cutter, the pump, the churn, the grinder, or anything on the ranch. It's well named

The Little Wonder

Write or call on

Wm. Gregory
602 No. Main St. Los Angeles, Cal.

FREE TRIP TO SEE THIS HAY PRESS AT WORK

LOS ANGELES AND RETURN AT OUR EXPENSE

WE PAY YOU TO INSPECT THESE HAY PRESSES.

Instead of paying a salesman's fare to show you a small model of a hay press, we will pay your fare to Los Angeles and return, not exceeding $15.00, to examine our California Special New Century, full circle, all steel, self feed Hay Press and all others on sale there. It makes no difference which hay press you buy, we pay your railroad fare just the same.
When you see for yourself how this machine has been built expressly for heavy baling on the coast, how strong it is, how easy it is on horses, what smooth bales it turns out, you will understand why we make such an offer. It has 7-in step-over, pull power, high baling chamber, positive plunger rebound; it stands up to its work, no taking off of wheels. Has record of 39 tons per day. We will ship you one to try. If you don't want it we will pay freight both ways. Write now.

ARNOTT & CO., 118 South Los Angeles St., LOS ANGELES, CALIF.

Tanks Tanks

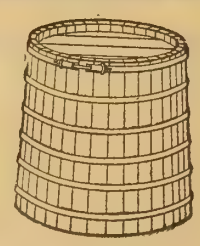
WINDELER'S PLANING MILL AND COOPERAGE

GEO. WINDELER, Prop

Water Tanks, Wine Tanks made from carefully selected stock by careful and experienced workmen. "Tanks that are well made last a long time." It will pay you to get my prices before buying.

Geo. Windeler

Wine Tank 144-154 Berry St. San Francisco, Cal. *Water Tank*



ORCHARDISTS and FARMERS

who have used our goods once, will always come to us for their fertilizers. We are making a special study of plant life and are therefore in a position to manufacture fertilizers that exactly meet the requirements of each plant. Let us know what you intend to plant, and we will name your special compositions. Write for our new booklet "The Farmers Friend," for 1909.

THE PACIFIC GUANO & FERTILIZER COMPANY
268 East Market St., San Francisco, Cal.

NITRATE OF SODA

We are prepared to furnish Nitrate of Soda at the lowest market price, and will be pleased to quote prices and furnish literature to any one interested, on application.

NITRATE AGENCIES COMPANY
W. S. SPARR, Agent, 321 Stimson Block, Los Angeles

different attractive ways; to increase the consumption and to reduce the price charged by the retailer to the consumer."

* * *

Advertising and plans of extending consumption are each discussed in the report at some length. Later the report says:

* * *

System of Inspection.

"In order to prevent poorly prepared fruit being packed under the brand that would be advertised it would probably be necessary for some system of inspection of the fruit packed to be put in operation.

"It may be thought that this money would be taken out of the growers and that the price he would receive would be so much less. This will not be true. The advertising campaign and the work of the Grower's Corporation to promote the sale of prunes to the consumer would both make it easier to sell prunes and bring such stability to the business that the packer, wholesaler and retailer could all well afford to contribute their effort to get this money for use of the Growers' Corporation without cost to the grower. But with the organization of the growers as planned they will be in position to demand and obtain a price that will enable this money to be obtained without cost to them. But they must show a determination to correct the wrongs that have grown up in the business and promote and push the sale of their product or nothing can be accomplished. If we dump our prunes onto the market and let them become the ridicule and prey of every competing interest, we may expect a continuance of the unpleasant conditions of the past. But if we put the prune in the strong position among food products that it is by its merits entitled to, we can make it a popular and profitable product. We must not wait for others to do this we must do it ourselves.

"This is only a brief outline of the plan contemplated, but it can be easily worked out in detail by the Central Corporation, and if the prunegrowers of Santa Clara Valley will enter heartily into it, it is believed that it will furnish the solution of the difficulties under which they are now laboring.

"The plan may not furnish much, if any, increase in price the first year, but it will market the prune crop and help it be consumed, and if pursued for a term of, say five years, it is believed that each succeeding year will show an increasing demand and an advancing price and this without cost to the grower.

Pooling of Fruit.

"It is believed that it will greatly aid the successful carrying out of this plan if the growers will organize District Associations in which they will pool their fruit and sell it together somewhat after the plan of the very successful Orange Growers' Association. They need not store their fruit together unless that is found desirable, but if they would select one of their number to sell their fruit to the packer and to represent them in the general Growers' Corporation referred to, they would greatly reduce the danger of competition in selling and their representatives coming together in the general Growers' Corporation would make that corporation a smaller and less unwieldly body.

"Assume that there were in this valley 20 or 30 of these District Pools or Associations representing all the prunegrowers, each District Association could, if they were legally incorporated, contract with the general Growers' Corporation to carry out the plan proposed and the contracts required to cover the prune crop of the valley would be greatly reduced in number and the business much simplified.

"Each association would elect one member to represent it in the Central Growers' Corporation, and it would be easy for these 20 or 30 men to meet together and after fully reviewing the situation fix a price at which the crop would be sold to the packers or the trade. Under this plan every grower in the valley would obtain the same price for the same grade and quality of fruit, and the prune business could be put on a stable basis such as it has never up to the present time known.

"Of course, some growers would not join these District Associations and it would be necessary to permit growers who were not members of the District Associations to join and make contracts with the General Growers' Corporation that all the fruit might come under the plan to be carried out by the Growers' Corporation.

Prevent Price-Cutting.

"While the organization of these District Associations would accomplish much in preventing price-cutting and the demoralization in the trade that follows, it is believed that the organization of the District Associations alone would not accomplish all that needs to be done to put the prune business on a stable and profitable basis. We must correct market conditions in the East and enlarge the market for prunes. With this done, it is believed that the organization of the District Associations would by providing a means by which the growers may act together, enable them to reap the full benefit that should come to them as a result of the work of the Central Growers' Corporation .

"We desire to make it clear that this plan does not contemplate the transfer of the fruit by the grower to the Central Growers' Corporation. The grower holds his fruit until it is sold and the money paid for it.

Work Together.

"The plan is designed to bring all the growers into closer co-operation and to enable them to work together as one man for the common welfare. It will not take from the grower his fruit before he is paid for it and subject him to the danger of having it unwisely handled with resulting loss to him. It will not subject him to the danger of the hostile opposition of all the packers and dealers now handling his fruit. It is designed rather to enlist the hearty and enthusiastic co-operation of every one now engaged in the business. In short, by showing that the growers are united in an effort to promote and aid the marketing and consumption of their product to bring to the conduct of the business, the active and harmonious co-operation of all those engaged in all its branches, which will certainly result in enlarging the market for prunes and establishing the business upon such a permanent and profitable basis as it has never known before. The one who will reap the profit from all this labor will be the grower."

Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

By Mrs. Minna E. Sherman

QUESTIONS.

THE ordinary cows in the dairy will produce a full amount of milk on a ration of forty pounds of corn silage and ten pounds of alfalfa hay. The common cow does not have more capacity for milk making than this amount of material fed to her will produce. Now, if this amount does not bring out the full capacity of the cow we can do that best by adding some grain. The best mixture we have been able to make in the way of economy is to use 40 pounds of corn silage, 15 pounds of alfalfa hay, two parts rolled barley, two parts bran and one part oil meal, feed of this a quart twice a day and when we increase this for some special cow to double the amount, we cut down the alfalfa hay to ten pounds. We did feed at one time 40 pounds of corn silage and 20 pounds of alfalfa hay but found that the cows could not digest it as well. The amount of woody stuff in it was too much for their stomachs. When we have Egyptian corn we sometimes feed that instead of the barley using two parts corn to one of bran and one part cocoanut meal. This last mixture makes the finest flavor in butter also of a good firm texture.

Vetch.

Winter vetch is rather slow in coming along to make it a servicable crop for winter grazing, or for cutting green. It is one of the best crops we have for green manuring, but not for soiling cows. The alfalfa and other crops are ready before it is in the early spring. Vetch at the University grounds in Berkeley is a wonderful grower it seems to find there sufficient rain and warmer winters that in the San Joaquin valley. Turnips are not as good for our use as Kale or sugar beets. These are little grown for cows, but afford a large quantity of nourishment. Mangel wurzels also grow to great size, but are less rich in feeding value. The pumpkins are readily grown and give heavy yields with little labor. The Cushaws, or crooked necked squashes have a heavy shell and will keep until spring if handled with reasonable care to prevent bruising in hauling them into the barns.

Sorghum.

Sorghum and Indian corn are our staple summer crops for the cows. Either may be planted on irrigated land as late as July 4th and give good yields. These may be cut for summer feeding or allowed to go to seed and then cured. The sorghum will come again and again if not cut below the first joint. We never tried it willfully without irrigation, but have had some that did grow in old fields without irrigation or cultivation and from seed. I should not hesitate to try some of it planted now and kept well cultivated to produce a dust mulch without any other water than is now in the soil. While the tonnage would not be as great as that from an irrigated field I think it would produce enough on this ranch to make it profitable. If alfalfa grows without irrigation then of course the sorghum will do so. The fact that Kafir and Egyptian corn are sorghums must not be forgotten.

Sire.

In handling dairy cows avoid as a pestilence the grade bull. The old law we often hear our grandmother quote that "Son like the mother. Daughter like the father." This is even truer of dairy stock. The dams are bred as milkers from any kind of cows and have behind them a mixed strain. Now breed these cows to a sire that is equally mixed and the result is a still worse jumble up of characteristics. Now use the pure bred sire and the young cows are half by him. This half is bred all one way or it is or should be a pure dairy type. Now this half pure is apt in a large per cent of cases to have the "pull" or ascendency in the creating of the animal. The fact that the heifers do take after the sire more strongly than after the dam can be seen. The color marking and form will show up strongly stamped on them. Now look at the young males from the same herd and they do not look nearly as fine as their sisters. They have taken after the dams strongly and are of mixed conformation.

Color.

Pardon me if I speak of the Holstein grades for a minute, for I have observed them more closely than any other breed. The third cross the heifers will be marked and look like full bloods. So strong is this that we cut the point of the right ear off when they are born so there can be no doubt as to their being grades. The color on these animals will stay on the bodies leaving the legs white. Now look at the young males and these will show the grade at once in many instances the legs will be a series of black spots badly broken up and reaching down to the hoof. The color of the breed will stay black and white usually. Now one of the curious things is that in breeding a black and white sire to a red short horn cow the offspring will nearly always come a solid black. If the short horn is a roan then the color comes out blue and white. In horses we see the same thing for there the black mares will sometimes turn the color to sorrel. If there is a string of blacks or brown mares, this sorrel or chestnut color crops out quite often.

Grade Sire.

The use of a grade sire in the dairy herd will still leave us some cows that are fair milkers, but the majority will be worthless. The pure bred sire can be counted on giving more than half the heifers a greater milking capacity than their dams. The next generation will increase this per cent greatly and the third generation should be as good as pure bred cattle in dairy performance. This result, of course, is obtained by culling out the poorer ones in each generation. The culling of mixed bred cattle can also be done. I know one herd of every kind of grades that the man has had selected for him all over the state and they represent an average

Suits Against Infringers of DE LAVAL Cream Separator Patents

Affecting the Standard Separator Co., the Iowa Dairy Separator Co., the Peerless Cream Separator Co., and all others who have or may be making, selling or using Cream Separators Containing "Disc" bowl construction infringing United States Letters Patent No. 892,999.

We have previously announced the bringing of suit by THE DE LAVAL SEPARATOR COMPANY against the STANDARD SEPARATOR CO., for infringement of LETTERS PATENT NO. 892,999 in the manufacture and sale of cream separators covered by the claims of said letters patent, and the fact of infringing separators made by the STANDARD SEPARATOR CO. being sold by various other concerns under several different names.

We now beg to announce, for the information and caution of all whom it may concern, that further suits for infringement of this patent have likewise been begun in the UNITED STATES CIRCUIT COURT against the IOWA DAIRY SEPARATOR CO. and the PEERLESS CREAM SEPARATOR CO., both of Waterloo, Ia.

Separators made by one or both of said IOWA and PEERLESS Companies have been or are being sold under different names by the RACINE-SATTLEY CO. of Omaha, Neb.; the HANFORD PRODUCE CO. of Sioux City, Ia.; the L. A. WATKINS MERCHANDISE CO. of Denver, Colo., and several other concerns whose names are not mentioned either because conclusive evidence has not yet been obtained against them or because of their expressed determination to get out of the separator business.

All separators containing such infringing Disc construction sold by any of these concerns, or anyone else, equally infringe said letters patent as if actually sold by the STANDARD, IOWA or PEERLESS Companies under their own names, and all of these concerns are equally liable for such infringement.

Likewise is EVERY USER of any such infringing separator bought of any of these parties or anyone else liable to the DE LAVAL COMPANY for all income or profit derived from the use thereof.

The caution is again repeated that there are STILL OTHER CONCERNS infringing this and other DE LAVAL owned patents who will be held accountable in due course.

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My Berkshires took 9 First, 6 Second and 4 Third Prizes and both Gold Medals. 50 Head For Sale.
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expenditure of close to a hundred dollars a head on the ranch. They are only themselves and at this cost he could have had a herd of registered cattle had he bought youngsters that would represent something of value when he was ready to sell out. The surplus calves when pure bred from a hundred cows represent a money value nearly equal to the butter of the herd. There always seems to be room for a calf or two extra to be fed until it is a yearling when it will represent a selling value of $75.00 or more a head. I would advise every one to buy at least a trio of the breed they like best of dairy stock and work toward making a registered herd.—M. E. Sherman.

SWINE IN AMERICA.

The most complete book on swine, published, is "Swine in America," just from the press of Orange-Judd Co. of New York, and written by F. D. Coburn, secretary of the State Department of Agriculture of Kansas. It is a book of over six hundred pages, has a complete index on every topic in the book which covers the whole range of swine husbandry. The book is profusely illustrated. Regarding these illustrations the author says: "It may be said by the censorious that they exaggerate; that they are overdone and that there never were animals so nearly perfect as the illustrations represent. There is but a measure of truth in this and persons familiar with the foremost animals of different breeds know there have been and are innumerable individuals equal if not superior to any in pictures drawn or published in good faith. These pictures are not presented as illustrations of what more than a rare few are likely to equal, but rather that students and the ambitious may observe the degree of perfection to which improvement can be and has been pushed and to be assured that similar achievements are possible because such possibilities have already been demonstrated."

The book opens with the principal kinds and distribution of swine in America. Referring to the table given in this first chapter we may say that in the twelve states of the Union which possess more than one million hogs, California is not classed with the "also ran." Though as a fact this state comes in the next class, which is from five hundred thousand to one million hogs. The greatest hog state in the country, and more than double that of any other state, is Iowa, with the enormous number of 8,413,000 swine. The great hog buying and packing interests are touched upon but more as an incident in the book. The breeder and breeding and the various breeds and types occupies more space. Practical points in breeding are given especial attention and, of course, pasturing, soil, feed and especial reference to alfalfa as a swine food, are all given most thorough treatment.

The housing and problem of pens and corrals is not only fully described but fully illustrated with many most valuable suggestions. Sanitation is also given thorough treatment in one full chapter. Slaughtering and curing of the meat with methods of handling and cutting up are also described. Diseases and method of treatment closes the book.

In the introduction, which is written by Prof. W. A. Henry of the University of Wisconsin, Prof. Henry says: "Mr. Coburn occupies a large place in the hearts of American farmers—a place peculiarly his own, for there is none other just like him. He has given us other books, but this will, without doubt, be what those who are learned would call his magnum opus, which is simply Latin for "greatest work." Since Mr. Coburn writes in good, substantial English, that everybody can understand, this is probably the only Latin that will appear in the book."

The Cultivator will be glad to secure the book for its patrons.

SUGAR BEET FEEDING VALUE

Sugar beets, like other root crops, make an excellent addition to foods for cattle, sheep and pigs. They are succulent and nutritious, keep well over winter and form a welcome addition to the dry food of stock, keeping the animals in good health and maintaining the flow of milk. The following table shows the comparative feeding value of sugar beets, mangels and silage:

	Dry matter	Protein	Carbohydrates	Fat
Sugar beets	13.5	1.1	10.2	0.1
Mangels	9.1	1.1	5.4	0.1
Silage	20.9	0.9	11.3	0.7

This table shows that as far as chemical composition is concerned, sugar beets are somewhat richer than mangels, although experiments have indicated that all common root crops are equally valuable as food for animals if equally palatable. The beets are not so rich in total food constituents as green corn fodder and silage, but it must be borne in mind that the beets are practically completely digestible, while only from two-thirds to three-fourths of the dry matter of corn fodder and silage is digestible.

The feeding value of sugar beets has been demonstrated in experiments at many of the stations. At the Wyoming station, sugar beets and alfalfa hay, and grain and alfalfa hay were compared during the winter on steers and sheep with the result that the animals fed sugar beets and hay gave better returns than those fed grain and hay or hay alone. In these experiments, the steers were fed 14 lbs. of sugar beets per head per day and all the hay they would eat.

Sugar beets, if fed in excessive amounts, may induce scouring. Extended experiments in Denmark have indicated that roots of any kind should not constitute more than 40 per cent of the ration of pigs. It is probable that this proportion should not be exceeded with other animals, although larger proportions have been fed to cows without injurious effects.—Farmers Bulletin 84, U. S. Dept. Agriculture.

VALUABLE CATALOGUE.

One of the most valuable catalogues of seeds and plants we have seen is that of Theodore Payne, seedman, 345 South Main St., Los Angeles. There are others more elaborately printed but for genuine, carefully edited information with full description of the plant in question, we have seen none which surpasses it. For instance, under eucalypt we may be permitted to copy one paragraph as follows:

E. viminalis. "Manna Gum." In Australia this tree has attained a height of 300 feet with a diameter of 15 feet. It is an exceedingly handsome tree with long pendulous branches and is one of the most picturesque for avenue planting. In rapidity of growth it ranks next to the "Blue Gum." It thrives near the coast and also in the irrigated sections on the deserts of California and Arizona. The wood is useful for shingles, rough building purposes, and fuel.

Nearly every plant touched upon is handled in almost as complete a way. The book is only forty pages but is as full of information as an egg is of meat. It is well worth writing Mr. Payne and requesting a copy.

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IS THE BERKSHIRE THE BEST.

Prof. Hoffman of the Iowa Agricultural College thinks the Berkshire is superior, but is it?

The professor says:

There are hogs, big, little, red, black, white and mixed, a large field to select from, but to the thinking farmer it is often a question as to which breed is the best. First one kind is tried, then another, then, perhaps, an outcross, with the result that correct impressions regarding the final results are impossible.

The only correct way is to try the different breeds and crosses under like conditions, and for two or three years in succession. This is absolutely the only way to determine the best hog.

To have the different breeds under the same conditions as regards climate, feed, quarters and care, you may then be sure of the final result, which will be that under all conditions such as named before, the Berkshire hog will give the best results when it comes to making the most money from the least care and feed.

In repeated trials it has been shown that the Berkshire hog is one of the most prolific of all the breeds. This means the largest number of pigs from a limited number of sows. From the start the Berkshire hog is healthy and vigorous, making excellent gains, and on corn, grass and pure water will weigh from 225 to 300 pounds at 8 to 10 months of age, and at maturity will weigh from 600 to 1000 pounds.

In several experiments, according to "Feeds and Feeding," the Berkshire hog requires from 15 to 75 pounds of feed less to make 100 pounds gain in live weight than did either the Poland-China, Duroc-Jersey, Chester White or Yorkshire that was used in the same experiment. These experiments were made in Massachusetts, Vermont, Michigan, Wisconsin and Canada, with different feeds and under different conditions, with the result that the Berkshire gains were the most acceptable.

My own experience of seven years with hogs have led me to breed "the Berkshire hog" as the most profitable of all breeds.

Six years ago it was my pleasure as well as profit to have in charge the six different breeds of hogs at the Iowa Agricultural College. Here the hogs were given the same care and feed. In my observations of the different breeds I found that the Berkshire hog was always ready for the feed, good at taking care of himself with cattle and made the most of the pastures. They always looked the sleekest and the scales showed that they were doing the best.

From the college I went to Illinois and took charge of one of the largest and best herds of Poland-China in the world. This herd contained some of the finest and highest-priced Poland-Chinas in the country, but six months of actual contact, day and night, with this herd only fixed more firmly in my mind that the Berkshire hog was the best of them all.

Since farming for myself, I have had in the feed lot Poland-Chinas, Chester Whites, Duroc-Jerseys and the Yorkshires, alongside of the Berkshire hog of my own breeding. I never had a Berk that went down on his back, trampled by the steers or run over by the wagon, and, when it came to marketing I found that the Berkshire hog was the first that was ready for the market.

ALFALFA OR CLOVER HAY FOR BROOD SOWS.

Brood sows in the corn belt have ordinarily been wintered on corn, either fed direct or through the droppings of cattle.

Corn does not furnish the proper raw material for an animal that is expected to produce a large litter of healthy pigs. It is deficient in bone and muscle-making material. Corn is pre-eminently a fattening feed, but is not an economical flesh former.

This difficulty may be obviated by feeding oats or oil meal. The oats this year, however, are high in price. Shorts are also high in price. Hence, oil meal is perhaps the cheapest supplementary feed that can be obtained; but it has to be bought. Ordinarily many will not buy the oil meal but keep on feeding corn, apparently at a profit but really at a great loss.

Where it is obtainable, alfalfa hay is the cheapest supplementary feed that can be given the brood sow. The second best is clover hay, which can be had on almost every farm. I know of one or two instances where brood sows were fed through the winter nothing but alfalfa hay, and with the very best results—large and healthy litters.

Clover hay is not as good as alfalfa hay for brood sows for the reason that it is not as rich in protein, or in ash. Brood sows, however, will eat a very large amount of it if it is cut early and well cured, and they are given the opportunity.

Those who are feeding their brood sows corn only should quit it. Feed them alfalfa or clover hay. Put it in a rack, low down, as if for sheep, and feed them sparingly on corn. Give them some shorts if you can get it. Where alfalfa or clover hay is not obtainable, try alfalfa meal mixed with corn. In some way or other the brood sows must be given a properly balanced ration if large and healthy litters of pigs are expected. In other words, the raw material must have the proper relation to the finished product.—Successful Farming.

TEACHING THE YOUNG CALF TO DRINK.

Take a stooping position in front of the calf and give it the fingers of one hand to suck, holding the pail of milk with the other hand. When the calf starts to sucking at the fingers gradually lower the hand towards the milk. If the calf follows the fingers into the milk hold the hand there a bit until the calf starts to drinking, then take the fingers out of its mouth. When it lifts its head out repeat the operation, keeping this up until it seems to know where the milk is and how it is to be gotten at. Getting the calf's head into the pail the first time is usually the hard part of the operation. Once this is accomplished the rest will be comparatively easy.—Successful Farming.

Stop and think about the water supply. It should be secured from a source uncontaminated by impurities.

To estimate the number of tons of hay in the mow, find the cubic contents of the mow and divide the number by 500. This rule gives only approximate results, since the more compact the hay is the more weight it will have and the looser hay is the lighter it will be.

1908 hops are selling at Portland at 9 cents.

U.S. 1909 UNITED STATES 1909

OUR SIDE OF THE QUESTION

The United States Separator has built up a **reputation** for **efficiency** and **durability** that makes it the **foremost** machine from every standpoint of separator requirements.

We **prize** that **reputation** and in the changes we have made for 1909 every feature that has helped to make the United States famous as the **reliable separator has been** retained.

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We have added **"working points"** and not fancy "talking points."

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You buy a **Cream Separator,** not on account of some "fancy talking points," but because it will enable you to handle your dairy product **more easily** and with **greater profit.**

A machine that will handle more milk. That will skim it more thoroughly. That will lose least in bowl flushing and that can be kept clean and sanitary with the least trouble.

These are **your** requirements, and a trial will **convince you** that the **latest model** U. S. embodies **all** of these **essential** features, to a **greater extent** than has ever before been reached in Separator construction.

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The only successful self-feed, two-horse-power press made. Guaranteed to give satisfaction or no sale. All steel and iron. Will bale one-third more hay easier and better than other horse-power machines with one-third less labor. Will bale cheaper and easier than power presses. **Ask for Catalogue No. 28.**

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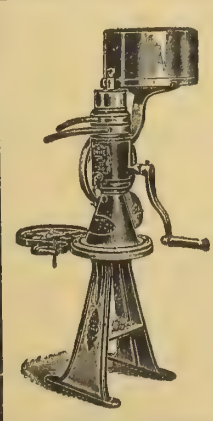

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The Empire Cream Separators are made at the big factory of the Empire Cream Separator Co. in New Jersey, and it would do every user a great deal of good to be able to go through the immense factory and see the way the EMPIRE machines are made, scores of costly machinery to make each part as perfect as it can be done, every part tested and gauged and if not perfect thrown out, as none but perfect parts are put into an Empire, this great amount of work makes the Empire stand the test, and this is why it is so durable, the best of material, by the most skilled workmen, makes the best separator. Send for our book telling all about the Empire.

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Planters, Listers, Cultivators
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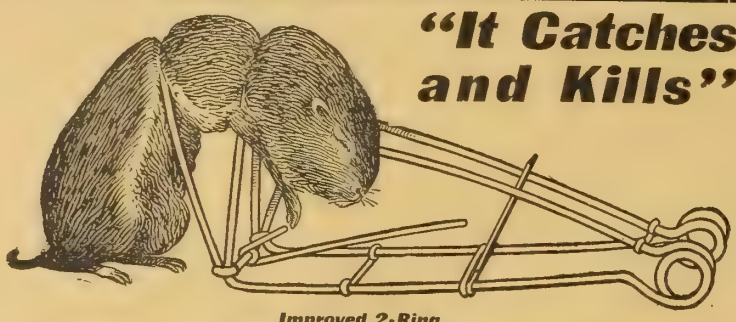

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C. V. GOPHER TRAP

Impossible to squirm out. Two rings and a set of sharp claws sieze and instantly disable the animal and cause almost instant death. A perfect trap—no other ever used where the improved "C. V." is once introduced. Superior construction, non-rusting finish. If your dealer has none, send us his name and 25c for one or $2.50 for a dozen, post paid.

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The best that grow
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75 varieties of ***Sweet Peas*** Separate Colors, 5c per Pkt. 15 Leading Varieties, post paid, 50c. 4 Varieties, that bloom in 45 days, 25c. This is the besttime to plant.

Onion Seed First Quality Yellow Danvers and Australian Brown for Main Crop. Germination over 95% by test. Per lb $1.75.

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Small Fruits and Vegetables

ASPARAGUS CULTURE.

ONE of the best and easiest grown of our garden perennials is the asparagus plant. It can be started either from seed or from plants. If one wishes to raise plants to sell, it is better, of course, to plant the seed, but if asparagus is wanted for home or market use, in the shortest time possible, it is better to set out yearling seedlings.

It is important, in laying out the asparagus plantation, to select a place where it can remain permanently for if taken proper care of, the plantation will last for twenty years. The old idea was the asparagus "bed," the new is to plant in rows the same as corn, etc., so that for the market garden the cultivation can be done by horse. The land selected should be a deep, rich, fertile, moist and cool soil, having a warm exposure, a gradual southern slope being preferred. If the land is originally hard and coarse, it should be worked a year or two in advance by the raising of some thoroughly tilled crop, using as much manure as possible in the process. Late, deep fall plowing is preferable, turning under a thick covering of well rotted manure. In the spring when the frost is out of the ground, plow furrows from six to ten inches deep and four feet apart. If the soil is not of the best quality, two or three inches of well rotted manure should be placed in the bottom of each trench and on this add a couple of inches of loose soil. Then, place the plants in the trench three feet apart. Cover with three inches of earth, it not being well to cover deeper, as it takes too long for the young shoots to push their way through. As the shoots grow the rest of the earth can be filled in around them by after cultivation. When filled in, the crowns of the plants should be about six inches below the surface of the ground, for if planted much less the roots will push up to the surface and interfere with cultivation.

If asparagus seed is to be planted, it should not be more than one year old, as the germinating per cent. of older seed is low. Soaking the seed several hours in warm water enables germination to take place sooner, as ordinarily it takes about six weeks for the plants to come up. The seed is planted by the garden seed drill, in rows about eighteen inches apart. When the plants are up, thin out to about four inches in the row. It is well to sow radish seed with asparagus, as the radish will come up much quicker than the asparagus and enable one to detect the rows for weeding. The radishes can be pulled without interfering with the asparagus, as they can be matured before the asparagus reaches any height. The seedlings are set out the next year.

As the asparagus is a gross feeder, it is well to mulch in the fall with more or less well rotted manure, although straw and leaves will do. Before mulching, the old stalks should be cut and carried away, and, if, affected with rust, should be burned. In early spring the straw and undecayed leaves should be removed, and about the last of June cover with a good coating of well rotted manure and cultivate in. Very little cutting should be done until two years after setting out, and then the cutting should not be carried on later than July first, as the plants need to grow in order to store up a food supply for the next year's growth. In cutting the asparagus for use, a sharp, square pointed knife should be used, and a straight, downward cut made just underneath the surface of the ground, care being taken not to injure the unseen shoots.

Where plants are affected with rust, spray with soap Bordeaux mixture, which is made up of four pounds copper sulphate, four pounds of fresh stone lime to 40 gallons of water adding four pounds of dissolved laundry soap. As a prevention, destroy all stray plants affected with rust in the vicinity. Asparagus can be forced in winter in cellars, or hotbeds by using the roots of old plants; but these generally die after this kind of treatment. It is advisable only to use plants from an old field which is to be plowed up.

Some of the best varieties are: Early Argenteuil, Conover's Colossal, Palmetto, and Columbian Mammoth White.—R. S. Herrick.

SCREENS FOR CABBAGE SEED BEDS.

A year ago the growers of cabbage plants suffered severe losses from the ravages of flee beetles which ate little round holes in the seed leaves, causing them to shrivel and the plants to die. The beetles causing this injury are tiny, black insects, which have the habit of dropping to the ground, or pumping from the plants when disturbed. They delight in bright sunshine and the most severe injury is done on warm, sunny days.

Turnips and radishes are also attacked. Some years it is almost impossible to get a stand of these vegetables.

In the open garden some relief can be obtained by dusting the leaves of the young plants with air-slacked lime, or better, with insect powder. The latter remedy is rather expensive, but a very good one in small garden patches.

When cabbage plants are raised in beds, either in hot beds or the garden, the beetles may be kept from them by the use of screens made from cheese cloth. A light wooden frame should be made, extending about two feet above the surface of the bed. The cheese cloth is stretched over this, extending to the ground on all sides. The edges that touch the ground may be lightly covered with earth to prevent the beetles from finding their way beneath. The cost of this method of protection will be in the neighborhood of twenty cents for each thousand plants raised.—S. Arthur Johnson, Colorado Agricultural College.

Potatoes at Tacoma, Wash., are selling at $35.00 per ton.

WELL SATISFIED.

El Centro, Cal., May 11, 1908.

Mr. John Schilling, Jr.

Dear Sir:—Enclosed please find check for Auto-Fedan press. The press is all you claim. You can refer to me as a well pleased owner of an Auto-Fedan. I have the only press in the Imperial Valley.

Yours,
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How's that for a proposition? If I did not have best spreader I would not dare make such an offer. 20,000 farmers have stamped their O. K. on it. They all tried it 30 days free just like I ask you to try it—30 DAYS FREE. **Five Sizes—Including New Complete Steel Gear Spreader—70-bu. Size.**

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and Berry Plants, all the leading sorts.

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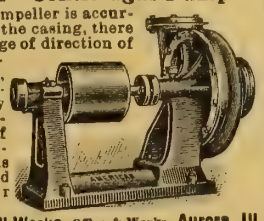

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Our **Hydrated Lime Department** is constantly gathering practical and scientific data on use of **Hydrated Lime** as soil **Fertilizer, Dust spray, Etc.** which is at your disposal. References furnished showing great **Efficiency** and **Economy** in its uses. Correspondence solicited. Write for sample and prices to

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Write us for prices.

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The Ornamental Garden

HOW TO GROW ROSES.

To grow roses successfully one need not be an expert gardener, but conditions of soil, planting and care must be observed. Roses do not necessarily need a rich soil. Heavy or clay soils are not as well adapted to roses as loam or sandy soils, but even in the latter the matter of good drainage must not be neglected. Granite soil needs enriching and plenty of cultivation, and the the heavier black soil needs mulching with coarse stable manure. We must use our judgment and common sense at the outset, and see that the bushes we buy have a fair start. If you have a loose, loamy soil, well and good; but if not, then spade and fork in well a good quantity of stable manure, and if possible add a load or two of river sand. See that it drains well after a rain. A soggy soil is not good for roses. Commercial fertilizers are an excellent help to poor soils, and are always the best to use, as they have no seeds in them which will later produce an abundance of weeds.

Having bought your roses, preferably two-year-old plants, mark out your ground so as to give the roses plenty of room, three or four feet apart each way, four is the better distance, as you do not want to move your bushes when they are six or seven years old. If possible learn something of the habits of growth of your bushes, and put the climbers where they can be trained up, and the more rapid growers of the bush roses alternating with those of slower growth. Hedges of any one variety are very effective and also very much in vogue.

Having marked out your ground, make holes about eight inches across and deep enough to cover the root depth of the plant you have marked for that spot. Spread the roots so as to give them as much chance as possible to get a large amount of moisture from the earth. Plant the roses a little deeper than the marks shown on the bush, as the soil will usually settle a little. Fill the hole level with the top of the ground and press firmly around the stalk. If there is any dead wood, be sure to cut it off, and it will do no harm, if the bush is large, to cut back a few inches of the live wood, so as to make it easier for the rose to start its growth, in the new location. If your planting is done in February or March no watering may be necessary, but if the ground is dry it must be kept moist by watering each day in the evening. The small rose bushes, 1-year-old cuttings, which are sold 15 or 20 for a dollar, do not require as large a hole for planting, but otherwise they require the same care. Those who desire to grow roses from cuttings can do so by obtaining the cuttings in December or when dormant, and setting them out in a cool, shady place until they are well rooted. A great many varieties are easily grown from cuttings. Most of the 2-year-old roses are budded on wild stock. When your roses begin to grow, watch for any wild shoots, and as soon as you are sure as to their nature, nip them off close to the parent stalk. If allowed to grow, they will act as suckers and retard the growth of the true rose. One-year-old bushes should only blossom sparingly. A little sacrifice the first year will be more than repaid by finer roses and better development of the plants themselves in the second year. Some roses will stand more sun than others, and you must therefore watch your bushes and if your first location is not right, change to the one which seems better suited. All roses need sunshine and do not like to be crowded. Cut out all puny or sickly wood at any time of the year, and when you are doing your Spring pruning leave only the stocky and vigorous branches, and prune for an open bush. Use common sense and keep your eyes open, and your experience will soon teach you the rest. Remember the old adage: "If at first you don't succeed, try, try again."—Portland, Oregonian.

A MORE BEAUTIFUL AMERICA.

In an address on beautifying American scenery, President McFarland of the American Civic Association said:

"It is not surprising that the path which broadens into the betterment and beauty of our ideal America is alive with the thorns of thoughtlessness and indifference, and that there are in the way not only the rocks of ignorance and custom, but the fighting giants of selfish private interest and entrenched special privilege. The practical civic warriors who tread this anything but sympathetic and easy way seldom meet direct hostility to the end in view, but they do encounter constantly sharp resistance to definite progress toward that end.

"The billboard man, the producer of wasteful black smoke, the Niagara power promoter, the careless miner and lumberman, the erector of the network of wires—all these will subscribe promptly to the doctrine of 'a better and more beautiful America,' but they as promptly fall afoul of the progress toward that end which interferes in the least with their gainful occupations.

"Under this condition, the work of the association necessarily must be definite and practical to succeed. It must and it does educate the men and the interests it seeks to change into factors for the public good, endeavoring to have them see their greater advantage in promoting the health, happiness, and efficiency of all. Aside from that mushroom of advertising, that parasite upon legitimate business, the billboard horror, every interest touched by the uplifting work of the American Civic Association is directly benefited, not only in the immediate economic result, but in the general sum of increased human efficiency. The factory owner whose chimneys have been rendered smokeless can contemplate the saving in coal, while he himself breathes with pleasure the purer air that results. The corporate owners of the mazes of overhead wires are not insensible to the beauty of the poleless highways any more than they are regardless of the largely decreased cost of maintenance which results when they have been forced to put their wires underground.

"Therefore, our work is strong in education, in inquiry, in suggestions and co-operation, in dealing with those who are, mostly through no definite thought of wrong, in the way of an advance toward the more beautiful and the more efficient America."

CRIMSON WINTER RHUBARB

$1.50 a Dozen, $6.00 per 100, $40.00 per 1000
March April & May, best time to plant Rhubarb.
Berry Plants of All Kinds.

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Balled in moss and leaf mould. Need less water and can be planted later. Uniform size and being balled have fine roots. Fine to grow. Boxes of 100, sample lot, in flats and protected tops, only $1.60. Try them and you will use no other. Write for circular and special prices on large lots.

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Roses Shrubs
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Improved Casaba Seed

I am the originator of this superb melon. It is reasonable to suppose I have the best seed. The melon is the best. The seed is the best. Price $2.50 per pound, or 25c an ounce.

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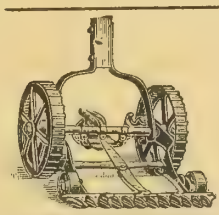

THE CLIPPER
Will cut tall grass and weeds and do all the trimming along the walks and drives.
Your dealer should have them—if he has not drop us a line and we will send circulars and prices.
Clipper Lawn Mower
Dixon, Illinois.

Seeds & Plants

Write for free Catalogue.

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The strongest and best ever produced in America, it precedes all others in pumping. A full line of repairs for all style mills kept on hand. Look up your agent in your location for Woodmanse mills. If you have no agent write direct and I will gladly answer all correspondence and send circulars.
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GROWERS AND IMPORTERS OF
Grass, Vegetable and Flower Seeds
All Kinds of Bulbs and Onion Sets
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Send for Catalogue. Please mention Cultivator.

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Plant Seeds Suitable to the Season. For reliable information and reliable seeds, address

AGGELER & MUSSER SEED CO.
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Better and cheaper than wood.
Send for samples and prices to

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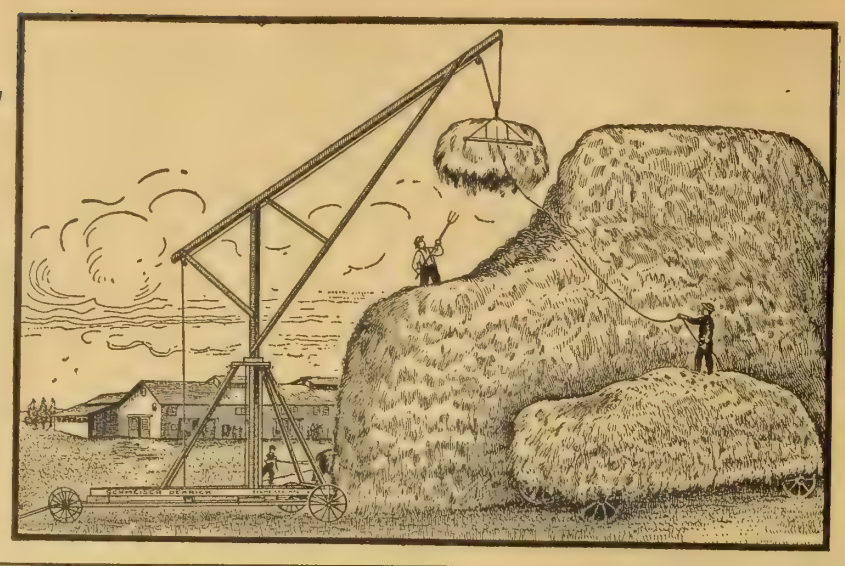
The Schmeiser Portable Automatic Derrick

The State is Using a Number of These Derricks on the Experimental Farm, at Davis, With Great Success.



No Guy Ropes Required

Any kind of a fork or a net may be used, whichever may be desired.

You can not afford to be without it. Will pay for itself the first season, every year after that doing your work for nothing. Write for descriptive circular and we will tell you how it can be done.

Schmeiser Mfg. Co.
Davis, California

General Agriculture

A BIT OF GRANGE HISTORY.

THE FORTNIGHTLY Club at Redlands is made up of a body of live people who discuss live topics at its fortnightly meetings. One of these topics at a recent meeting was a history of the organiaztion of the Patrons of Husbandry. The leader in the discussion was Thomas T. Smith and from his address we quote:

Farmers Clubs.

Prior to 1868 there was nothing in this country except farmers' clubs. They were local in character, had no connection with each other, were organized to discuss purely agricultural questions and were composed entirely of men. The conditions of life in the country, with broad acres between homes, led necessarily to a restricted social circle, and social life was lived in narrow limits, especially in the northern part of our country.

The farmers' club did not broaden the life of the farmers' family. In January, 1866, Mr. O. H. Kelley, a farmer of Minnesota, was sent south to investigate and report on the agricultural conditions.

To his mind "The people of the north and the south must know each other as members of the same great family, and all sectionalism be abolished." As a member of the Masonic fraternity he was most cordially received. Mr. Kelley says in writing to a niece in the north he mentioned "the idea of a Secret Society of Agriculturists as an element to restore kindly feelings among the people." She replied expressing great sympathy for the women of the south, and much encouraged my suggestion that an organization of the farmers of the country might prove a blessing. "The idea of association was fast getting fixed in my mind, and I remember comparing the Mississippi and its tributaries to a national organization and its subordinates."

Devastation Follows the Lumbermen.

National in Scope.

The idea of a national organiaztion of farmers having taken possession of Mr. Kelley's mind in the spring of 1866, he kept turning it over as time advaneed and in 1867 began to talk about it with some of his associates in Washington, among others, William Saunders, connected with the Department of Agriculture who joined in developing the idea. He says: "In traveling about the country, I noted a lack of interest on the part of farmers towards progressive agriculture. I found the circulation of purely agricultural papers was but one to every two hundred and thirty inhabitants, and libraries of fifty bound volumes were exceptions."

In preparing the way for effective organization printer's ink was used, and a circular was sent to men engaged in agriculture in different states.

This was done in February, 1868. That same year the work of organization commenced and continued actively for a number of years until it was planted in every state in the union. In the seventies it reached its greatest numerical strength. It was incorporated in 1876 under the laws of Kentucky which state passed "An act to incorporate the National Grange of the Patrons of Husbandry" in Dec., 1875.

Took Up Transportation.

It was about 1873 when the open conflict between the people and the transportation companies began in the west by the passing of laws in Illinois, I think, regulating rates of fare. The companies resisted and the matter went to the courts. At that time popular feeling ran high and organization was rapid. The people seemed to think they could remedy all their ills by legislation and a political organization of farmers was organized in Illinois by a Mr. Smith which attained quite a membership, and called a convention to meet in Chicago in September, 1873, and was attended by men from several states, including New York, Nebraska and Minnesota. Nothing, however, was accomplished and the organization died.

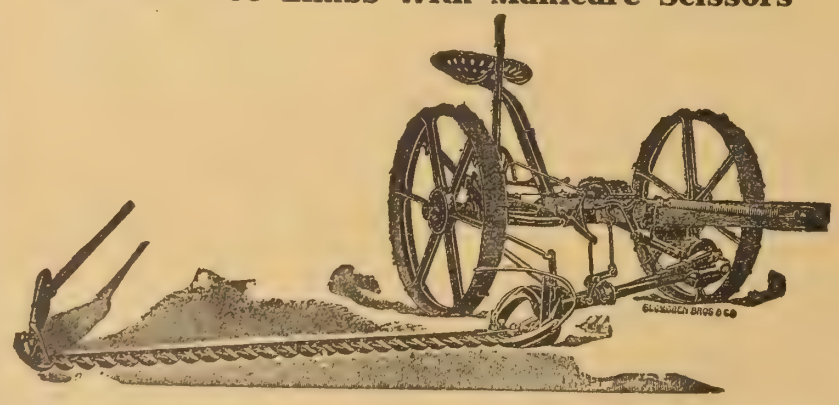
The Grange of the Patrons of Husbandry however lives on and to it was attributed, by many, the activities of the political organization. As the years rolled on and the farmers found that passing a law did not correct a wrong they looked to political organization again to right matters, rather than by the slower process of education which the grange advocated, and

Did You Ever Stop to Think

That the Lightest Looking Mower Is Very Apt to Cut Heaviest;

ALSO

That Only a Very Foolish Person Will Try to Cut Tree Limbs with Manicure Scissors



The New Standard Mower

All power in a Mower originates from the grip of the wheels on the ground,—the firmer the grip the greater the cutting power.

The 5-foot New Standard Mower weighs 825 pounds. The entire weight of the cutter bar (while cutting) is transferred through the suspension spring to the main wheels. The bar is neither pulled nor pushed,—it is carried—an exclusive Standard feature.

The power thus secured is transferred to the gearing through the mechanically perfect wheels, found only on the New Standard Mower. The gearing develops high speed without undue strain and passes the power to the knife. The knife works in our famous curved Cutter Bar,—the only frictionless knife channel made.

These are a few reasons why the New Standard Mower is the most powerful cutting mower made.

A folder giving full detailed description of the New Standard Mower and our other Haying Tools will be mailed free on application.

Newell Mathews Co.
200 North Los Angeles Street
Los Angeles, California

The Farmers' Alliance was formed and existed in the Middle Western states and held its own for a number of years and drew largely from the membership of the grange. Very many of the subordinate granges closed their doors throughout that section. The grange however worked on in its quiet way.

ARID AGRICULTURE.

The latest addition to agricultural literature of the West, is "Arid Agriculture," a hand book for the Western farmer and stock-man, written and published by B. C. Buffum; Manager of the Wyoming Plant and Seed Breeding Company, Worland, Wyoming. The purpose and scope of the book is given in the "Foreword." "The purpose of this volume is to furnish plain facts in a plain way about the practice of agriculture in the arid region. Whatever its shortcomings, the reading matter here presented is new and original. It has been carved out of a quarter century of experience, observation and study in the dry parts of the West. No attempt has been made to compile scientific data or write a cyclopedia. We have tried to present enough of the practice and underlying principles of arid farming to enable any intelligent man to 'make good' on a Western farm. We feel that this book will, in a measure, meet a 'crying need of the hour.' The West is now rapidly settling up with new farmers and new stockmen whose measure of success is proportional to the quick and reliable information they are able to obtain. Books on agriculture written from the viewpoint of the farmer or scientist in the humid East, generally are good books, but they do not supply the arid farmer with the most important facts. In the present book we try to give some idea of soil tillage and crop production in the arid region."

The book is not given entirely to dry farming and its principles, though that science is given the first and greatest attention. After discussion of dry farming, irrigation and crops for such conditions, some space is given to crop destroyers, to live stock and to home building.

The farmer who is bringing his land to the best tillage and doing it under arid conditions, will find much of interest in Prof. Buffum's book.

SPRINGS IN CALIFORNIA.

If Yellowstone Park, which contains so many geysers and other hot springs, is left out of consideration, California ranks as the first State in the Union in respect to the number and variety of its springs. Many of these springs find their most important use for irrigation, many others are well-known resorts, and still others, which have not been exploited, yield waters whose curative properties are probably as valuable as those of the famous springs of Germany.

In connection with its study of the underground waters of California, the United States Geological Survey has undertaken to make a systematic investigation not only of springs used as resorts and of those whose waters are bottled for table or medicinal use, but especially of those that are large enough to be the source of water for irrigation. For this purpose the southern half of the State was examined during the fall of 1908; the northern half will probably be studied during the coming summer.

ALFILARIA AS A FORAGE PLANT.

One of the principal lines of experiment station work in the Southwest is the study of various forage plants, either introduced or indigenous, as means of restoring the overstocked range or otherwise increasing the forage production of the grazing areas. During the last five years the problem of range improvement has received particular attention in Arizona, where the experiment station, working partly in co-operation with this Department, has secured results showing the practicability of improving the ranges by the introduction of forage plants adapted to the region, by encouraging the dissemination of all species of economic value, and by proper management in general.

Of the introduced plants, alfilaria, also known as alfilerilla, filaree, pin clover, etc., is so well adapted to the prevailing climatic conditions and has proved itself of such great value as a range plant that it is considered as ranking first in merit. The plant is a native of the Mediterranean region and was presumably introduced into California by the early Spanish explorers. It is at present permanently established in Oregon, California, Nevada, Arizona, New Mexico, Utah, and parts of Washington, Idaho, and Texas, an area having generally mild climate.

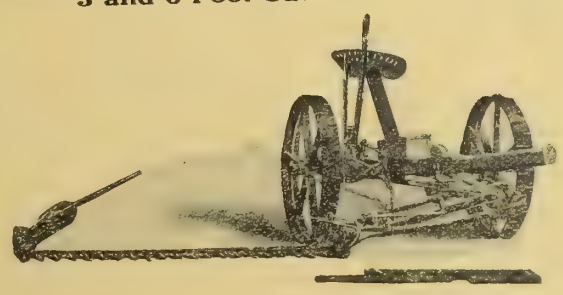
The Farmer's Union of Washington is attempting to force a "terminal rate" for Pullman, Wash.

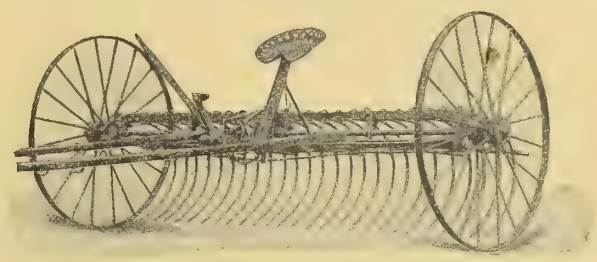
MARKING NAME ON STEEL TOOLS

It's easy. Just take a little tallow or beeswax, belt it and spread over the place on which you want your name. Write the name down through the wax with a big needle or awl and pour a few drops of nitric acid over the letters you have made. Leave for a few moments, then wipe off the wax and your name will be on the year after year, without every little while making deposits which should give them a working balance. The same principle applies in agriculture, and the farmer who is succeeding now, and who is to succeed in the future, either in America or any other country, is the one who deposits the elements of fertility in the soil, as he deposits money in the bank, in greater amount than he draws out.—Iowa Homestead.

ACME GIANT MOWER Not in the Trust **ACME LASSIE SELF DUMP HAY RAKE**

5 and 6 Foot Cut — 10 and 12 Foot





The Greatest Grass Cutting Machine on Earth
No Side Draft. No Neck Weight. No Lost Motion.

Represents Perfection in Rake Construction
Improved Wheels, Teeth, Self Dumping Device, Relief Spring

We sell these Mowers and Rakes under the strict guarantee to do as good or better work than any other machines on the market or ***Your Money Back.*** Can you ask for more?

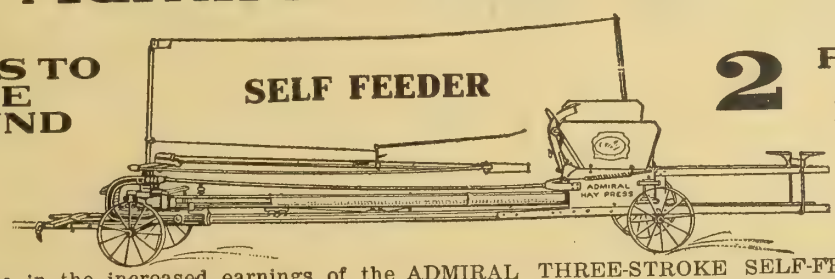
5-Foot Mower, $62.00
6-Foot Mower, $65.00
10-Foot Rake, $34.00
12-Foot Rake, $37.00

WE PAY THE FREIGHT For a limited time, we will pay the freight charges to all points within 125 miles of Los Angeles on any of these machines at the above net cash prices.

Southwest Supply Company **The Racine Line**
127 South Los Angeles Street, Los Angeles, Cal.

An Admiral Without Cost

3 FEEDS TO THE ROUND — **SELF FEEDER** — **2** PROFITS IN HAY BALING



The difference in the increased earnings of the ADMIRAL THREE-STROKE SELF-FEED PRESS more than pays for the press in one season, at a conservative estimate of 2½ tons per day over the old style two-beat, foot feed press, besides the ease of labor on both men and team, and better work. Let us figure a little to convince you.

2½ Tons per day for one week, 15 tons at $1.50 net	$ 22.50
One month's earnings over the other press (26 days)	97.50
On an estimate of five months' work out of the year	487.50

The above gain with the ADMIRAL more than pays for the press.

New Century Hay Presses, Specially Built, Season of 1909, $250. All kinds of Wagons, Buggies, Implements, Tools, etc. Catalogues upon request.

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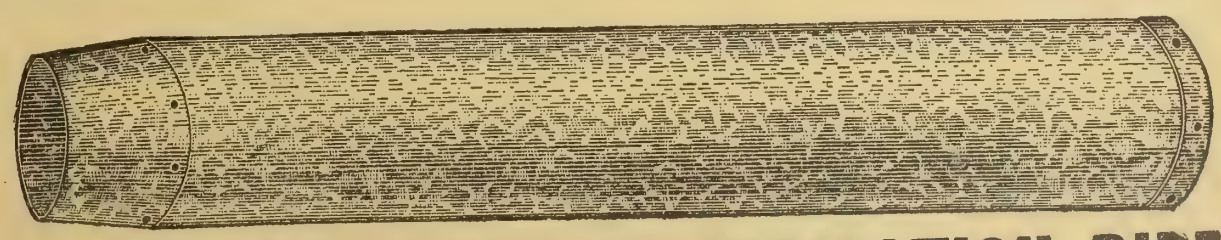
Cut Rate Carriage and Implement Dealers, Los Angeles, California



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SAVES WATER, GRADING AND TIME

The **only** way to **irrigate Alfalfa. Cheaper** than **Flumes.** This is only **one** of our **specialties.** We make **Riveted Water Pipe** in lengths of **ten feet** from **single sheets.** Let us **prove** to you that we make **Pipe** and **Tanks right.** WRITE FOR CATALOGUE.

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FORMERLY TALLERDAY MANUFACTURING COMPANY
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Dampness and draughts are deadly to chickens. A dry atmosphere and an even temperature are absolutely essential to health and productiveness in poultry. Poultry houses roofed and sided with

REX
FLINTKOTE
ROOFING

have protection not only against wind and rain, but also against extremes of temperature, dampness and humidity

REX Roofing is a non-conductor of heat and cold as well as being storm-proof and wind-tight.

REX Roofing has great durability because it is made of dense, long-fibre wool felt, thoroughly impregnated with weather-resisting compounds Any farm hand can put it on.

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OUR FREE SAMPLES AND BOOKLET

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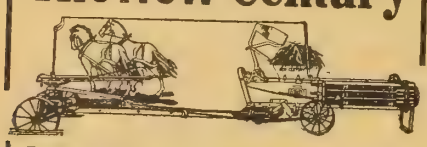
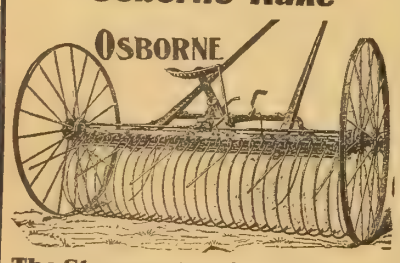
The New Century



Self Feed Hay Press, the most modern **Hay Press** on the market. Write for illustrated circular.

Osborne Rake



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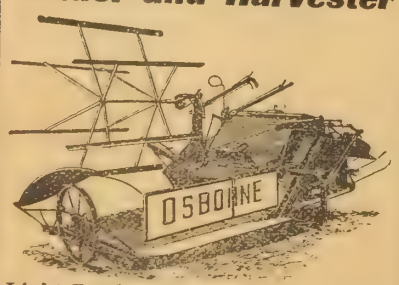
The Osborne Binder and Harvester



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If your dealer cannot supply you with these goods buy from us direct.
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Keep Profits at Home. We'll Show You How.
CANNERS' SUPPLY CO., DETROIT, MICH.

California Farm Names

REGARDING the registration, or securing copyright privileges for farm names under the act recently passed by our state legislature and later signed by the Governor, we quote as follows from a letter from Secretary of State Curry:

"We have not yet drawn up a particular form for registering farm names. This act does not take effect until sixty days from Mar. 8, 1909, the day of its approval. The form, if we decide to make up a special form for such, will be about the same as the ordinary form. Enclosed please find our regular form for registering trade marks. In a few days, we will write you more definitely about the matter. This new law, as far as we can ascertain, is for the purpose of allowing a person to register for exclusive use a farm name without reference to protecting the farm name merely in connection with products raised on such farm. The law as it was previously, would protect the farm name as a trade mark for products raised upon such place."

As we understand it, this law is merely an amendment to one formerly passed and gives but little additional privilege and secured under the other excepting in application of the name to the farm. Accompanying the letter from the Secretary of State was a blank used in making application for the trade mark, as may be seen in the quotation given above from the letter it is possible this same form may be used. If not, the Secretary will have proper forms printed in due time. It will be noticed that the act does not take effect until sixty days from March 8th, which leaves some two or three weeks from this time before application may be made. As noted, the Secretary of State will give our subscribers further information as soon as the line of procedure is definitely established. It is evident, however, that the first step to take in the matter of securing this privilege will be the application filed with the Secretary of State for blanks.

We trust this act will give an impetus to this delightful custom and are sure that where a ranch is determined to make a record for putting up a fine pack of fruit that such name may be made of real commercial value to the ranch.

Amongst the names recently sent in we may quote the following:

"Greenwood Ranch," owner, C. E. Garrett, Hynes, Los Angeles county, California.

"Highland Home," owner, John Carlson, Selma, Fresno county, California. Mr. Carlson writes: "I am much in favor of the agitation for naming of farms. I think it will receive an impetus from the fact as you mention of the enactment of a law providing protection for the name. We have named our place "Highland Home." It is a forty acre tract and is two miles north of Kingsburg and three miles southeast of Selma. The name is descriptive, as the buildings are erected on a slightly knoll or high plateau in the center of the place. We have a fine view all over the surrounding country, of which the Sierra Nevada mountains form the background. Our products are fruit and poultry. I find the Cultivator a most instructive and useful paper and wish it to come to our ranch home, so ask the address to be changed to simply "Highland Home," Selma, California."

"The Four Waters," owner, Capt. H. Anlauf, Santa Paula, Ventura county. Capt. Anlauf writes: "The reason why I named my ranch 'The Four Waters' is because there is supplied from mountain springs almost all pure snow water. From these springs we irrigate one of the most beautiful orange groves in the state, located about five miles north of beautiful Santa Paula. In addition we have a flowing oil well which also produces sufficient gas for lighting, cooking, and heating, which is manipulated under the most scientific arrangement. Topographically this ranch, of one hundred and fifty-eight acres, is so formed by nature and snuggled in the mountains that it is practically without wind, fog, and frost. For the last thirteen years since established, has required no fumigating, spraying nor fertilizing and never required any frost protection. With a new house to be built this summer and a several thousand dollar orange crop just sold on the trees, we are a happy family on 'The Four Waters.'"

"Rancho Kielyenso," owner, Wm. Kiely, Lawrence, Santa Clara county.

"The Louisiana," owner, F. A. Louis, Lankershim, Los Angeles county. Mr. Louis has a variety of fine fruit in the center of the beautiful and fertile San Fernando valley with grand mountain scenery to the north three miles distant. He highly appreciates the serviceable feature of the Cultivator in encouraging naming of the farm. He has selected the name "Louisiana," which includes his own name.

"Shasta View," owner, J. H. Walker, Olinda, Shasta county. "Shasta View" is a berry and poultry ranch and writes the Cultivator on neatly printed stationery.

"Black Mountain Ranch," owners, Warriner & Son, La Mesa, San Diego county. Messrs. Warriner & Son write on stationery at the head of which is a half-tone illustration of the ranch packing house and are interested to know of the steps to take to secure a copyright privilege.

Under a Covina Umbrella Tree.

TROUBLESOME SAGE-BRUSH.

Destroying sage-brush is a tough problem for the new-comer into irrigation districts.

Much interest has been aroused in the various parts of the West about the appearance of a new attachment which can be used for cutting off the sage-brush about four inches below the surface.

It consists of three parts. Two steel blades and an upright. The latter is tough spring steel, one-half inch thick, five inches wide and 30 inches high. The front edge is sharp. Two keen edged blades or knives are bolted to the bottom. These extend right and left like wings at a sharp angle, and are 30 inches long.

This attachment is tied to the pole of the 20th Century Grader, a machine which is now very popular in the irrigation districts for cutting and cleaning laterals, and making shallow ditches. Also for land leveling, border making, road grading, seed bed making, etc.

People who have seen this attachment say it is just the thing. "Now we can grade, level, ditch and cut sage brush with this one machine."

The Baker Mfg. Company, 731 Fisher Building, Chicago, Ill., are sending out a brand new catalog full of pictures, showing ditching scenes, giving articles on farm drainage and irrigation work, and excellent articles on road grading, etc. This catalog is free and will be sent promptly on request.

Profit in the Poultry Yard

By Mrs. Frank Metcalf

We solicit short articles of a practical nature from the fancier and utility breeder, giving their experience with poultry. All inquiries pertaining to feed, management, disease and its prevention will be answered through these columns.

POULTRY RAISING FROM A WOMAN'S STANDPOINT.

We have just completed our breeding pens for another season. We always enjoy this work of selecting and mating our breeding pens about as much as any one part of the business. Especially is this true if one has some particularly nice birds to place in these pens. It is always very interesting to a true fancier to select and mate with an idea of best results from his own birds. The male must be selected with the idea of strengthening any weak points of his females, and the females must be selected to help out the same in the male. Of course, if one is so fortunate as to have birds with no weak points, it will not be so much of a task to select one's breeding pens, but very few of us are so fortunate, the ads of a amateur, and by this I mean to say, one who has never had the least experience with small chickens, to start with eggs. They may hatch the chicks all right, the modern method of incubating makes this matter of hatching very simple, but when it comes to raising the little fellows it is quite a different matter. Often a party has purchased the complete outfit, incubator, brooder and eggs, and has taken off a very good and satisfactory hatch, but before the third week all of the chicks have succumbed to the fatal disease, "ignorance," and the beginner has nothing left but the outfit and the experience. For this reason, I think, perhaps, it is wiser to start with a small flock and hatch your owns eggs, as you are sure to have the flock left, and have them to fall back upon. Then, again, they

Classy Mediterraneans.

number of prominent breeders notwithstanding.

As yet no breeder has ever succeeded in raising a perfect specimen, and when this comes to pass to us the pleasure of poultry breeding will have lost all of its delight. It is the striving to better one's flock, year by year, and to bring them as near the perfection mark as possible that is so entrancing. And for this reason I say that the mating of the breeding pens is one of the most interesting features of the business. A good many well-known breeders employ poultry judges to mate their pens, but when they do this they lose a good bit of pleasure and interest in their birds. It makes the work interesting all the year noting the results of the matings. It is interesting to watch the chicks from different matings develop and to note which are making the best birds.

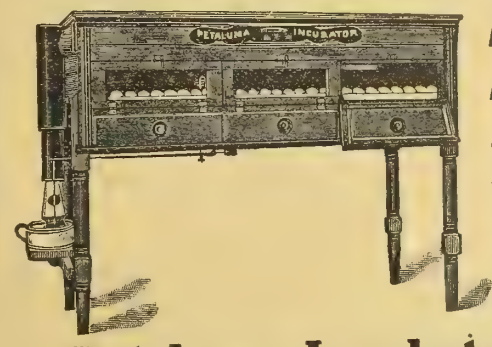
The question is often asked, "Which is the cheapest and best way to start, with stock or eggs?"

This all depends upon the experience the beginner has had and the conditions under which they will operate. I never feel like advising an will lay enough eggs to help buy the grain required by the growing chicks as well as for themselves. If one has had any experience with feeding and caring for small chicks, or even if one has not, but is not afflicted with know-it-all and is willing to profit by the experience of those older in the work, they will succeed with eggs. It is a strange feature of this "hen fever" that nearly all who contract the fever are afflicted with a symptom that is very hard to combat, and that only time can cure; that is, the idea that they know just all there is to it. I speak from experience, and am frank to confess that at the end of the first year in our "career" we believed that we knew it all, and if there should happen to be any "little thing" that we had not learned it simply was not worth learning. But this symptom gradually left us year by year, until now, after having been continually in the work for fourteen years, we are very glad to have help upon various subjects relating to poultry, and always read and listen with interest to anyone's experience. If you have had any experience and wish to add new blood to your flock, it is decidedly

Don't Forget Quality

MIDLAND Poultry Food

Is based on ***quality*** and it is quality in Poultry Food that produces eggs. ***Cheap filler*** and ***cheap grain*** will ***not*** make eggs. ***Midland Poultry Food*** contains only the ***choicest*** cereals and animal food the market affords. You ***can't*** afford to try and be successful and not get results. ***Midland Poultry Food*** will produce results. Try it and see. $1.95 per sack



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Are still here, after others are gone. ***The Standard of the World Machine.*** Winners of ***more prizes*** awarded by ***World's Fair Judges*** than any other make.

Remember, we make a hot water machine. One of the ***best hot water machines*** on the market.

Send for our Illustrated Catalogue.

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Our General Agents for Incubators and Brooders and Midland Poultry Food:
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We have the MOST COMPLETE and up-to-date supply house on the Pacific Coast. We are agents for the Petaluma Incubators and Brooders, Midland Poultry Foods, etc. We have everything required for Poultry, Stock, Dogs and Birds. Send for our catalogue; it is free.

Berrar & Robertson, 103 East Santa Clara St., San Jose, Cal.

When the chicks are hatched don't feed them anything for 24 hours, then feed them the best dry Chick Feed you can get. We say that is

West Coast Chick Feed

SAMUEL R. KELLAM, former president of the L. A. Co. Poultry Association, says: "West Coast Chick Feed is the best feed for young chicks I have ever used. I have given this feed a thorough test, and have always found that it produced fine, large, healthy chicks."

MRS. A. BASLEY, the celebrated poultry authority, says. "I want some more of your West Coast Chick Feed, for it is excellent. It is purer, cleaner and appears better balanced than other feed I had been using, and to tell the truth, I have been experimenting, feeding both together, and they always eat yours in preference."

Ask your neighbors, for there is more of "West Coast" sold in Southern California than all other kinds put together. If not sold by your dealer send us $3.50 and we will send a 100 lb. sack, freight prepaid within 300 miles.

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PRODUCES STRONGER HEALTHIER CHICKS THAN ANY HEATED BROODER
FULLY GUARANTEED
NO LAMPS. NO OIL BILL. NO DANGER OF FIRE
WRITE FOR ILLUSTRATED BOOKLET AND DELIVERED PRICES
Coulson Co. GEN. SALES AGTS. BOX C. PETALUMA, CAL.

S. C. White Leghorns

(D. W. Young Strain)

Utility Birds, Eggs for hatching $5 per 100. ***Special***—I have a pen of hens testing (Hogan System) 190 and over eggs per year, mated with a male that took 2nd. at L. A. that Mr. Hogan says is a wonder. Eggs from this mating $2.50 per 13.

The Show Poultry Farm

Route One ***Santa Barbara, California***

"Old Trusty" Incubators

120 Egg Size $10.90
165 Egg Size $12.75
240 Egg Size $15.90

WE PAY FREIGHT

Now is the time to get a bargain. Send for 180 page book. Only a few machines left.

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The Only Original Dry Chick Feed for Baby Chicks

Mamma And The Babies
All Raised on
CHAMBERLAIN'S PERFECT CHICK FEED

Write for Prices, Booklet, or name of nearest Agent.
W. F. CHAMBERLAIN FEED CO.
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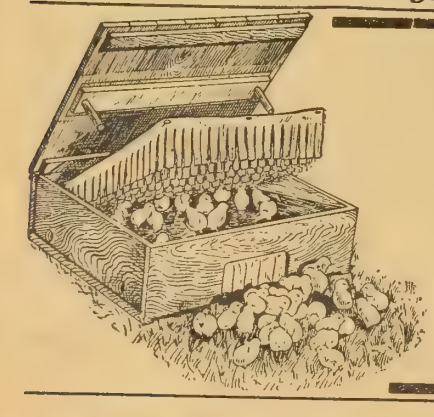

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Petaluma Incubator and Brooders, fireless brooders, Midland poultry food. Steinmesch chick feed, Swift's beef scraps. Send for our large illustrated catalogue of poultry supplies and seeds, it is free.

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So. Cal. Agents for Petaluma Incubators and Brooders and Midland Poultry Food.

ROSENEATH EGG RANCH
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WYCKOFF S. C. WHITE LEGHORNS

Eggs $1 per 15, $6 per 100, $50 per 1000. Day-old-chicks 12½ cents each, $10 per 100, $90 per 1000. Book your orders early to avoid disappointment.

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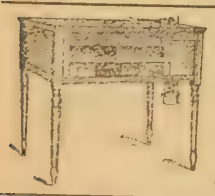

WHY?

Do All Prosperous Poultrymen Use
Jubilee Incubators and Brooders
Our Catalogue A Will Tell You. It Is Free.
Jubilee Incubator Company Sunnyvale, Cal.

Single Comb White Leghorns

The first essential to success in the poultry business is that the foundation stock or eggs be purchased from a reliable breeder, one who has made a success of the poultry business from the fact that his stock has proven to be the Business Hen. Such stock or eggs we now offer you and stand back of our sales. Prices for stock or application. Correspondence solicited.
Eggs—$1.50 per 15, $7.00 per 100 and $60.00 per 1000.

STUHR-WILLIAMSON POULTRY CO.
378 Bandini Ave. Home Phone 1490 RIVERSIDE, CAL.

the cheapest to do so by purchasing eggs, but be sure you buy these eggs from a reliable party, one who will send you what you pay for and who does not use his own eggs for hatching his own birds, and fill his orders from eggs that he can pick up around the country. The men and women who are in this business are, as a whole, a fine lot of people, and true ladies and gentlemen, but, like all other trades, it has its imitators and crooks, and all you have to do is to sift the chaff from the good grain and you are safe.—Successful Poultry Journal.

PREVENTION OF ROUP.

The fundamental cause of roup can always be traced to filth of some kind; it may be no fault of the owner of the poultry, since the birds may eat putrid food while out on range, when visiting a neighbor's premises, or when exhibiting at some poultry show; but usually the trouble lies in the home poultry quarters, especially if the birds have not free range. The source of infection may be in the water, the feed dishes, the yard or other places where the fowls are confined; for this reason it is imperative that the premises and vessels be thoroughly cleaned as soon as any trouble is discovered. After being made pure, the whole place may be sprayed with

a 5 per cent solution of carbolic acid in water, care being taken to fill every crack, as well as the whole surface of walls, ground and floor.

The yards should be spaded up or plowed and planted to some crop, such as mustard, turnips, rape, clover, or, in fact, anything that is quick growing. If the yards are small, and the fowls would prevent the young plants from growing, one-half of the yard may be sown, and then covered with poultry netting held up from the ground about six inches by a framework of wood; the fowls can then pick the leaves as they reach the wire, but will not be able to injure the roots of the plants.

As for the affected birds it is doubtful if any remedy would pay to apply, unless they are very valuable fowls, and as long as they remain on the place the owners runs the risk of having still more fowls sick by coming in contact with them. However, whenever it is desired to save them they should at once be removed some distance from the healthy ones, fed a well-balanced ration, containing a small proportion of meat. None of the remedies recommended have been found satisfactory so long as the cause of the trouble remains, but by evaporating oil of turpentine in a close room, so that the birds will be forced to breathe the vapor, is one of the most commonly applied remedies.—New England Homestead.

Never use for breeding, fowls that are or have been afflicted with disease.

INCUBATOR DIRECTIONS.

Every incubator maker sends directions how to operate the machine he makes to every one who buys them. Presumably the man who makes an incubator knows better how to use it than any one else, but there is some room for criticism in that the directions take no count of the differences in humidity as the season varies, as the altitude changes or as the climate differs. Very often we have 60 and even 70 degrees of humidity in the vicinity of Chicago while in Nevada the weather reports show that the humidity ranges as low as 3 degrees and this extreme dry condition of the air is common over several of the far western states or a great part of them.

If moisture has anything to do with the hatching of chicks a difference of 65 or more degrees in the humidity of the air would certainly make some difference in the hatch. Our attention was called to this by Mr. Wesley Clow, of Nevada, and we are glad to be able to warn those of our readers who live in the dry sections of the country that more moisture is needed where humidity is low than where it is high. Mr. R. W. Williams is another Nevada incubator operator who uses non-moisture incubators but finds it necessary to supply moisture in order to get the best results. Those who live west of the Rocky Mountains and south of the rainy belt next to the sound country should remember that directions made for use in a humid country do not fully apply in their cases and they should supply moisture in their incubators.—Poultry.

Sex of Eggs.

I noticed recently what you said regarding determining the sex of eggs. I would like to give my theory hoping it may be tested and the results given in the Cultivator. We notice where eggs have hatched they are nearly evenly divided between the males and the females . Why are they so evenly divided.? I believe that the first half of the eggs, or those laid in the earlier part of the season are more liable to hatch pullets, while those which were laid immediately before the hen becomes broody, will produce more cockerels. In other words, to secure pullets set the eggs laid in the earlier part of the laying period. While if one wishes fryers and broilers, set the later laid eggs.—J. N. Shank, Reedly.

FEEDING GREEN BONE.

Fresh, green bone is an egg-making food that can be fed regularly and systematically at a very small cost. The bones must be green and fresh, not the dry ones that may be gathered up, or those that have come through the soup or the boiling pot. Such have parted with most of their valuable elements for egg, feather and flesh production. The ribs with particles of meat adhering are all ready to be cut up, and make the ideal food. The relish with which hens devour the product indicates the important part it is to play in the production of eggs.

When lice come in at the door of the henhouse, the profits fly out of the window.

The food and water troughs should be scalded out occasionally to kill disease germs.

LONG DISTANCE ORDERS.

Mrs. Frank Metcalf writes us that she sent thirty eggs to Honolulu, in January, and the lady who received them there reports that she got eighteen fine healthy chicks from them after their long journey. Apparently Mrs. Metcalf knows how to pack eggs. She says these were packed in a common peck basket with excelsior in the bottom and each egg rolled in cotton batting, all of which is covered with excelsior, then another layer of eggs, more excelsior and so on. Then the top is covered with muslin drawn tight over all. Apparently they had careful handling on the route.

POULTRY QUERIES.

Feeding Milk.

Is it harmful to feed to chickens, hens and growing stock, the cheese which forms on skimmed milk, without boiling or heating? Please answer the above question in your journal and very much oblige.—G. Z.

The danger would depend mainly upon what sort of vessels the said milk and cheese stood in; the acid formed by milk souring in some metal vessels, say tin and copper or brass, corrodes and forms a very virulent poison, which results in ptomaine poisoning. If fed in clean crocks or wooden utensils the danger is not so great. Moldy milk or cheese should never be fed to fowls and the safest way is to heat the sour milk to the boiling point, then mix stiff with two thirds bran to one third cornmeal in a crumbly mass.

I have soaked wheat in milk over night and brought it to the boiling point, then stiffened with the bran and meal with excellent results, but it meant work. Still if one has a large kettle on the back of the range this will heat while breakfast is being cooked, and not make extra fuel necessary.—Mrs. F. M.

Hen Died.

Will you please tell me through the columns of the Cultivator what was the matter with two of my hens. The night before they went to roost apparently perfectly well, and the next morning they came out of the henhouse looking very droopy and with pale combs. By noon they were dead.—M. C. S., Duarte.

What was in the hen-house to affect these hens in this way? Could it be that these hens roosted near a corner that was filled with millions of mites, which sucked the life-blood out of them in one night? Such things have happened and the nest of mites may be found between the joints where two boards lap rather loosely together, in handfuls.

The hens roosting near this place would naturally get the worst of it through the night, so pour kerosene or distillate plentifully in every suspected nook or use some of the advertised lice killers freely. Had you dissected them, perhaps you might have found some cause like enlarged or congested liver, or intestinal irritation which would have helped the diagnosis, but the fact of their dying so suddenly is proof that some atcive agent was at work.—Mrs. F. M.

[Our subscribers must realize how impossible it is to give definite information without more definite information at the start. A hen that is well one day and sick or dead the next is a poor diagnosis on which to base a treatment. If the poultryman will always be observing it is possible he may see symptoms much earlier than is often done. That is, one may feel that his flock is perfectly well, while a careful examination might show dumpy hens. If this close observation is not made when the hen dies it seems sudden. But in any case an examination after death would probably give the owner some definite information. Close observation of your own stock will teach far more than all that Mrs. Metcalf can write. The Cultivator does not wish to discourage writing for information. This department is one of the most helpful. But give all the facts possible so that we may give intelligent answers.—Ed.]

Incubator Chicks.

I have been reading your articles on Poultry during the past year and have found much good from them. Many things have been a great help to me. I have a Petaluma Incubator, 324 egg size, have had two hatches. Each time out of 250 good eggs I got 128 chicks; a number would get part way out and die. I took the shells off of a few of them but they were not any good. I would like to know the cause. The incubator is in a house that is used for a brooder house. The temperature is very changeable and the heat is changeable in the incubator. I cooled the eggs five minutes twice a day after the first week, increasing the time each day until the last, when I cooled them about twenty minutes twice a day. The first week I cooled them just while I was turning them. I put moisture in the fourteenth day. I have no trouble in raising them. I lost five out of the first hatch and they were no good in the beginning, so I have not lost a good chick that was lively from the start. Should duck eggs be handled the same as hen eggs in the incubator; I mean the same temperature, cooling, moisture, etc.?—F. E. D., San Fernando.

I am inclined to believe you did not put in moisture soon enough. Those who have used the new Hygrometer claim that they get at least 25 per cent better hatches, and if so, one hatch will pay for it in the number of chicks, and more, too. Next time fill the moisture pans at the start and see if you do not succeed better.

For duck eggs, keep the temperature as even as possible in the machine; cool and air more than for hen eggs, and instead of putting moisture in the machine, sprinkle the eggs thoroughly every other day; this is a good plan also with hen eggs, as it makes the shells more brittle. When I used a hot air incubator, I sprinkled once a day the first week, twice a day the second, and three times a day the third week up to the 18th day, when I filled the pans in the machine. —Mrs. F. M.

THE APPLE.

In the last few years there has been in progress a great campaign of education among the apple growers of the United States, and one of the results of this movement was the exposition which was recently held at Spokane, Washington; a show which consisted wholly of apples and in which premiums representing thirty-five thousand dollars were awarded to the growers of the best commercial apples. The primary purpose of this exposition was to demonstrate the value of the apple as a wholesome food and to show its manifold uses and the uses of its by-products. The industry is a substantial one; few enterprises offer surer or more attractive profits. There will never be an over-production of first-class stock of either apples, cider, cider jelly or cider vinegar.

With the improvements in modern machinery, cider and cider vinegar costs less to produce than ever before, yet on account of the public demand for only first class apples, many hundreds of thousands bushels of apples are allowed to go to waste each year that might readily and easily be turned into cider for cider vinegar. The Hydraulic Press Mfg. Co. of Mount Gilead, Ohio, who are the pioneers in the manufacture of Hydraulic Cider Presses and cider and vinegar maker's supplies have kept in touch with all of the modern discoveries regarding the production of refined and clarified cider and they have recently issued the second edition of two fifty page bulletins treating of plans and processes for manufacturing cider vinegar, cider jelly, etc. This company has recently established an analytical laboratory at the home office in charge of an experienced chemist and horticulturist, for the purpose of analyzing ciders and vinegars and to advise their patrons how to produce high grade apple products and how to plant, cultivate, prune and spray, apple and peach orchards.

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HOW TO CAPONIZE.

It is strange to see how few farmers and poultry keepers know how to caponize, although I believe caponizing has been known for more than 2000 years, and yet one meets so many who seem to have little or no knowledge of this simple operation. Anyone who has traveled in France will no doubt be familiar with the popularity of the capon. The flesh and flavor of this delicate dish is indeed hard to beat.

In spite of this, however, many farmers and poultry keepers will say they cannot take the trouble or spare the time, forgetting, no doubt, the old proverb, "He that looketh for profit may not fly from labor." The operation is very simple, and can be performed by most people in a very few minutes. You will find that the loss by the operation will be very small, and those who will make caponizing a practice will be well repaid for their little extra trouble. The few who have already gone in for this particular branch of the table poultry will, I am sure, agree with me that it is well worth every poultry keeper's serious consideration.

The best birds to operate upon are chickens which have never yet crowed, and when about three or four months old is the right age. They must be starved for 36 hours or more before being operated upon. The operator should choose a place where a good light can be on the bird (sunshine if possible). The bird should be placed where the light is thrown on the side of the bird which is to be operated upon. Having secured your bird by means of two pieces of string three feet long, one end of which is fastened to the wings by fastening two half bricks (one on each string), the bird is placed on the operating table, and is now held quite firm. The small feathers from the hip bone to ribs, over the last rib, must now be fully plucked off, and the ribs and feathers should be wetted with cold water by means of a sponge (the water should be quite cold). The feathers will by this damping be kept out of the operator's way, and at the same time numb the sensations of the bird. The operator's knife should be stuck down between the first and second ribs from the hip bone, and out downwards and forwards to the end of the ribs, then turn the knife and cut nearly up to the backbone. The spreader should now be used which will open the ribs after which cut the striffin that covers the bowels. The operator will now be able to see the testicle, which should be grasped by the grippers and given one entire turn over, so as to separate the testicle from its attachment, except the spermatic cord, and pull the testicle out; and in the same way treat the other testicle. The chief danger in caponizing is in tearing the veins near the testicles, which results in the bird bleeding to death. This seldom happens, except through want of care or inexperience. Thus the importance of having a good light, in order to prevent this as far as possible.

Thus a little knowledge of anatomy in this way is very useful. One stick in the center of the incision will be quite sufficient. For all operations firmness and confidence are necessary. After the birds have been caponized, they should be kept separately for a few hours, and fed sparingly with soft food. After they have been marked in some way they may be let out; and, if well fed and are birds of the larger breeds, they will attain great weight and the meat will be found to be most delicate and delicious.—Poultry World, London.

DON'T FEED YOUR CHICKS TOO EARLY.

A reader in great distress about her chicks, writes as follows:

"My young chickens have some terrible disease. Eggs hatch well, but after the chicks are ten days or two weeks old they commence dying—get light in their heads, and are so weak they can hardly go without staggering as if drunk, though they eat hearty. Thought at first it was head lice, and applied vaseline with no apparent effect. Would you advise me to do away with the chicks, stop hatching a few months, and then try again?"

I don't think there is anything seriously wrong with the chicks, that is, no contagious disease. The whole fault, in my opinion, was in feeding too soon after hatching. This is one mistake that two-thirds of the poultry raisers make, and while earlier in the season the results are not so fatal, yet chicks at no season of the year should be fed until they are at least two whole days old. Where this rule is observed only about ten per cent of the hatches die from other causes than white diarrhoea. Nature provides for the chick's sustenance for at least three days after hatching, and feed given before that time is injurious. Think you can continue to hatch with safety if you will observe the caution about feeding too early.—Uncle Joe, in Progressive Farmer.

SOFT-SHELLED EGGS.

The production of soft-shelled eggs causes much annoyance and loss in many poultry yards. Such eggs are valueless for any purpose save home use, as they cannot produce chickens and they cannot be sent to market. There are three causes of soft-shelled eggs, the most common of which is an insufficient supply of shell-forming material. Laying hens require a generous proportion of lime in their food, as in 100 ordinary sized eggs there are more than twenty ounces of pure lime. Finely broken oyster shell is an excellent and a cheap form in which to supply the necessary lime. Fright sometimes causes a hen to lay an egg without a shell, but this is not so serious a matter, and is only temporary. The third cause is due to derangement of the egg organs, and, if the abundant supply of lime has not the desired effect, more drastic measures are needed. All food of a stimulating nature should be stopped at once, and an aperient given, consisting of one grain of calomel and one-twelfth grain of tartar emetic. A little iron should be added to the drinking water as a tonic, and the food should mainly consist of boiled rice.—Exchange.

Wire fence built in cold weather should be stretched tighter than when built in hot weather. "Cold contracts and heat expands metals," hence fence wire that is ringing tight on a cold day will be limp and loose on hot days. Some wire fencing is provided with crimps or springs, making it adjustable to the changes of temperature.

Sickly hens produce sickly chicks. It is well to take care of their health.

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Lameness.

I have a very fine thoroughbred registered Holstein bull four years old. My soil is adobe. During the muddy times he apparently became very tenderfooted and traveled around but little. I tied him up until he got better, then turned him out again. He got tender again and walked very slow and lame and crippled in his hind feet. When he walked I could hear something pop every time he took a step. While on his feet he kept his hind feet constantly moving.—O. P. O., Porterville.

I am afraid I am like the Veterinarian, not able to tell you what is the matter with this animal. The popping sound I have never heard except in animals that had Black leg. This animal has evidently not that trouble. You do not mention any soreness or discharging places on his heels and legs so it cannot be grease heels. I should give him plenty of green feed and if he does not eat it readily and seems weak, try giving a quart a day of a mixture made of two parts rolled barley, two parts bran and one part oil cake. Begin with a handful and keep on until he gets a quart a day. The mixture referred to for adding to the drinking water is used in cases of rheumatism and is iodide of potasium; one teaspoonful in a gallon of drinking water or it can be added to the grain food. Give this for one week, stop at anytime he drools at the mouth, or his eyes look sore. A teaspoonful once a day is enough for one week. Then after three days repeat the medicine for a week. If the trouble is not better I would not dope him any longer. The summer-time change alone may cure him of this trouble, as it must be caused by colds and chills of sleeping on the ground.

Corn for Silage.

Can you suggest the best variety of corn to grow for silage and tell me where the seed can be obtained. The soil is a sandy loam similar to much of the University Farm, but has no irrigation. Also is sorghum for fodder best drilled or broadcasted and what is the right amount of seed per acre?—G. K. S., Davis .

We grow any of the white dent varieties. I secure my seed from the San Francisco Seed house usually, I should try Morse first of all. We drill sorghum about twelve pounds to the acre if we want it to grow heavy; up to twenty if we want it for hay. By drilling it the cultivators can run and keep the weeds down, that alone is considerable, as the weeds absorb moisture and also often spoil the taste of the feed.—M. E. S.

Silos.

I own forty acres of land three and one-half miles northwest of the state farm at Davis. I have ten head of dairy cows and want to increase to twenty head. Would it pay me to put up a silo and get a feed cutter? Does cane (sugar cane) pay in this country. Does it make good silage for a silo? I have ten acres in alfalfa and I expect to put in ten more this year if possible. Can one really keep more cows per acre with a silo than without In growing corn and cane for silage, do you think it pays to irrigate it?—W. H. B., Davis.

I hardly think with ten cows, the expense of building a silo and buying a cutter would be justified. I should begin rather and be sure my cows were all paying their way before I build one. The small Babcock test machine cost but a trifle and with one you can determine that the cows are all doing their part. Forty acres of alfalfa should more than keep twenty cows. We count a cow to the acre and usually throw in half a dozen colts. The alfalfa must be fenced to do this successfully and the stock changed every two weeks to fresh pasture. This will leave one of the fields each time for hay making if the forty is divided into four fields. The lines of division can be made profitable if the large black willow is used for posts, they grow readily and furnish shade for the stock and firewood for the family. Putting the cows out five hours in the morning and then again at bedtime for the night-feeding, will save the alfalfa greatly, as the cows will not trample it out.

If by sugar cane, the regular cane is meant. I never knew but one man to grow it in this neighborhood, and he did it more as a fancy and did not find it enough more profitable than the common sorghum and ordinary corn. Corn and sorghum are both greatly increased if irrigated before each cultivation. Water and sun heat make a team that pulls the corn skyward rapidly. I have grown six-foot oats and fifteen-foot corn on the same land in one season by their aid.—M. E. S.

Cottony Cushion Scale.

Kindly tell us what has been found as the most effective exterminator of the white or cottony cushion scale and at what season of the year may the best results be secured.—T. J. F., Los Angeles.

The best remedy against the white or cottony cushion scale, or to be scientific, the Icerya purchasi is to write to the State Horticultural Commission, Sacramento, and ask for a colony of Vedalia cardinalis. This little insect will subjugate the worst attack of the white scale. As to time of year, it is immaterial, though if the scale is a pest, we would get busy at once. However that scale is easily controlled by use of the whale oil soap.

Needs a Mother.

We are subscribers to the Cultivator and have read Mrs. Sherman's department for several years, deriving many benefits from it, but have never read anything that just fits this case. Our driving mare foaled the 24th of this month a well-formed colt, but she has very little milk and will not own her colt. Has to have a foot tied up before she will allow it to come near her. We have let it nurse five or six times a day and are feeding it cream, sugar and water from bottle. Can you tell me if this is all right and how long before she should come to her milk, if she ever does. She is fed on good alfalfa pasture and hay with barley and raisins. —Mrs. B., Dinuba.

This mare may do better with her next colt. Some of my best bred mares do not have enough milk for the first colt or two they have. We feed these little chaps on cow's milk at first, adding a third water, as cow's milk is richer than mare's milk. Feed them a quart at first twice a day and increasing it up to half a gallon as the colt needs it and at the same time feed it warm. The water is gradually decreased until the colt receives pure milk, say by the time it is six weeks old. The best way to feed is in a shallow pan until they learn to drink without choking. Then they can be fed from an ordinary pail. Let the colt take whatever milk the mare can furnish him. If he grows constipated a little bran porridge made by boiling a handful of bran until it is tender and adding a teacop of this bran to the milk at feed. This milk should be as thick as cake batter that can be dropped from a spoon. I do not see any reason why this should not be as good a colt as though it had received natural sustenance from its mother. We nearly always have a colt raised in this way each year. They soon learn to watch for the milk truck and come running to the milk room door to be fed. The milkman pours their milk into the pan and they drink it without any trouble to anyone. When they are five or six months old they become full of pranks as a school boy, stealing the men's hats and carrying away halters and straps and have to be chased away.—Mrs. M. E . S.

World's Record.

Will you please tell me, to settle a dispute, which breed of dairy cows has made the biggest record. That is, made the most butter last year. If you can give the name of the cows and amount please do so.—R. O., Gilroy.

The world's record at present is held by a Holstein cow. Colantha Fourth Johanna, record for one year: Milk 27,432.5 pounds; average test, 3.64 per cent; fat, 998.26 pounds. The next in record is the champion of the Guernsey breed. Record for one year: Milk, 14,920.8 pounds; average test, 5.74 per cent; fat 857.15 pounds.

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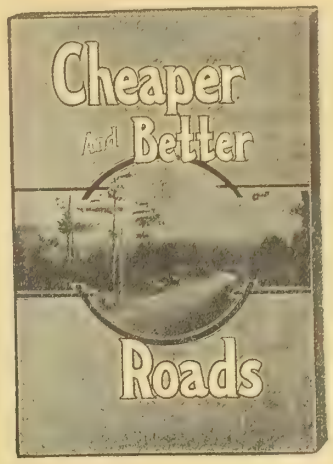

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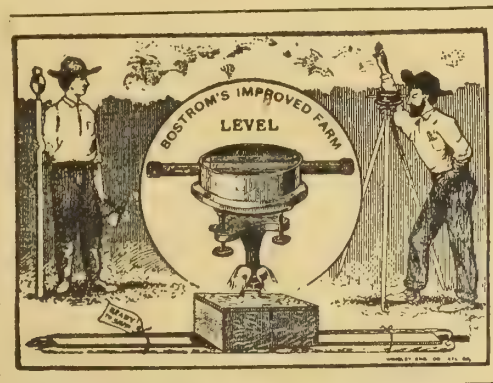

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Mangel Wurzels for Hogs.

I wish information in regard to the growing and feeding to hogs of mangel wurzel, if it pays to grow for that purpose. If so, how should they be fed to the hogs. I have some very rich bottom land and would like to know the best hog food that I can raise there beside corn.—J. J. M., Modesto.

In the past six years we have given over growing mangel wurzels, as the expense on rich soil of keeping them free from weeds proved very great. We have substituted the crooked neck squash or pumpkin and think it pays us rather better. We grow a winter grain crop on the land and make it into hay, then irrigate and plow and plant the pumpkins. This does away largely with the weeds, as the pumpkins go into the ground after the rains have ceased. Beets are best cut up before feeding; we ran ours through an old chopping mill after they had been cut into halves. They grow very large and make good feed, rather more, I think, to the acre, than the pumpkins, barring the one objection of having to weed them. Have you ever grown common peas in the winter for pigs, and in the summer beans, horse, brown-eyed, flat or broad beans? We like them and get large tonnage of good feed from them. The beans are cut, vines and all and fed to the hogs, or they can be turned in to gather them as soon as the pods form—M. E. S.

Poisoning Squirrels.

Please give me information as to how to destroy ground squirrels which are proving a great pest.—S., Los Angeles.

The most economical, and usually the most satisfactory way of disposing of squirrels is by poisoning. However the smoker and the bi-sulphide have been used very satisfactorily. Taken when the ground is wet the poisonous gases liberated in the hole and the hole immediately stopped will destroy great numbers.

Poisoned wheats are sold in the market or prepared according to a formula given in the Cultivator recently are effective. The succulent fruits or vegetables, especially the rind of watermelon, is excellent for poisoning them. If in the dry grain field where little of such food is handy to the squirrels they will take to it and great numbers will be poisoned by the use of such food. Strychnine is probably the best using it in small quantities and as little on the outside as possible. Where a smoker is used stop all the holes excepting the one in which the smoke is being forced, then pump full and close quickly. If bi-sulphide of carbon is used it may be poured into the hole, or better poured on a piece of cotton which is forced into the hole as far as possible and the hole immediately closed. Use care in handling this material so that it does not explode or set on fire as it is extremely combustible. If young orchard is near the pests and the trees are being injured, a newspaper wrapped around the trunk will keep them from doing any damage. The best method is for the entire neighborhood to join. Where the pests are really bad one neighbor's work is of little avail as the pests from other sections will repopulate the holes again.

Fertilizer for Garlic.

Which is the best fertilizer for garlic? I planted one acre and a half in garlic last December. The garlic is not making the bulbs as it should do. Is there any way of forcing to make better bulbs?

About one month from now, I intend to plant sweet potatoes between, and I have to put some fertilizer on, as the ground is not rich enough to raise two crops at once.—J. H. S.

In this case I know of nothing better than Nitrate of Soda. Use at the rate of 200 pounds per acre and make two applications about two weeks apart. If your correspondent has never used it he will find it resembles coarse salt. Before using, I break it up with the back of the shovel and pass it through a screen so as to have it fine as possible. It should be sown broad cast over the crop, and so light an application will not injure the garlic tops. Apply it when the tops are dry. It will soon dissolve and disappear—especially if the nights are cool and damp. Continue the cultivation of the crop just as usual. Because nitrate of soda is so soluble it is better to make two applications at intervals than to apply the entire quantity at once. The crop is then able to appropriate all of it.—Q. A. L.

Scab.

"In treating potatoes with the formalin solution for scab; does it make any difference whether the treatment is applied before or after cutting for planting?—J. A. N., Hemet.

Yes. They must be treated before cutting. Two years ago one of my neighbors treated after cutting and ruined the entire lot. After taking them out of the solution, be sure that they are reasonably well dried off before cutting.—Q. A. L.

Fungous Troubles.

I am forwarding to you under seperate cover sprig from peach tree. What is the matter with it, and what is the remedy? Also sprig from almond tree. A number of trees through the orchard (2 years old) have failed to make any growth to speak of and the leaves curl up and die. Last year, about August, a number of the trees began to turn a yellowish white and, though continuing to put out new growth, the old leaves, as described above, could be pulverized in the hand. And third a cork like growth taken from roots of one year old almond trees. Is this Crown Gall—and can anything be done for the trouble?—W., Sanger.

Answer by Prof. Ralph E. Smith of the Southern California Pathological Laboratory. Sample No. 1 is affected with the peach curly leaf. This disease is readily prevented by spraying the trees thoroughly with Bordeaux mixture just before the buds open in the spring or at the time they begin to swell. The disease is very readily controlled by such treatment, but at this season it is impossible to do anything for it. Sample No. 2 has failed to reach me. No. 3 is the crown gall, a very common trouble on the roots of many kinds of fruit trees. If this is abundant on the roots of young trees there is not much to be done in the way of treatment. One should be very careful not to sell or plant such trees.

Whitewash for Borers.

A short time ago I wrote asking for information regarding the quantity of crude carbolic acid per gallon of

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FOR SALE—CALIFORNIA BLACK walnut seed in sack lots. Wanted: Mayette, Franquette and Parisienne Walnut scions, also Rupestris St. George, Rip. x Cord. x Rup. 106-8, Rip. x Rup. 3306 and 3309 cuttings, grafting size. Address FANCHER CREEK NURSERIES, Fresno, Cal.

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FOR SALE—ABOUT 200 HEAD OF work and brood mares, including young mules and horses from one year to four years of age. One full blooded Percheron Stallion four years old in May. One Jack about seven years old. Several full blooded Poll Angus Bulls and a number of full blooded Durhams. CHAS. W. HART, Farmersville, Cal.

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BUFF ORPINGTONS—BLOOD AND breeding tells. Five years careful selection for points and laying; results, first prize pullets last year and 50 per cent. egg yield during moulting season this year. Eggs, $1.00, $1.50 and $2.00. Special prices on incubator lots. E. G. WALL, 1920 Monticello Ave., Hollywood, Cal. Home phone 59829.

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WHITE MINORCAS (EXCLUSIVELY), standard bred, prolific layers, large white eggs. Eggs (after April 1st) $1.25 for 15; $3.00 for 45; $5.00 for 100. L. V. PETERSON, Guerneville, Cal.

CORNISH FOWLS EXCLUSIVELY—The best for the table and for crossing. Beautiful and docile. Write for prices. Eggs $3.00 a setting. JOHN D. MERCER, 104 West First St., Los Angeles, Cal.

BLUE ANDALUSIANS. NORTHERN strain—Best egg machines for interior of California. Eggs $1.50 and $2.00 per 14; $2.50 and $3.50 per 28. Have bred them 9 years. L. A. WILSON, Winters, Cal.

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MAMMOTH BRONZE TURKEYS — Eggs fifty cents each. None in West larger or finer marked. Laid by old hens. MRS. LAURA E. HARDING, Brawley, Cal.

WHITE MINORCA EGGS FOR hatching, $5.00 per 100 after March 15. Some prize winners. MRS. E. BANTA, Calistoga, Cal.

PRIZE - WINNING WHITE MINORCAS. Eggs for setting, $2 for 15; $3 for 30; $6 per hundred, f.o.b. express. C. S. LANE, Santa Barbara, Cal.

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S. C. BROWN LEGHORN EGGS $1.50, $2.50 and $5.00 per setting, $5.00 and $7.00 per 100. MRS. C. H. VARY, Pomona, Los Angeles Co., Cal.

RHODE ISLAND RED EGGS FOR hatching, $1.50 for 13, $7.00 per hundred. CHAS. F. TUTTLE, Phone Main 1294, P. O. Box 320, Altadena, Cal.

O. L. CRANE, BREEDER OF PIT AND Cornish Indian Games. Rural No. 3, Santa Rosa, Cal.

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SWEET ORANGE SEED

FOR SALE
A. Tuffill Association
854 W. Adams Street, Los Angeles, Cal.

whitewash to prevent attacks of peach borers.

Since then, directions for making such a wash has been given me by a fruit grower friend of many year's successful experience and who tells me it is the best and surest thing he has ever found. I am using it this season and it may help some one else.

Fresh lime 1 peck.
Crude carbolic acid ½ gallon.
Soft soap 1 gallon.
Sulphur 4 pounds.
Salt as in ordinary whitewash.

Slake the lime (with old soapsuds if possible) and add the acid while hot.

Also 1 pint carbolic to 15 gallons old soapsuds used as spray or wash will keep all insects off for months.—P. N. Warner, Sanger.

Palo Verde.

What kind of soil has government land in the Palo Verde Valley? Is there water for irrigation, on what terms may it be had? What is the temperature of the valley? Is there a good demand for products? Is the country rolling or level?—H. H. F., Auburn.

The character of the soil in the Palo Verde Valley is similar to that of the Imperial, namely a fine silt or loam and is said to be very rich. Government claims, however, are largely taken up and there is but little opportunity of securing desirable ones except to go back some distance from the center and from the river. Some desert claims have been taken which those now holding are unable to keep because of lack of means to get the water on the land. These, we understand, are to be had reasonable. The temperature depends upon the location. It sometimes becomes rather cold and ice as thick as window glass was formed during the past winter. The temperature on mesas back from the river is said to be frostless. Of course, summer temperature ranges very high. There is no weather station located in the valley so definite figures cannot be given. At Yuma, which is probably similar, the temperature ranges from 22 to 118 degrees. As to the demand for products, the section is so new that there has been nothing produced more than is consumed in the valley. Until the railway goes into the valley the shipping facilities will not warrant a large output. The country is largely level. The altitude is less than 200 feet.

Veterinary

Answers in this column by Dr. R. T. Whittlesey, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Lameness.

I have a middle-aged mare that is lame in her hind foot. The frog has cracked up and about three-fourths dropped off, and the bottom of her foot around the frog is dry and somewhat mealy; can be easily scraped off with a knife. There is no discharge and I can not detect any unnatural odor from it. When standing, part of the time she holds her foot up. After she lies down and gets up she is quite lame for a few minutes, or when left standing, but when kept moving she does not limp.

I do not know of any injury that she may have had; I have owned her about one year.—Subscriber, Riverdale.

I think you have overlooked something in your horse's leg. The symptoms do not fit with foot lameness and that dry, mealy condition often exists with no lameness. The symptoms as described fit exactly spavin lameness. Examine the other foot and see if a similar condition is not present. Examine both hocks carefully for any enlargements, also the ankle joints for slight bony growths; there is possibility of ring bone.

There is no chance for treatment until the lameness is located and that is not always easy when the horse is where it can receive a careful examination let alone the meager and often misleading report contained in a letter.—R. T. W.

Heaves.

We have a fine mare who undoubtedly has the heaves. She has coughing spells and breathes heavy sometimes accompanied by a wheezing sound. During the rainy season she stood in barn and got all the good alfalfa hay she wanted. Being with foal at that time perhaps she ate more than was good for her. Would like to know whether there is any remedy for it. Would complete rest in pasture do any good?—J., Biggs.

There is no specific cure for heaves. The distressing symptoms can usually be relieved by feeding a concentrated diet of grain and hay. Hay must be free of dust or smut. A small quantity of lime dissolved in the drinking water is beneficial. If turned on to dry pasture they generally improve.—R. T. W.

DR. WHITTLESEY'S VETERINARY REMEDIES.

These are not ordinary mixtures but are from well tried formulas, used in an extensive practice in Southern California for nearly a quarter of a century. Dr. Whittlesey's Sulphur Arsenical Salve for deep fistulous or ordinary chronic, indolent sores such as, "Poll Evil," "Fistulas," "Quitters," "Thrush," "Scratches," "Warts," "Collar sores" or "Sit-fasts." $1.00 per package postpaid. Printed directions. Dr. Whittlesey's Antiseptic Healing Powder. Forms a coating over raw surfaces, excludes air, flies and floating germs. Makes a cheap and convenient dressing for the many sores that occur to stock on the ranch. $1 full pound can postpaid.
DR. R. T. WHITTLESEY.
Veterinary Hospital, 714 East Seventh St., Los Angeles, Cal.

Thirty-two cars of Hemet oranges have been shipped to date They are commanding very high prices in the Eastern markets.

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

Household Department

THE HICKORY LOG.

Oh, helpless body of hickory tree,
What do I burn in burning thee?
Summers of sun, winters of snow,
Springs full of sap's resistless flow;
All past years' joys of garnered fruits;
All this year's purposed buds and shoots;
Secrets of fields of upper air,
Secrets which stars and planets share;
Light of such smiles as broad skies fling;
Sound of such tunes as wild birds sing;
Voices which told where gay birds dwelt;
Voices which told where lovers knelt,
Oh, strong, white body of hickory tree,
How dare I burn all these in thee?
—Helen Hunt Jackson.

NANNETTE'S WOE.

"AUNT NANCY'S come," Nannette announced to her bosom friend in a choked voice, "and of all the frights!"

"What do you mean?" asked her bosom friend.

"Well," hesitated Nannette, "of course she's as neat as can be, but her clothes look as if they were made for Mrs. Methuselah."

"If it's only her clothes, you needn't worry," remarked the bosom friend. "You don't have to wear 'em."

"It's not only her clothes!" shrieked Nannette. "It's her notions! They are simply appalling."

"For instance?" suggested the bosom friend, taking a look at her back hair in the mirror with the help of a hand glass.

"For one thing, she objects to my name," explained Nannette, indignantly. "The very first thing she did—did—after taking a comprehensive view of the family—was to stare at me through her spectacles—steel-rimmed ones, at that—and ask: 'Is this one Nancy, my godchild?'

"Dad, who is as proud as can be of his enormous family, looked a little sheepish at that.

"'Y-y-yes,' he stuttered. 'We had her christened Nancy, of course, but she has taken a fancy to be called—er—Nannette.'

"'Humph!'" said Aunt Nancy."

"Haven't I always heard you speak of your Aunt Nancy as a paragon?" demanded the bosom friend. "Haven't you told me time and time again that your father looks upon her as the salt of the earth?"

"He does," acknowledged Nannette. "And so do I at a distance. But because she is dad's favorite sister why must I follow her old fogy notions?

"Why she was perfectly scandalized at the idea of my entertaining Charles all the evening without the assistance of the other members of the family! The idea!

"Of course when the bell rang at the accustomed hour, that horrid Tom had to bellow out, 'It's Nan's Tuesday night beau, Aunt Nancy. Parlor's pre-empted for the evening.'

"You should have seen her stare.

"'Am I to understand, Maria,' she asked, fixing poor mother with her eye, 'that this child has visitors from whose company her parents and her brothers and sisters are bared?'

"'Times have changed, Nancy,' said dad, looking silly."

"And Aunt Nancy?" prompted the bosom friend.

"'In my time,' said Aunt Nancy, 'it was our greatest pleasure to have our parents and all the family enter into our enjoyments and help in the entertainment of our friends. Hospitality meant something then, and I believe our guests enjoyed themselves. It seems to me anything but dignified for parents to be excluded, or for any room in their house to be shut away from them.'"

"Well, I declare!" said the bosom friend.

"Now, do you wonder that I was frightened at the idea of Charles meeting her?" asked Nannette. "But I haven't told you the worst," with gloomy emphasis. "I slipped away while she was still holding forth, hoping that she would forget all about it. But I couldn't shake off my forebodings and the conversation flagged."

"Nothing unusual in that, is there?" wickedly interposed the bosom friend.

"Charles actually began to look bored," continued Nannette, "and then we both had such a shock! If you will believe me, who should come marching into the room but——"

"Aunt Nancy?" breathlessly interrupted the bosom friend.

"Aunt Nancy," repeated Nannette. "Wasn't it awful. I had been so afraid of something of the kind. She planted herself in the only straight-backed chair in the room and, sitting bolt upright, gave me my orders:

"'Now, Nancy, introduce to me your friend.'

"Charles had been lounging in his chair and I assure you, Isabel, that the way she looked him over through her spectacles made him straighten up in short order.

"I felt as if I should sink through the floor when she came in wearing her plain black dress and white collar and cuffs, her hair parted in the middle and plastered down on each side, looking the world as if it had been varnished, she had brushed it so smooth. You know how stylish and exclusive Charles' people are?

"Well, before I knew it, they were talking together in the most animated manner. I don't know when I have seen Charles so interested. It was strange talk to me, too, for, as dad says, I have neglected to cultivate my mind.

"They talked about literature, art, politics, and even science, and I had to sit there like a dummy and listen to them. Even while he was holding my hand to say good night he was looking at and talking to Aunt Nancy.

"Now what do you think of that?

"I think you're lucky that your Aunt Nancy is too old for Charles to marry," said the bosom friend.—Chicago Daily News.

About the House

SO many of us are doing our spring sewing now that I thought the following "hints" might prove useful.

Machine oil can be taken out of white goods if the stains are rubbed with lard, left for a few hours and then washed with soap and water.

It is not every one who knows that there is a simple and easy way of sewing lace to a plain edge when the lace has to be gathered. There is in almost every lace stout thread on the plain edge of the lace, and this thread is for the purpose of gathering lace. Simply pull the thread until the lace has been gathered sufficiently, and then stroke it to get the gathers even. The lace is then ready to be

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Remember, the light from Kerosene is the light science has agreed upon as being the purest and best, because it is soft and mellow and restful to the eyes. Here are a few of The Angle Lamp Merits:

NO UNDER SHADOW. NO SMOKE, NO ODOR, LITTLE HEAT.

GREAT ECONOMY—COST LESS TO BURN than an ordinary lamp. As easy to operate as gas or electricity, and better than either. **ABSOLUTELY SAFE** under all conditions. Lighted and extinguished like gas. Burned **HIGH** or **LOW** like **GAS** without a trace of odor. And a **BRILLIANT,** soft, steady, shadowless light—but this you will have to see to appreciate.

The lamp as shown in cut burns 22 hours on 3 quarts of oil.

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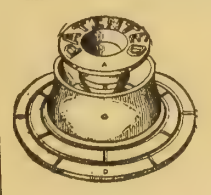

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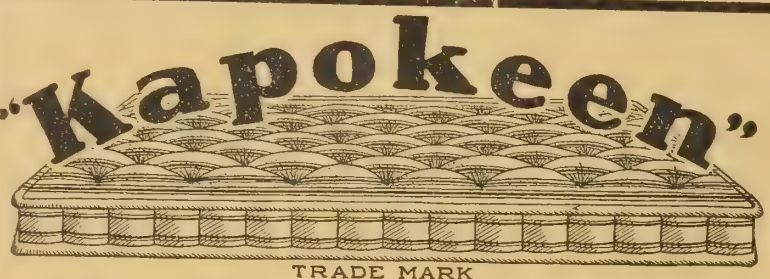
"Kapokeen"



TRADE MARK

The Mattress of Quality

In introducing our Kapokeen Mattress to the readers of The Cultivator, we are taking the first steps toward establishing a National reputation and market for an article, which, on account of its many advantages, has gained a pre-eminent position in its own vicinity.

"Kapokeen" is made from the Kapok or silk floss obtained from the bean of the Eriodendren tree, grown on the island of Java. It is prepared by our own patented process, which removes every particle of seed and preserves in full the resiliency of the natural fibre.

The mattress is made in our own factory where every precaution has been taken to insure absolutely hygienic conditions, by skilled workmen using only the best quality of materials throughout.

NOTE THESE POINTS.

Kapokeen can be "made over" in exactly the same manner as hair.

Kapokeen is sun dried, sun cured, and free from chemicals or other foreign substances.

Kapokeen, no matter how long it has been in use, by being placed for two hours in the sun, will expand and become as resilient as a new mattress.

Price No. 1 Kapokeen Mattress, 4-4 size, 5 1-2 inch box, Imperial edge satin ticking **$15.00**

Three-Quarter Size, $12.50 Single, $10.50

Kapokeen Mattreses are made only by

John Breuner Co

A postal will bring you a little booklet describing this mattress

Sacramento, Cal.

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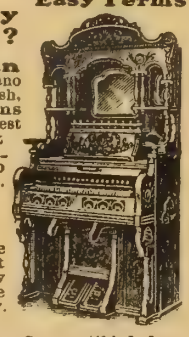

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sewed to the edge. There are a number of people who gather the lace by hand because they do not know of the thread, which gathers it more evenly than it can be done by hand.

If a buttonhole tears out lay a piece of closely woven tape back of it, stitch firmly in place, hem the old buttonhole to it neatly and then cut and work in the tape a new buttonhole of the proper size. An extra fine way is to rip the band apart and take out the threads of the old buttonhole, stitch the tape on the inside of the back fold of the band, stitch up the latter in its original shape and proceed as before. When buttons have torn out it is comparatively easy to squeeze a small square of good tape through the hole, lay it flat in the proper position between the two folds of the band and stitch it in place. Hem down the ragged edges on both sides and sew the buttons to the tape. Any button or buttonhole that is to bear strain should be stayed with tape when the garment is being made, the stay tapes for both buttons and buttonholes being placed in the band before it is stitched.

Rhubarb is plentiful now and a rhubarb pie that is said to be extra good is made by stewing the rhubarb, sweetening it and then stirring in a well beaten egg just before putting it in the oven. Do not have an upper crust, but have a frosting like a lemon pie.

A good luncheon or supper dish can be made from a can of salmon and is called "salmon pudding." Drain the liquor from a can of salmon and save it for the sauce. Pick up the meat and rub into it a tablespoon of butter (melted), two eggs and a cup of bread crumbs; season. Put the mixture in a buttered mould and steam for two hours. Set in cold water to loosen the pudding and turn out on a hot plate. For the sauce: Add to the liquor a teacup of drawn butter, a well beaten egg, a dash of mustard, salt and pepper. Boil until creamy thick and pour over the hot pudding.

Potato salad is always with us and one of many ways to make it is given this week: Six boiled potatoes, two small onions, two hard-boiled eggs, pinch of salt. Chop onions first very fine, then chop the potatoes and eggs, but not so fine.—Elbepe.

RAISIN RECEIPES.

Raisin Rolls.

Sift together 1 quart flour, 1 teaspoon salt, 2 tablespoons sugar, 2 teaspoons baking powder; rub in 2 tablespoons butter, add ½ pound seeded raisins. Mix with enough milk to make a firm dough. Knead for a few minutes then divide the dough into pieces the size of an egg, form into long rolls, lay one inch apart on buttered pans, brush with milk and bake in a hot oven.

Raisin Muffins.

One pint flour, ¼ teaspoon salt, 2 tablespoons melted butter, ¼ cup sugar, 2 teaspoons baking powder, 1 cup milk, 1 cup seeded raisins. Mix as for plain muffins, adding the raisins last and dusting them with a little flour. Bake in muffin rings in a hot oven.

Raisin Pudding.

One cup finely chopped suet, ½ cup sugar, 2 eggs, ½ cup milk, 1 cup whole wheat flour, 1 teaspoon baking powder and 1 cup seeded raisins. Steam for three hours and serve with any good pudding sauce or cream and sugar.

Raisin Pie.

One cup seeded raisins, a little salt, 1 tablespoon corn starch, 2 eggs, 1 scant cup of sugar, a piece of butter the size of an egg. Stew the raisins in enough water so that when the raisins are done there will be a pint of juice, Thicken this with the corn starch, dissolved in a little cold water. Then add the salt, sugar, butter and the yolks of the eggs, well beaten. Bake without an upper crust. Beat the whites of the eggs until stiff, sweeten a little and when the pie is done spread over the top and place in the oven for a minute to brown.

If you prefer a pie with two crusts use this same recipe and you will find it very good if you omit the eggs.

California Raisin Bread.

One pint water, 1 pint sweet milk, 2 ounces sugar, 1 ounce salt, 2 ounces lard, 1½ ounces compressed yeast, 2 pounds seeded raisins, 4 pounds flour. Have milk and water warm. Dissolve yeast is water. Mix dough thoroughly. Let dough raise well, then punch down and let raise again. Mould in round loaves and when raised bake in hot oven of about 450 degrees. When potato yeast is used, use one pint yeast and one pint milk or water.

Graham Raisin Bread.

One quart water, 2 ounces lard, 2 ounces sugar, 2 ounces molasses, 1½ ounces salt, 2½ ounces compressed yeast, 2 pounds raisins, ½ pound chopped nuts, 2 pounds white patent flour, 2 pounds graham flour. Let dough raise twice and when raised again bake in medium hot oven.

Raisin Brown Bread.

Three cups yellow corn meal, 1½ cups graham flour, 1½ cups white flour, 1 cup N. O. molasses, 1 teaspoon soda dissolved in ½ cup hot water, 1 teaspoon salt, enough sour milk to make soft batter. Mix flour and salt then molasses with soda, stir until foamy, then add milk and 1½ cups Sultana raisins. Fill mould half full and steam three hours.

Raisin Fudge.

Two cups sugar, 1 cup milk, butter size of an egg, ½ cup chocolate. Cook, stirring continually until bubbles break slowly. Have ready ½ pound walnuts chopped fine and 1 pound chopped seeded raisins. Add these and stir until stiff and pour into buttered pans; mark in squares when sufficiently cool.

Fruit Cheese.

One pound each of raisins, figs, dates, currants, blanched almonds, and 2 pounds of walnuts. Grind fine and mix well and compress tightly and let stand for two or three days, then cut into squares and roll in powdered sugar.

Raisin Chocolates.

Select smooth seeded raisins. Put ½ pound cake of vanilla sweet chocolate in a sauce pan over boiling water, and when melted add 2 level tablespoons butter and 2 of boiling water. Dip raisins and put on oiled paper.

Raisin Salad—Very Fine.

One cup celery cut in pieces, ½ cup of walnuts, cut in pieces, ½ cup chopped raisins. Combine and serve on lettuce leaves with Mayonnaise dressing or cream dressing.

Mock Mince Pie—Cheap but Good.

Two cups Sultana raisins (1 pound), ¼ cup vinegar (good), ¾ cup boiling

water, 1 cup sugar, ¼ teaspoon cloves, ½ teaspoon cinnamon, ¼ teaspoon allspice or nutmeg; little salt; chop or grind raisins, add ¾ cup boiling water and cook 10 minutes. Mix the vinegar, boiling water, sugar, salt, spices and boil until it becomes a syrup (8 or 10 min.) Combine the syrup and raisins and let cool slightly. Make a rich pie crust and if convenient add a few small dots of butter after putting in filling and sprinkle a little sugar on top. Cover and bake.

California Raisin Sandwich.

Delicious for afternoon teas, picnics, and children's lunches. Chop fine 1 cup of seeded raisins, together with 1 cup of nuts, preferably walnuts mix with whipped cream or the white of an egg beaten, season with salt. Spread between slices of bread cut very thin.

Raisin Ice Cream.

There is no finer fruit ice than finely chopped seeded raisins added to ice cream of any flavor.

ANSWERED THE REQUIREMENTS.

"I want to give her a useful present that costs enough to make it seem worth while," he said to the obliging salesman of the great department store.

"What do you say to a dozen strictly fresh eggs?" the salesman obligingly suggested.—Cleveland Leader.

LOVE'S PHILOSOPHY.

The fountains mingle with the river
And the rivers with the ocean;
The winds of heaven mix forever
With a sweet emotion.
Nothing in the world is single.
All things, by a law divine,
In one another's being mingle.
Why not I with thine?
—Shelley.

ENTITLED TO A SHOW.

Man wants but little here below,
And he gets a whole lot less,
In fact, if he but gets a show,
He has cause for thankfulness.
—Chicago News.

It is not luck, but labor, that makes men. Luck is ever waiting for something to turn up; labor, with keen eye and strong will, always turns up something. Luck lies abed and wishes the postman would bring him news of a legacy. Labor turns out at 6, and with busy pen or ringing hammer, lays the foundation of a competence. Luck whines. Labor whistles. Luck relies on chance; labor on character. Luck steps downward to self-indulgence; labor strides upward and aspires to independence.—Cobden.

A school teacher who was giving her little pupils instruction on the subject of idioms asked her class to give an example of "the bitter end."

Willie Jones said: "The Japanese chased the Russians to the bitter end."

"Very good," said the teacher. "Yes, Bobby Brown," you may speak."

Red with excitement, little Bobby spoke up: "Our dog chased our cat over the fence and bit 'er end."

Nobody knows of the holes to mend,
Nobody knows of the buttons lost;
Nobody knows of the babes to tend,
Nobody knows what the groceries cost;
Nobody knows of the socks to darn,
Nobody knows of the patching done;
Nobody knows—here we'll end this yarn—
Nobody knows but mother.
—Boston "Herald."

"Johnny, where have you been? Your hair is suspiciously wet. School was out two hours ago." "I fell in the creek." "But your clothes are not wet." "Well, you see, mamma, while I was standing on the bridge I thought maybe I'd fall in so I took off my clothes, an' I did."

"Dear," said the physician's wife, "when can you let me have $10?"

"Well," replied the medical man, 'I hope to cash a draft shortly, and then"—

"Cash a draft What draft?"

"The one I saw Mrs. Jenkins sitting in this morning."—Philadelphia Ledger.

"I'm told you play golf on the Sabbath," said the Rev. Goodman, sternly.

"Yes," replied Miss Kute, "but on that day I only use the sticks I won at our church fair."—Philadelphia Press.

Thin Boarder (delightedly)—The beef is very tender today.

Mrs. Slimdiet (wildly)—My goodness! That new girl must have gone to the wrong butcher.—New York Weekly.

If the skin is inclined to be scaly, do not steam the face nor use soap in washing.

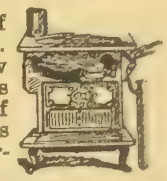
LIME WATER FOR WORMS.

To rid the soil in your flower pots of worms, use limewater. To make limewater, put into 10 or 12 quarts of water 1½ or 2 pounds of fresh lump lime. Let it stand a couple of days or until the lime has slaked and settled, then pour off the clear water for use. Water the infected soil with this water two or three times at intervals of two or three days. It will drive the worms out.

Americans are beginning to learn that the adornment of the house and surrounding grounds is an important element in the education of children and does much to cultivate good morals and good manners.

College Terrace, Mayfield.

Hague Domestic Oil Burner



Showing the Method of Attaching to Cook Stove. A device for using low grade distillate. Saves 40 per cent of cost of coal or city gas—let us prove it. Write for circular.

Hague Domestic Oil Burner Co.
214 Winston St., Los Angeles, Cal.

IT'S PENNY WISE

Policy to set out a good tree, costing good money, and then let the sun burn the bark or the rabbits gnaw it, when for $1 an acre you can get Yucca Tree Protectors that are practically indestructible. Write for free sample of the wrap. Yucca Manufacturing Company, 1380 Willow street, Los Angeles.

Pioneer Rubber Sanded Roofing

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If you are interested in roofs—the best and most economical Roofing to use, for all kinds of buildings — let us send you samples of "Rubber Sanded," and our 32-page booklet.

Write today—before you forget it.

Pioneer Roll Paper Co
Department 11, Los Angeles, Cal.

San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, April 21, 1909.

Butter.

Butter is stationary and the market has little of interest. Quotations are exactly as last week.

Produce Exchange wholesale quotations are as follows with actual selling price to the trade 2½c advance on Extras.

Creamery ex per roll	47½
Firsts	45
Eastern Creamery ex	47½
Dairy	24
Cooking	22½
"Butterine"	16@20

Cheese.

Southern California Anchor	17
Northern fresh	17½
Anchor Young America	19
Longhorn	22@23
Eastern singles	18½
Cheddars	19
Swiss	16@17
Imported Swiss	30
Daisy	19@20
Limburger	21
Oregon triplets	18
Twin	18½

Eggs and Poultry.

Eggs are still surprising all by continuing to advance. Two cents have been added during the week.

Eggs extra selected	25
Eggs local candled	27
Eggs case count buying price	23½

Dealers pay for live stock.

Hens per pound	16@17
Young roosters	16
Fryers per lb	25
Broilers per lb	30
Roasters	20
Old roosters	8
Turkeys	18@20
Geese	15
Ducks	15
Squabs	1.25@1.75

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs from 175 to 200 pounds	6½@6¾
Prime steers	4¾@5
Heifers	4@4½
Calves per pound	6
Sheep ewes per head	3.75@4.00
Lambs per head	3.55
Wethers	4.50@5.00

Potatoes.

Wholesale prices are:

Sweets per ctl	1.50@1.85
Sweets choice	1.15@1.25
Sweets White	1.50
Sweets Red	1.50
New per lb	5
Early Rose local	2.50@2.75
Early Rose northern	2.50@2.75
Burbanks local	2.50
Lompocs	2.50@2.60
Highland fancy	1.90@2.25
Salinas	2.50
Oregons Burbanks	2.25@2.40
White Rose	2.25

Onions.

Wholesale quotations:

Australian Brown	3.50
Danvers	1.75@2.00
Oregon's	2.00@2.25
Nevada's	2.00@2.25
Utah's	2.00@2.25
Red Globe	1.75@2.00
Imperial Bermudas per crate	2.35@2.50
Texas Bermudas per crate	1.75
Garlic	10@12

Vegetables.

Artichokes per doz northern	90
Artichokes locals	50@60
Asparagus green	2½@6
Asparagus per lb common	3@5
Beets per sk	1.25
Bell peppers per lb	20@40
Beans string	15@25
Beans Limas per lb	8@10
Brussels sprouts per lb	9@10
Cabbage per sk	1.00@1.25
Cabbage red per lb	3
Celery per crate	2.00@4.00
Chili per lb	20@25
Chili dried	9@10
Chicory per doz	50
Cucumbers per doz hot house	1.75@3.00
Cauliflower per crate	2.25@2.50
Carrots per sk	1.00@1.25
Chives per doz	1.60
Endive per doz	25
Egg plant	25
Green onions per doz bunches	15@25
Horseradish per lb	12@15
Lettuce per crate	75@1.10
Lettuce choice	50@90
Mushrooms per basket	3.00
Oyster plant	50
Okra per lb	40
Peas per lb	1@3
Parsley doz	20@40
Parsnips	20@25
Rhubarb Northern per box	1.50@2.00
Rhubarb C. W.	85@1.00
Radishes per doz	15@20
Spinach per doz	15@25
Turnips sk	1.00
Tomatoes crate	1.50
Water cress	15@20

Citrus Fruits.

Navels fy	1.75@2.25
Navels ch	1.25@1.50
Tangerines halves	1.60@1.75
Grapefruit seedless	3.00@3.50
Grapefruit seedlings	1.50@2.00
Lemons fy	1.75@2.25
Lemons ch	1.00@1.50
Limes half box	1.50@2.00
Kumquats basket	25

Fresh Fruits.

Wholesale prices on the market are:

Baldwins 4 tier	1.35
Bellflowers	1.35@1.50
Newton Pippins	1.00@1.50
W W Pearmains	1.50@1.75
Red Pearmains	1.50
Spitzenberg	2.25@2.50
Jonathans	1.75
Aligator Pears per doz	3.50@4.00
Custard apples per lb	10@15
Guavas	4@6
Loquats per lb	5@8
Pears box	1.75@2.00
Raspberries	20
Strawberries	6
Strawberries ch	4
Blackberries	10

Dried Fruits.

Wholesale prices are:

Apricots	8@10
Evap apples fy per lb	8½
Figs loose white	6
Figs blk	5
Peaches in boxes	7@8
Peaches sacks	6@7
Pears	9
Plums pitted	8@9
Nectarines	7½@9
Prunes 30's to 40's boxed	8
Prunes 40's to 50's	7½
Prunes 50's to 60's	7

Beans Dried.

Wholesale prices are:

Limas per ctl	4.50
Pink No. 1	3.65@3.75
Lady Washington	5.10
Small White	6.00@6.25
Black eyes	3.75@4.00
Garvanzas	4.00
Lentils California	7.00
Lentils German	8.00
Bayou	3.50

Nuts.

Almonds IXL per lb	14@15
Ne Plus Uutra	14
Pecans polished	15
Peanuts Virginia	6½@7
Peanuts California	5
Peanuts Jap	6@6½
Walnuts No 1	11@12
Chestnuts	13@14

Honey.

Wholesale quotations:

Extracted water white	8
Extracted Light Amber	6½@7
Comb W W	16
Comb white	15
Beeswax	30

Hay.

Prices paid to producers f. o. b. Los Angeles are as follows:

Barley No 1	21.00@23.00
Barley No 2	18.00@20.00
Alfalfa northern per ton	14.00@15.00
Alfalfa local	15.00@18.00
Tame Oat No 1	22.00@24.00
Wheat No 1	19.00@21.00
Wheat No 2	18.00@20.00

Grains.

Wholesale selling price f. o. b., Los Angeles.

Wheat new per ctl	2.10
Kaffir corn	1.85
Corn Eastern sacked	1.80
White oats	1.90
Seed Rye	1.80

Feed Stuff.

Wholesale selling price f. o. b., Los Angeles:

Cracked corn	1.85
Shorts	1.80
Bran	1.65
Cocoanut cake meal	1.85
Cottonseed meal	1.25
Oil cake meal	2.50
Feed meal	1.85
Rolled barley	1.50

San Francisco Markets

SAN FRANCISCO, April 21, 1909.

Butter.

Notwithstanding heavy receipts butter has advanced slightly during the week. In fact it advanced a full cent which later suffered a slight decline and now stands a half cent in advance. Market is firm.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras per lb	24
California firsts	23
California seconds	22½

Cheese.

California flats fy	15½
Firsts	15
Seconds	12
Cal Young America fy	16
Firsts	14½
Young American Oregon fy	16½
Eastern N. Y. Cheddars fy	17½
Oregon flat fy	15

Eggs and Poultry.

Eggs are in moderate receipt and advanced immediately after last week's quotation. Present market condition is good.

Official quotations of the S. F. Wholesale Dairy & Produce Ex. are:

Fresh ranch extras	24
Eggs first per doz	23½
Eggs second	22
Eggs thirds	20½
Hens per doz	4.50@6.50
Hens extra	7.00@9.00
Young roosters	9.00@10.00
Old Roosters	4.00@5.00
Fryers per doz	7.50@8.50
Broilers per doz	5.50@6.00
Geese per pair	1.50@1.75
Goslings per pair	1.75@2.00
Ducks young	6.00@9.00
Live Turkeys	17@19
Dressed Turkeys	18@22
Pigeons young	2.00@3.00

Live Stock.

San Francisco prices gross weight:

Steers No 1	4½@4¾
Do second quality	4¼
No 1 cows and heifers	3¾
Second quality	3¼
Hogs 100 to 140	7@7¼
Hogs 140 to 150	7¼@7½
Rough heavy	4½@5
Calves per lb	4@5¼
Lambs yearlings	5½
Milk lambs	6¼@6½
Wethers No 1 unshorn	5
Ewes No 1	4½

Potatoes.

Wholesale market quotations:

River white fy sacks	1.50@1.65
Early Rose	1.85@2.00
River Burbanks	1.35@1.50
Salinas Burbanks	2.00@2.10
Lompoc Burbank	1.75@1.90
Sweets per crate	1.65@2.00
Oregons	1.80@2.00
New potatoes	2½@3

Vegetables.

Wholesale quotations:

Asparagus per lb	2
Bell peppers per lb	25
Brussels sprouts per lb	3@5
Cabbage per box	2.00@2.25
Cauliflower doz	75@1.00
Carrots per sk	65@75
Celery per doz	40@60
Cucumbers per doz	75@1.25
Chili peppers per lb	20@25
Egg plant per lb	20@25
Green peas per lb	3@3½
Mushrooms per lb	12½@25
Marrowfat squash per ton	20.00@25.00
Squash cream per box	50@65
Onions green per box	60@75
Rhubarb per box for bay	75@1.00
String beans	10@12½
Tomatoes box Mexicans	50@1.00
Wax Beans	10@12½
Garlic new	7@9

Onions.

Onions Oregons	2.50
Australian Brown	4.00
Texas Bermudas per crate	1.85@2.00
New green per box	25@65

Citrus Fruits.

Navels fy	2.00@2.50
Choice	1.75@2.25
Tangerines per crate	1.25@1.50
Mandarins	75@1.00
Grapefruit seedless	1.50@2.75
Grapefruit seedlings	1.00@1.75
Lemons ch	1.25@1.75
Lemons fy	2.00@2.75
Limes	5.50@6.00
Limes Cal sm box	1.00@1.25

Fresh Fruits.

Bellflowers	1.00@1.35
Bellflowers No 2	50@90
Spitzenberg	1.25@2.00
Newton Pippins	1.25@1.75
Ben Davis	1.25@1.65
Winter Nellis	1.25@1.50
Other Kinds	75@1.00
Strawberries L. A. per crate	1.25@1.50
Malindas per chest	8.00@10.00
Longworths per chest	15.00@17.00
Pineapples per doz	2.00@4.00

Dried Fruits.

Prunes 4-size basis	3@4
Santa Clara	3¼@3¾

½c premium for larger sizes

Apricots per lb; Choice 8½; fancy 7@10.

Peaches—Choice 4; fancy 6½

Apples evap	8¼@9¼
Pears	4@5
Figs	2½@4
Nectarines	5@6
Pitted Plums	7@8

RAISINS—1908 crop, f. o. b.: Clusters and Layers, 20-lb bxs—Imperial Clusters, 6-crown, $2; Dehesa Clusters, 5-crown, $1.75; Fancy Clusters, 4-crown, $1.40; London Layers, 3-crown, $1.15; do, 2-crown, $1.05. Seeded, 25-lb bxs—Fancy bulk per lb, 5¼c; Choice bulk, 5c. Loose Muscatels, 50-lb bxs—Standard, 4-crown, 4c; do, 3-crown, 3¼c; do, 2-crown, 2¾c; Seedless, 3½c. Seedless Sultanas—Unbleached, 4¼c. Thompson Seedless—Unbleached, 4¾c. Dried Grapes, 2½c

Nuts.

Walnuts S S No 1	9½
Walnuts No 2	6
No 1 Standard	8½
No 2 Standard	4½@5
Almonds Nonp	11½
Almonds IXL	10½@11
Ne Plus Ultra	9½
Drakes	8½@9
Chestnuts	9½@14
Peanuts Cal	5½@6

Cream Separators, all sizes, all prices. O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

Beans Dried.

Limas	4.10@4.25
Pink	3.00@3.15
Small white	5.25@5.50
Large white	4.25@4.40
Black eyes	3.25@3.50
Red Kidneys	3.75
Garvanzas	3.00
Bayo	4.50
Horse beans	2.10
Cranberry	4.00

Hops.

Hops 1908 crop	6@8½
Old Crop	1@3½
1909 crop contracted for at	10@12

Honey.

White comb	15½@16
Light Amber	9@10
Exracted W W	7@8
Extracted light amber	5½@6
Beeswax No 1 per lb	28@30
Beeswax No 2 per lb	23@25

Hay.

Somers & Co. say under date of April 16:—Receipts of hay during the past week have been very heavy, a total of 3950 tons arriving, which amount is more than we have received any one week in the last six months. A very large portion of these shipments has been inferior alfalfa and stock hay from the San Joaquin valley, which of course is becoming quite a drug on the market. The better grades of hay continue in excellent demand and although there is a trifle weaker tendency on account of so much hay arriving, yet we cannot quote materially lower prices on same. The fact that all this hay which is now arriving is being placed among consumers and not stored up here, give evidence that if we should experience a short period of light receipts, prices would certainly advance. There is no question but that there is bound to be some dropping off of receipts for figures show very clearly that there is not enough hay stored in country districts to supply this quantity to San Francisco until new hay is available. Present prices are as follows:

Choice wheat hay per ton	23.00@26.00
Good wheat hay per ton	21.00@23.00
No 1 wheat or wheat & oat	21.00@23.00
Choice tame oat	21.00@25.00
Wild oat	20.00@22.50
Stock hay	10.50@13.50
Alfalfa	16.00@18.50
Straw per bale	50@85

Grains.

Wheat No 1	2.00@2.05
Barley	1.50@1.57½
Corn small	1.80@1.85
Oats white	2.05@2.15
Oats gray	1.95@2.05
Rye new crop	1.80@1.85
Corn Egyptain	1.60@1.65
Alfalfa seed, Cal	16@19
Alfalfa seed, Utah	18@19
Mustard yellow	5¾@6
Millet	3@3½
Broom corn seed per ton	23.50

Feed Stuff.

Bran per ton	29.00@30.00
Feed cornmeal per ton	37.00@38.00
Cracked corn per ton	38.00@39.00
Rolled barley per ton	32.00@33.00
Oil cake meal per ton	38.50@40.00
Cocoanut cake per ton	25.00@26.00
Middlings	33.00@35.00
Shorts	31.00@32.50

Citrus Market

LOS ANGELES, Cal., April 21, 1909.

Oranges have been going forward at an exceptionally heavy quantities, some days as high as 150 cars of oranges and 25 to 35 of lemons. Notwithstanding this great output the Eastern buyers have been fairly eager to pick them up and no heavy decline has been observed. In fact present quotations are fully up to those of last week. Even the auction market is looking good. It is hoped the prices which were received a few weeks ago may even yet be secured in the face of this output.

The large output of lemons has also been well received and commanding prices satisfactory to the shipper. These prices will, of course, improve as the season advances.

Shipments.

Total of shipments of oranges to date since Nov. 1, 16,745 of lemons, 2,422 or a total of citrus shipments 19,157, the same date last season oranges 16,057, lemons 2,037 or a total of 18,094.

NEW YORK, April 19.—Fifty-seven cars oranges and three cars lemons sold. Market slightly easier and lower, especially on large sizes. Weather clear and warm. Market firm on good stock lemons.

NAVELS— Average.
Elephant Orange Growers' Cash A 2.00

For Mehring Foot-Power Milking Machines see O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles,

Plain Ends do 2.30
Elephant do 2.90
Plain Ends do 2.35
Cerrito L V W Brown 3.35
Swastika do 2.75
Blue Banner Sutherland Ft Co 2.80
Native do 2.90
Fountain Speich & Co 2.45
Ocean do 2.60
Our Popular do 2.15
Alta Cresta AH Ft Ex 3.35
Robusta Imp do 3.05
Hobo do 2.35
Alta Cresta do 3.15
Robusta do 3.00
Blue Globe Riverside Ft Ex 3.05
Red Globe do 2.60
Red C Covina Ft Ex 2.65
Sugar Loaf Riverside Ft Ex 2.50
Highgrove do 2.35
Quail OK Ft Ex 2.47
Victor San Antonio Ft Ex 2.30
Sugar Loaf Riverside Ft Ex 2.55
Highgrove do 2.40
Gold Nugget San Antonio Ft Ex ..2.35
Old Mission C C Chapman 2.45
Golden Eagle do 1.95
Aurora E Peycke Co 2.55
Deal do 2.40

SEEDLINGS—
Titus Ranch San Marino GPA 2.40
El Toreador do 2.25
Titus Ranch do 2.55
El Toreado do 2.35
Santa Anita 1.85
Iris Duarte-Monrovia Ft Ex 2.65
Violet do 2.50
Sugar Loaf Riverside Ft Ex 2.10
Tourist Spence Ft Co 2.00
Batch 1.70

NAVELS (Halves)—
Cerrito L V W Brown 1.85
Blue Banner Sutherland Ft Co 1.30
Native 1.30
Golden Orange AH Exchange 1.35

LEMONS—
Rialto Girl Growers' Ft Co 2.75
Choice 2.35
Independent fy G F Co 2.90
Independent ch 2.40
Niagara 2.25
Circus 2.20
Senorita Sparr 1.75

TANGERINES (Halves)—
Mahala L V W Brown 1.25
Gold Orchard Independent Ft 1.10
Ruby California Citrus Union 1.30
Blue Globe Riverside Ft Ex 1.30
Golden Orange AH Ex 1.40
Sugar Loaf Riverside Ex 1.05
Blue Seal 1.35

BLOODS (Halves)—
Champion, Denman Sons 1.55
Ruby California Citrus Union 1.40
Turquoise 1.20
Blue Globe Riverside Ex 1.30
Red Globe 1.20
Eagle AF Exchange 1.15
Sweetheart do 1.25

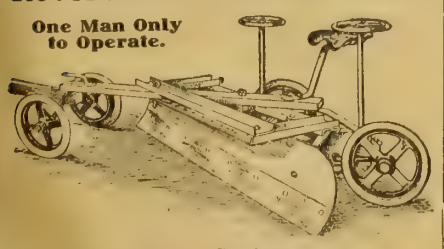
ST. MICHAELS—
National 2.75
National (half boxes) 1.25
Blue Globe (half boxes) 1.35

PITTSBURG, April 19.—Seventeen carloads sold. Market 10@15c lower on navels; firm on good stock lemons.

NAVELS—	Average.
Orchard National O Co	3.00
Cobbler R H Shoemaker Jo	2.35
Golden Flower Red G O Assn	2.40
Canna SB Red Yerkes Spur	2.05
Orchard ST Ex Glendale	2.45
Eldorado Escondido F G A	2.40
Hillside Gem, Loveless Ft Co	2.30
Floral SB Ex Colton	2.15
Jasmine D. M. Ex Duarte	2.50
Standard National O Co	2.65
Gabriella Ind Ft Co	2.15
Aurora E Peycke Co	2.65
SEEDLINGS—	
Titus Ranch San Marino GPA	2.60
Palomar Loveless Ft Co	2.30
BLOODS—	
Log Cabin Loveless Ft Co	3.00
Palomar	2.90
GRAPEFRUIT—	
Liberty Escondido F G A	2.40
Eldorado	2.15
TANGERINES (Halves)—	
Log Cabin Loveless Ft Co	1.20
Liberty Escondido F G A	1.30
LEMONS—	
Golden Strand	2.10

The Simplex Russell Reversible Road Machine

One Man Only to Operate.



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WM. T. MARTIN MACHY. CO., Agents
1277 Howard St. San Francisco, Cal.

Three Stroke Self Feed Hay Press

Two men can run it. All steel and iron. Smooth bales. Easy draft. Satisfaction guaranteed. Free trial. Ask for Catalogue 28.

The Auto-Fedan Hay Press Co.
1521 West 12th St., Kansas City, Mo.
Agents—John Schilling, Jr., Los Angeles, Cal. J. C. Gordon, Box 167, Sacramento, Cal.

Las Fuentes C-S Co Summerland 2.10
Las Fuentes (for Montecito) 1.45

ST. LOUIS, April 19.—Raining. Market weak on account of the weather. Ten carloads sold.

NAVELS—	Average.
Golden Gate Red GO Asssn	2.50
Belt RH Ex Highland	2.40
Greyhound SA Ex N Pomona	2.50
Uncle Sam Riv Ex Riverside	2.70
Scroll Riv Ex Riverside	2.15
Stag ACG Ex Lateen Spur	2.50
Hunter ACG Ex Lateen Spur	2.30
Cal Orange Riv Ex Riverside	2.25
SEEDLINGS—	
Pointer ACG Ex Lateen Spur	2.40
Hunter	2.05
BUDDED—	
Golden Orchard Ind Ft Co	2.35
Citrus Belle Ind Ft Co	2.15
TANGERINE (Halves)—	
Greyhound	1.25
LEMONS—	
Whittier ST Whittier	2.30
Pico	2.15

CLEVELAND, April 19.—Raining. Market unchanged. Nine carloads sold.

NAVELS—	Average.
Carnation M & Greene Co	2.90
Tiger SB Ex Colton	2.45
Red C. Covina Ft Ex Covino	2.80
Home Grove SA Ex Claremont	2.30
Gavilan Riv Ex Riverside	2.45
Cluster SA Ex Pomona	2.20
Victor SA Ex Claremont	2.20
Braeside Riv Ex Riverside	2.45
RUBY BLOODS—	
Our Favorite	2.25
Gavilan Riv Ex Riverside	2.90
SWEETS—	
Our Favorite	2.50
TANGERINES (Halves)—	
M & G	1.05
Blue C Covina Ft Ex	1.55
LEMONS—	
Los Fuentes C-Sperry Summerland	1.35
Montecito	1.15

CINCINNATI, April 19.—Three carloads navels and one carload seedlings sold. Market steady. Raining.

NAVELS—	Average.
Silence Flagler Ft Co	2.65
Coyote OK Ft Ex	2.00
Cry Baby Flaggler Ft Co	2.65
Greyhound SA Ex Claremont	2.45
SEEDLINGS—	
Silence	1.35
Cry Baby	1.30
Vista de Robles	1.20

Firsts sold from $2.90 to $3.35; seconds $2.25 to $2.35; 360s, firsts, $2.25 to $2.70; seconds, $2.00 to $2.10. The general range of prices being from $2.45 to $3.50 for 300s, firsts, and from $2.00 to $2.45 for seconds; 360s, firsts, $2.10 to $2.70; seconds, $1.75 to $2.10; wasty stock sold down to $1.65. On Tuesday 28,000 boxes will be offered, and on Thursday, 26,000 boxes.

PHILADELPHIA, April 19.—Twelve carloads navels, five mixed cars, three carloads seedlings, one carload bloods, one carload St. Michaels and one carload lemons sold. Weather very warm. Market weak. Three carloads Florida oranges sold. Market unchanged on good stock.

NAVELS—	Average.
Greyhound SA Ex Pomona	1.70
Coyote OK Ex	1.60
Extra Choice ST Ex Rossmoyne	2.30
Fruita Rix Ex Highgrove	2.50
La Mesa Riv Ex Riverside	2.45
Lion Head I L Lyon Sons	2.30
Silver Lake	2.30
Tiger Head I L Lyon Sons	2.15
Blue Mtn P & McKevitt	2.35
Rialto Girl Growers' Ft Co	2.30
Native Sons King Ft Co	2.25
Partridge Cal Cit Union	2.15
Tower Malone Ft Co	2.10
Rialto Girl Growers' Ft Co	2.20
BLOODS—	
Vista Bonita AF Ex	2.55
La Mesa Riv Ex	2.25
Native Sons King Ft Co	2.40
Golden Phesant Ind Ft Co	2.30
SEEDLINGS—	
Tourist	2.00, 1.55, 1.30
Beach	1.65, 1.40, 1.20
Vista Bonita AF Ex	2.50
Lake Hemet	2.45
ST. MICHAELS—	
Aurora	2.35
Climax	2.40
LEMONS—	
Circus Spratt Ft Co	1.30
Senorita	1.20

NITRATE OF SODA.

Nitrogen is the first plant food to become exhausted in the soil, hence it is most commonly the deficient one; and without sufficient nitrogen in the soil the plants are unable to appropriate more than a limited amount of the other plant nutrients. Thus is seen the double necessity of supplying Nitrate of Soda to the growing crops.

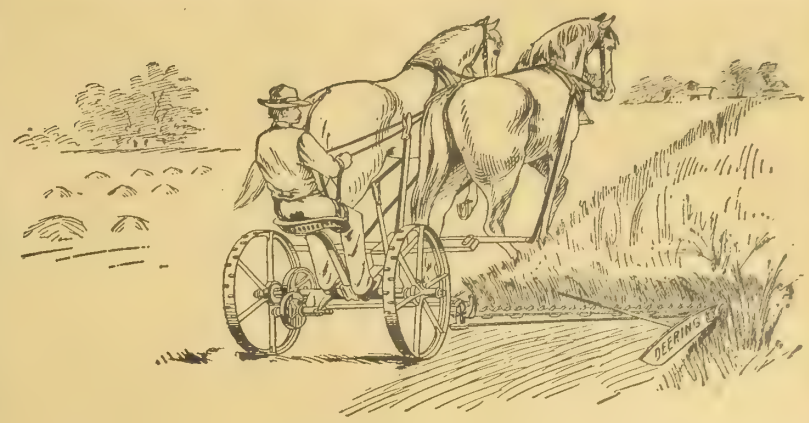
Nitrate of Soda is of special value in forcing rapid development and early maturity of most garden crops; but the best results are obtained from Nitrate when applied in the early stages of growth, as late applications may protract the growing period and delay maturity.

Even the legumes, although possessing the power to assimilate the atmospheric nitrogen, are benefitted in their early life by Nitrate of Soda.

The Nitrogen in green manure is not to be relied upon, since the presence of decaying vegetation favors the reduction of nitrates with loss of a large per cent of their nitrogen.

General directions for using Nitrate of Soda:—Apply by sprinkling a few inches from the roots when the plants are dry, avoiding direct contact with them; and it is recommended that each application be followed by cultivating so that the Nitrate can the more easily reach the feeding roots, particularly in localities where dry weather begins at an early date.

Deering Ideal Mower



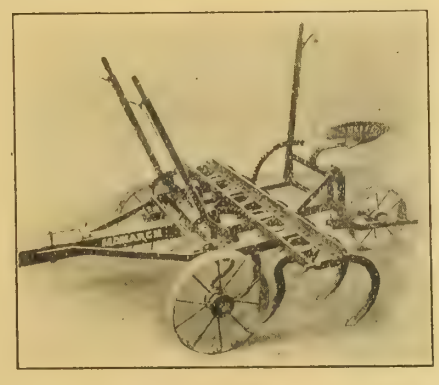
When it comes to the test the Deering ball and roller bearing mower is ahead of them all—the lightest draft—simple—durable—with few parts to wear or get out of order. Cuts from the start in heaviest grass or grain—a pleasure to use and a satisfaction to own.

We sell highest grade harvesting machinery of all kinds, including the light-running, ball and roller bearing Deering Headers. Get your orders in now. Catalogues, description and testimonials on request.

Hawley, King & Co., Agents

224-228 South Los Angeles St., Los Angeles, Cal.
Wagons, Carriages, Harness, Farm Implements of all kinds.

OUR MONARCH CULTIVATOR



Is designed for heavy work. Has great clearance (17 in.) between front and rear standards, which permits the working of trashy or lumpy ground, and lightens draught. While designed more especially for field use, it is now becoming a favorite among orchardists where deep cultivation is desired. By the arrangement of levers it can be carried level or deeper on one side if desired. Write

Killefer-Griffith Mfg. Co
1336 Palmetto Street
LOS ANGELES, - CAL.

"Success" Fireless Brooders

Will raise every chick, send today for free circular; tells about this wonderful brooder.

No Lamp, No Smoke, No Odor, No Danger of Fire

We pay freight. I sell on trial, if not satisfied I will refund you every cent. Order now. I can ship the day I get your order.

E. E. McClanahan
112 E. 8th, Los Angeles

50 Chick $2.50
150 Chick $5.00
We Pay Freight

We Understand

EASTERN CONDITIONS
EASTERN MARKETS
EASTERN PEOPLE

Their Likes and Dislikes

We Sell Our Goods Under a Special Label and Guarantee, and have created a reputation for Dependable Goods. Our representatives are working among the high grade dealers, hotels, resorts and restaurants, creating a demand for

CALIFORNIA PRODUCTS

We Introduced Crimson Winter Rhubarb into New York, Philadelphia, and Eastern Markets. Growers of Celery, Cantaloupes, Deciduous Fruits, etc., who would like to share in the benefits of our organization, should write us. We can handle the products of other growers in addition to our own.
Write for Our Plan.

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513 Chamber of Commerce Building
Los Angeles, Cal.
Eastern Offices, New York and Philadelphia.

A race track is being constructed on the fair grounds at Olympia, Wash., in preparation for the coming fall meet.

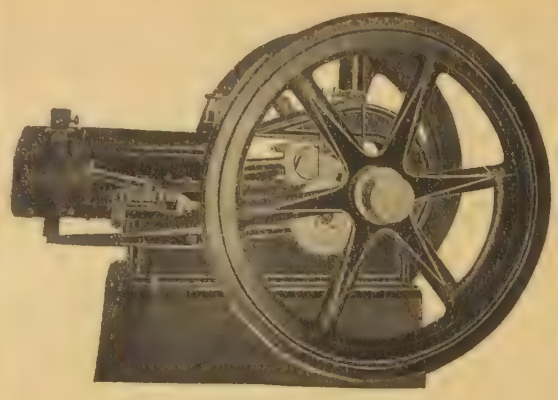
FAIRMONT HOTEL SAN FRANCISCO

Scenic Hotel of the World
Overlooks San Francisco Bay and City
Five Minutes Ride from Ferries

600 rooms. Every room has bath

Rates—single room and bath—$2.50, $3.00, $3.50, $4.00, $4.50, $5.00, $7.00, $10.00.
Suites—$10.00, $12.50, $15.00, $20.00 and up.

Management
Palace Hotel Company



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You'll
Smile and Smile and Smile

Least Fuel
Most Water
Fewest Repairs

Western Gas Engine Co.

Factory and Main Office:
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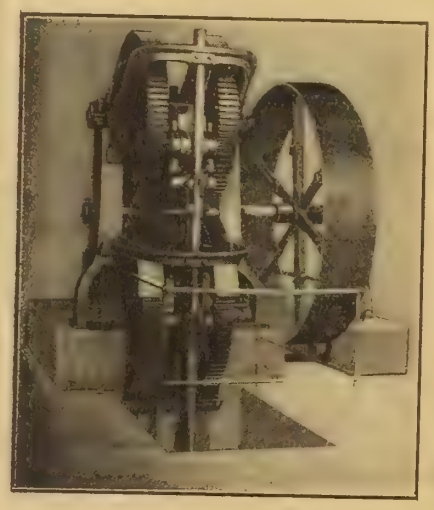
The Smooth Running, Noiseless Pomona Deep Well Pump



It is thirty to fifty per cent more efficient than any centrifugal pump ever made. No high speed bearings to cut out. All breakages and rod troubles eliminated.

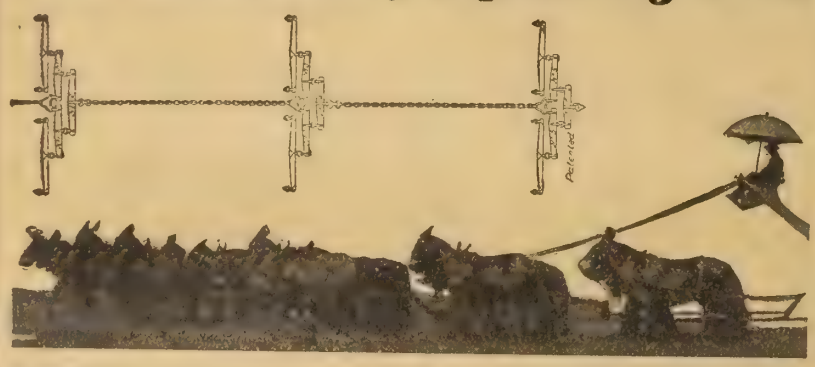
This is the only pump you can afford to buy if you consider your own interests. Hundreds of satisfied users testify to this.

Used by the best water companies who know what a good pump is.

Send for a catalog or what is better come to POMONA and let us show you some of these plants in operation.

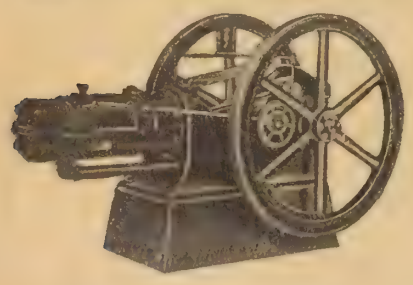
POMONA MANUFACTURING CO.
POMONA, CALIFORNIA

The Schandoney Equalizing Hitch



perfectly equalizes from four to forty or more animals in a team. No whip required to drive them, each must do its share. The team in this picture shows 26 Mules hitched to a 16 ft. Houser-Haines Harvester, cutting down barley in sediment soil. Guess how many pounds each animal is pulling? For further information, Catalogue, etc., write today to

Schmeiser Manufacturing Company Davis, California



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IRRIGATE WITH A

Commercial Gas Engine

SEND FOR BULLETIN NO. 12
AND YOU WILL

Commercial Engine Company
953-955 No. Main St. - Los Angeles, Cal.

THE
Latest Deep Well

Guaranteed to deliver from 100 gallons per minute upwards, depending on the diameter and capacity of well, from a depth of 50 to 300 feet below the surface. Can be either belt driven or direct connected to electric motor as occasion requires.

Write for Catalogue 46B.

Byron Jackson Iron Works

Turbine Pump

A deep well pump that has no valves or plungers to wear or get out of order, no gears, consequently no noise or breaking of teeth.

Compact, durable, always primed and ready to operate, constant flow, hence increased capacity of well.

This type of pump is fast taking the place of Vertical Steam. Deep well Plunger and Propeller Pumps.

Main Office and Works:
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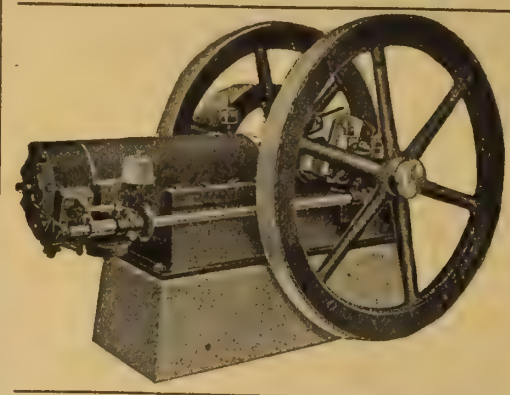

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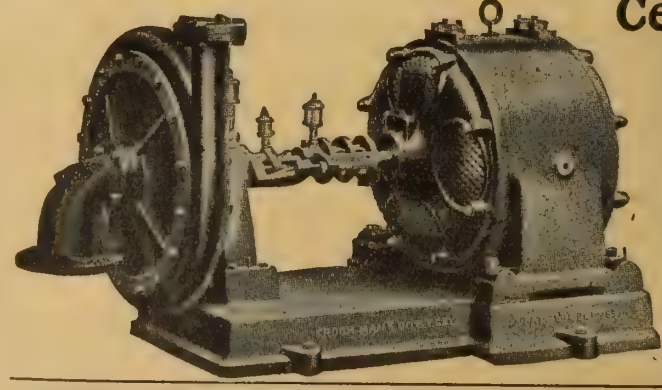

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California Cultivator

Published Weekly — One Dollar a Year

Los Angeles — April 29, 1909 — San Francisco

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TRADE Sharples MARK 29 Yrs

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This picture shows just a small part of the **carloads** of common "bucket bowl" cream separators, of all kinds, we have recently received in exchange for Sharples Tubulars. The former owners thought they wanted "bucket bowl" machines. But they soon wished they had bought Sharples Tubulars instead.

This is just a hint to you from what others have learned by experience. Thought they would like common "bucket bowl" cream separators—the kind with bowls set open end up, fed through the top, and filled with contraptions. Tried them, were not satisfied, traded them to us, for a small part of their cost, in part payment for a Sharples Tubular. They made a mistake in buying "bucket bowl" machines, but were sensible enough to correct it.

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Toronto, Can. **West Chester, Penna.** Portland, Ore.
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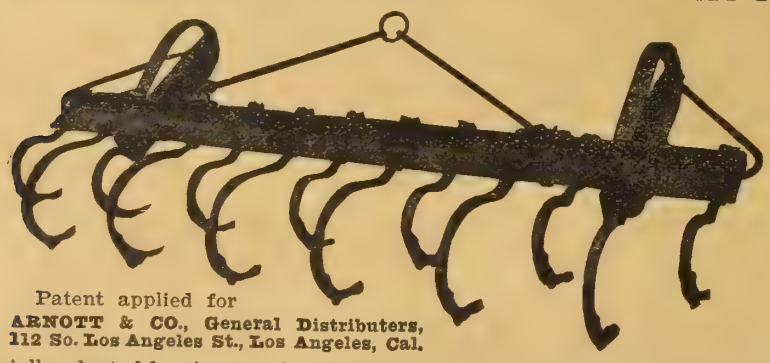

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The following is a sample of the unsolicited testimonials received regarding the Williams Goose-Neck Cultivator:

Merle, San Diego County, Cal., March 25, 1909.

Arnott & Company,
Los Angeles, California.

Dear Sirs:—You may recall that I recently purchased one of your Williams Goose-Neck Cultivators. I wish to say that I am exceedingly well pleased with it. In fact, as I told Mr. Jones, your representative in Oceanside, I would not take $500.00 for it if I could not get another. This is not an exaggerated statement, I mean it literally. In this section we do not have irrigation and everything depends on proper cultivation, so that good tools are very important. There are three points in which the Williams Goose-Neck Cultivator surpasses all other cultivators which I have seen, viz:

First. The draft is very light. My two horses weigh 900 lbs. each and they have no difficulty in drawing the 7 ft. cultivator.

Second. The Williams Goose-Neck Cultivator stirs the soil well without exposing the subsurface, thus preventing the escape of moisture.

Third. The cultivator being of low construction, one can cultivate under the trees as easily as harrow.

I was showing my cultivator to a neighbor the other day and had him take it home to try it. The use of it for half an hour so thoroughly convinced him of the merits of the tool that he has, through Mr. Jones of Oceanside, given you an order for one-half dozen cultivators.

Messrs. Williams & Son of Orange certainly deserve great credit for inventing the Goose-Neck Cultivator.

Sincerely yours

LOUIS C. LUHR.

WILLIAMS & SON, Mfrs., Orange, California

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is one of the leading lines on the market. The Plano Mower has a number of improvements not found on other leading machines. All we ask is a chance to show up our line and then let you judge for yourself as to the quality compared with others.

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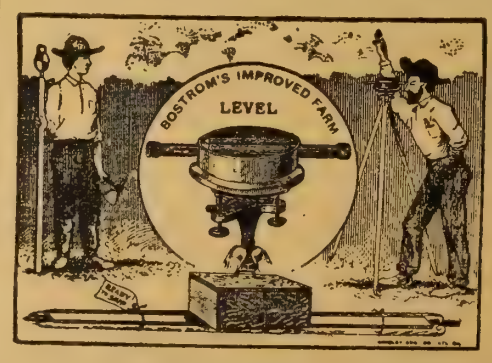

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California Cultivator

Vol. XXXII—No. 17 Los Angeles, California, Thursday, April 29, 1909 Subscription $1 a Year

Life History and Control of Red Scale

An Excellent Article by Prof. A. J. Cook of Pomona College

The activity of the Claremont-Pomological Club has been remarked in this paper. The work is enlarging and becoming more practical. The Pomona Journal of Entomology is the latest manifestation of the activities of that Club, though the Journal is really published under the patronage of the Ontario-Cucamonga Citrus Association and by the Department of Biology of Pomona College. It is most creditable to that institution and doubtless will be of practical value to orchardists. The following liberal quotations are from the pen of Prof. Cook and from the first number.

IF WE expect the water problem, and possibly that of fertilizers and cultivation, no question more concerns the growers of citrus fruits than that of scale insects. Success demands their control and that often involves great expense. At present, there are four or five of these insects that are seriously destructive in Southern California; the yellow scale, the black scale, the purple scale, the mealy bug and the red scale. So blighting is the work of these insects, and so difficult and expensive their control that it is exceedingly important to eradicate them, if possible, when localized, and to quarantine rigorously against them, when absent. All scale pests, when numerous, are very harmful to the plants on which they feed. The red scale is perhaps the most to be dreaded, as from the great variety of its food plants, it becomes very difficult and expensive to successfully fight it. Its enemies have not in the past been able to hold it in check, or prevent its spread. Right action in this matter means a tremendous saving to our citrus fruit growers.

Family of Scale Insects—Coccidae.

A word about this family of insects that includes the scale insects and the mealy bugs is desirable. The females are always wingless, though both sexes are scale-like in form at first, while the mature male is always possessed of two wings. Like the Aphids, or plant lice, and the Aleyrodids, or white flies, they belong to the Homopterous division of the true bugs or Hemiptera. In this sub-order the wings are much alike, and all are quite similar from end to end. All insects in this order are pre-eminent for their sucking habits. Their rostrum or beak is made up of needle-like mouth-parts and modified specially for piercing and sucking.

Sub-Families of Coccidae.

There are several sub-families of coccids, three of which greatly interest our orchardists. The females of actolypinae or mealy bugs preserve the form of the very young throughout life, and are always active. They secrete a waxy covering that serves to protect them, and often crawl into crevices and even into the earth and so are difficult to combat. Their habit of movement throughout life, makes their spread more easy and rapid. They are seriously destructive.

The second sub-family, Coccinae, are unarmored, and so when we touch the scale, we touch the insect. We are familiar with these in the black scale, the frosted scale and the soft brown scale. The absence of armor or a separate scale to shelter them makes their destruction more easy.

The third sub-family Diaspinae, has a separate scale which consists of a central projecting portion, made up of exuviae or cast skins of the young or laval insect, and a flatter border, a secretion, which is gray or brown. We are familiar with these in the red, yellow, purple, greedy and lemon-peel or ivy scale. This protection makes their destruction more difficult; hence the increased dosage for red and purple scale when we fumigate. In both these last two sub-families, the young insects soon become anchored, by their long beaks, and so move but little, though the Coccinae can, and upon occasion do so move till quite late in their development. With the first moult the Diaspinae lose their feet and antennae, and the motion that they seem to make must be largely through their rostrum or beak.

Reproduction of the Coccids.

Many scale insects, like the black and purple scale, are oviparous, that is they are egg-laying. These are likely to be more regular or periodic in their appearance, and so we may find most all eggs, or young, or mature, at one and the same time. This, of course, is favorable to their destruction, as we can plan to fight them, while they are all young and more easily killed. In our warm climate, this regularity is likely to dis-

Red Scale on Orange.

appear. Other scale insects, like the red, the yellow and the soft brown, are ovoviviparous, that is, no eggs are ever laid, but the insects are born alive, and are active at once. We are likely to find these in all stages of growth and development at any day or week of the year. Of course, this makes their destruction the more difficult.

Nativity of The Red Scale.

China has been claimed as the original habitat of the red scale. This may or may not be true. The fact, however, as we shall see, that it feeds on a great variety of food plants, has resulted in its being spread all over the earth, so that now it is found on all continents, in New Zealand, Hawaii, and many other islands. This fact is important, as it makes their introduction into new localities more easy and probable. We are not surprised then to learn that this pernicious scale is in every county of Southern California. Localities, like Claremont, that are free from its ravages, should spare no effort to keep it out; those not so fortunate, should, for self-interest and good of neighbors alike, be equally active to exterminate the pest in their orchards. Of course, this is very difficult, when the insects have become thoroughly distributed.

Description and Life History.

The scale of this species is very minute, hardly larger than a small pinhead, approximately circular if covering the female, and slightly elongate, in the male. It is sufficiently transparent to show the insect beneath, and so, at first, is centrally yellow, and later brown or red, while about the margin it is gray. The thorax of the female is much broader than the abdomen, and reaches around and projects back of the latter, so that the insect appears to be deeply lobed behind.

The male when mature, as with all coccids, has two wings. This and its form make it curiously different from the female, or from its earliest self, while it is yet under the sheltering scale.

The life history is as follows: The young may be produced in broods of from twelve to seventeen each, and are being born continuously for several days. We never see eggs except in the abdomen of the partially transparent female, as the young are born alive. We see then that there may be several generations each year, and that they are enormously prolific.

The red scale works on all of our citrus trees, on the rose, apple, peach apricot, and other rosaceous trees, on fig, olive, many palms, sago palm, oak, willow, euonymus, and not a few weeds. I have seen a stem of castor bean so thickly covered with the red scale, as to hide the stem absolutely from sight.

The Yellow Scale.

The Yellow scale is so closely related to the red scale, that scientists regard it as a subspecies, only. It is Chrysomphalus aurantii citrinus. The scale is less convex, not so regular at the margin, less distinctly red in color, slightly more transparent, and the female adheres more tenaciously to the scale, than does the female of the red scale. The most obvious characteristic of the yellow scale, is that it rarely works on the twigs, but only on the leaves and fruit, while the red scale anchors and sucks from twigs, leaves and fruit. The yellow scale is more prone to change its position on the leaves, and so is more likely to be indicated on the foliage, by yellow spots. While the yellow scale is not generally regarded as so serious an enemy of the citrus grower as the red scale, yet in many cases

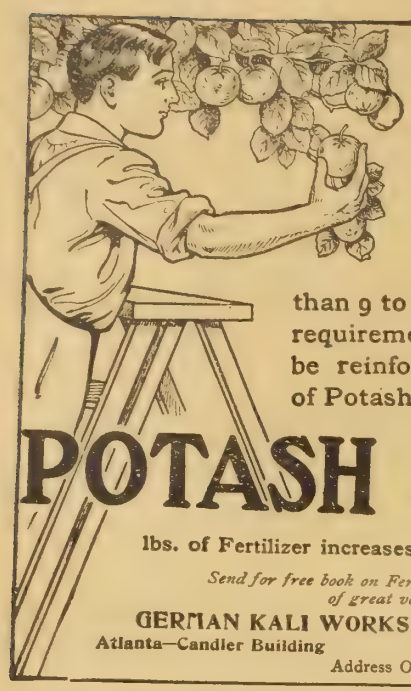
Red Scale on Lemon.

it is an enemy of no mean rank. Orchards near here are badly injured by the yellow scale.

Parasites and Predaceous Insects.

As yet no parasitic or predaceous insect has served to appreciably lessen the number or work of the red scale in our orchards of Southern California. This is not true of the yellow scale, as the golden Chalcid has in many places seemed sufficient to hold that species in check. As suggested above, the yellow scale about Claremont is not controlled by its insect enemies. This greater freedom from attack by parasites of the red scale, is another important difference between these two species, which in general are so closely similar. While we should strive to secure parasites that would be as efficient to destroy this red scale as is Novius (Vedalia) cardinalis to combat the cottony cushion scale, yet we must not withhold fumigation until some enemy is found that will control the scale. We can never afford to allow our orchards to be victimized by these devitalizing sappers.

(Continued on Page 501.)



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Potash

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There are now about seven hundred miles of canals and ditches in the Imperial valley.

With the Citrus Growers

TESTS MADE ON FERTILIZERS.

LAST December the Citrus Experiment Club undertook to determine just what is the true value of the barnyard manure that is on the market in this vicinity. Ten cars of manure were sampled by this club and analyzed by the fertilizer chemist at Berkeley. The following being the analysis:

Kind	N.	P2O5	K2O	Ton Value
Cow and sheep mixed	.66	.44	1.64	$5.00
Corral, No. 1	1.06	.78	2.34	7.77
Corral No. 2	1.12	.68	2.83	8.47
Mean of 2	1.09	.72	2.58	8.12
Barn Yard Manures—				
No. 1	.41	.29	.51	$2.53
No. 2	.44	.34	.58	2.79
No. 3	.46	.35	.50	2.79
No. 4	.54	.41	.70	3.40
No. 5	.52	.40	.83	3.46
No. 6	.59	.36	.68	3.53
No. 7	.53	.34	.96	3.59
Mean	.50	.36	.68	3.17

[N is the symbol for Nitrogen, P2O5 for Phosphoric Acid, and K2O for Potassium oxide or potash.]

These analyses have been grouped into three groups because they represent three entirely different classes of manure. The first sample was evidently from a cow and sheep corral which had dried out a great deal. It was more valuable per ton by reason of the fact that the non-fertilizing element, water, had mostly disappeared.

The two corral cars came from the desert region near Daggett and had also concentrated by losing most of their original water.

The other seven cars were from stables and were typical stable manures.

The value of these manures were calculated by taking the unit values of nitrogen $4.00, phosphoric acid $1.05, and potash $1.16, which is equivalent to by the pound, nitrogen 20c, phosphoric acid 5¼c and potash 5 4-5c.

Anyone familiar with fertilizers would have estimated the first three samples to be far superior to the average barn yard manure, but the same man would have been surprised at the slight difference in the other seven samples. One would have placed these seven very nearly in the order of their analyses by casual observation. The reason for the variation being so slight comes from the fact that materials used for bedding have a composition not so different from the manure itself. The variation in these seven samples was mostly in the straw they contained.

One-half of the nitrogen of manure is in a soluble form, four-fifths of the potash is in a soluble form and only one-fifth of the phosphoric acid is soluble. The value of manure is largely due to the bacteria which manure contains. The bacteria are very influental in rendering plant food available and for that reason most plant food in an unavailable form are improved by being mixed with manure. But no material should be mixed with manure that sterilizes it. The practice of using acid phosphate or other acid materials on manure to conserve the ammonia has been recommended in the past, but is being condemned now. While such practice does conserve the ammonia it kills the bacteria of the manure. The reasonable thing to do is to get the manure into the soil as quickly as possible so that very little ammonia is lost.

Through the courtesy of J. F. Jackson we were furnished the measurements and weights of thirty-seven cars of manure which enables us to estimate the value of manure by the foot. These estimates are of course on the cars and not by wagon measurements. These cars were taken at random so they probably well represent the weight of a cubic foot of manure. These figures show the weight of a cubic foot of manure to vary from 21 pounds to 67 pounds with an average of all 37 cars to be 44 pounds. On the basis of 44 pounds per cubic foot, a composition of .50 per cent nitrogen, .36 per cent phosphoric acid, and .68 per cent potash and unit values of $4 for nitrogen, $1.05 for phosphoric acid and $1.16 for potash, one cubic foot of average stable manure is worth 6.97 cents.—J. H. Norton, Secretary.

DUTY ON LEMONS.

The following editorial appeared recently in the San Francisco Chronicle and is in the main correct. One error is that California's production of lemons is considerably in excess of 1200 cars, but by no means as much as it should be, nor as much as it will be under a little more encouragement. The Chronicle says:

"The present duty on oranges and lemons is one cent a pound. As to oranges, that duty is sufficiently protective without excluding oranges at any season when the domestic supply is insufficient. There were imported in 1907 21,213,745 pounds, which shows that the duty is not prohibitive, but that foreign oranges are kept out by the abundance, excellence and cheapness of our own fruit. As the result of this protective duty oranges, once a luxury, are now articles of ordinary consumption by people of all classes in every town and hamlet in the United States.

"The same duty on lemons has not been so effective. It was in evidence before the Committee on Ways and Means that a duty of one cent a pound has been sufficient to give our California lemons the market as far East as St. Louis and Chicago, which are in fighting ground, but has not enabled them to get much hold in the States further East. The production of this State is about 1200 "carloads," presumably of twelve tons, which would make an output of 28,800,000 pounds, while the importations in 1907 were 153,965,258 pounds, or about five times what we were able to sell. The lemon industry has not been as profitable in this State as the production of oranges, and many lemon groves have been worked over into oranges. Nevertheless our production is gradually outrunning our available markets, and with a little more encouragement within a very few years our domestic lemons would get the American markets as completely as our oranges have got the orange market. Our representatives asked for a duty of one and one-half cents in the new tariff, and in spite of the general tendency to reduce duties, and of the attacks of New York lemon importers, the committee made an increase of one-quarter of a cent a pound on the showing of the figures that the present duty has not enabled us to get more than one-sixth or one-fifth of the American market. The

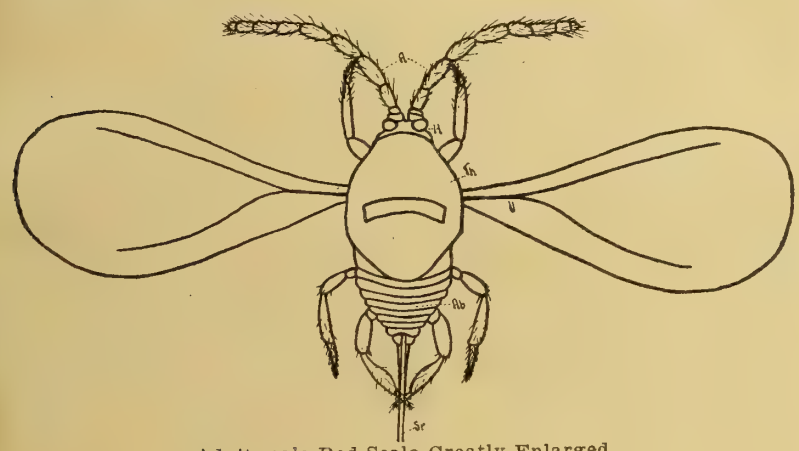
committee was very conservative, and probably did not grant an increase on a single item in which the figures showed that the American product held one-half the trade."

RED SCALE.

(Continued from Page 499.)

Practical Suggestions.

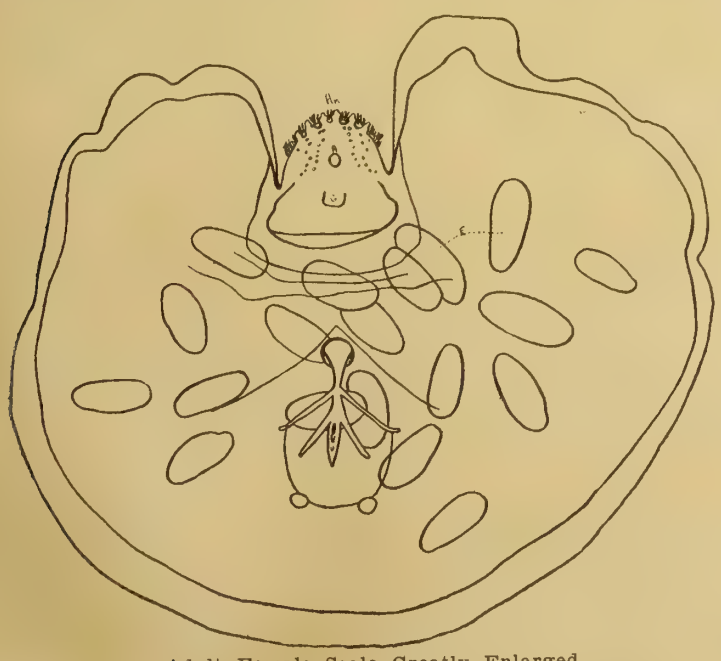
The fact that the red scale is armored, and exists at all times, and in all stages of growth, makes its destruction very difficult. It requires nearly or quite double the black scale dosage and about as much cyanide as does the purple scale, if we would secure complete extermination. At times, even when we are so thorough, it may be wise, to give a second fumigation as soon as we can learn, any scale, as we then kill both the black and the other as well. It is not wise, however, in case the red scale, the purple scale, or the mealy bug are found to be introduced in any region, to wait for autumn, but to fumigate at once. They are all very prolific, and are easily scattered by wind, bird or insect, so immediate extermination should be the watchword, as soon as their presence is discovered. To delay treatment is costly and dangerous, and makes the orchard a menace to all others in the region. For the red, the yellow, and the purple scale, it is fortunate if we can fumigate in summer just after all the fruit is gathered, as then we have only the scale on the leaves and twigs to combat; but as we would hasten if fire was nearing dynamite so we must not delay if we discover red scale in our orchards. For the purple scale and for the mealy bug, double the black scale dosage is required,



Adult male Red Scale Greatly Enlarged.

by examination, that the first fumigation was not entirely effective. The tents must be gas proof, and should remain over the trees for a full hour. They should also in all cases of fumigation, be marked as directed by the Department of Agriculture, that there may be no guess work, and so no possible mistake in determining the amount of cyanide to be used in each case.

As is true of all scale insects, all weeds that may harbor the scale should be kept entirely from the pre-



Adult Female Scale Greatly Enlarged.

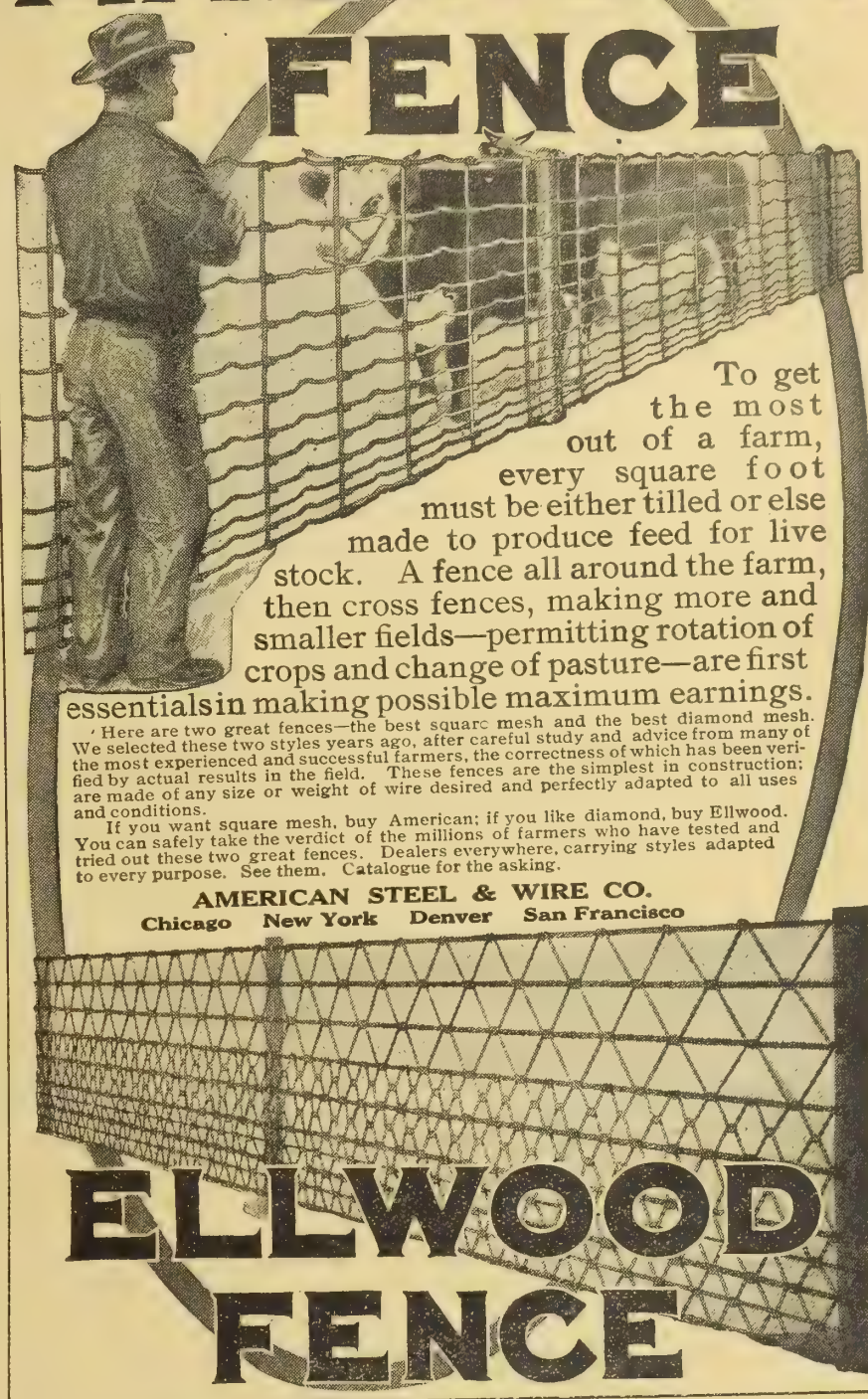
cincts or neighborhood of the orchard. Clean culture, except in winter, when the best success demands that a good cover crop of legumes be grown, must be practiced. In case of red and purple scale, it is wise to gather and burn the fallen fruits. On fallen leaves scale insects soon die, but they live a long time on fruit.

Hints on Fumigation.

Fumigation for black scale may best be done, when all the scale are hatched and still quite young. For our locality this is October and November, though when necessary this may extend from September 1st to February 1st. As there are more or less black scale in all our citrus and deciduous orchards, this is a good time to treat and for the red and yellow scale it may be economy to hit as hard. The Woglum system of marking the tents and amount of cyanide to be used, must be followed. There is no excuse now for any guess work. The loss suffered by our growers in the past, by faulty guess work and too slight dosage, has been enormous. Nor is it enough, as we have been doing, to simply fumigate our citrus trees. We must look after every tree, shrub and plant that harbors the scale in question.

May I, in closing, emphasize four vital points, the observance of which, in the past would have saved hundreds of thousands of dollars to our orchardists; and the observance of which can and must save, in the future, fortunes to our people. First we must have thorough inspection, that every orchardist shall know just the condition of his orchard. Secondly, we must have a sufficient dosage, that will always kill the scale, though the tree is a little burned at times. Third, we must have fumigation by the block system, and thus save the necessity of fumigating oftener than once in three or four years. Lastly, the Exchanges must do the work, as this alone will insure that the scale will always be "hit hard." Absolute thoroughness is the Golden Rule in fumigation.—A. J. Cook, Claremont.

AMERICAN FENCE



To get the most out of a farm, every square foot must be either tilled or else made to produce feed for live stock. A fence all around the farm, then cross fences, making more and smaller fields—permitting rotation of crops and change of pasture—are first essentials in making possible maximum earnings.

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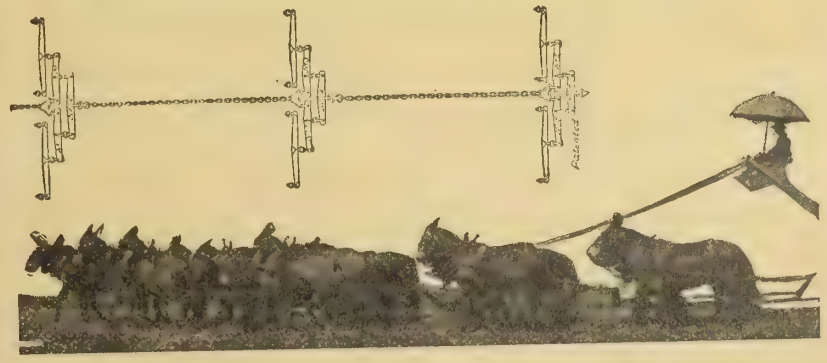

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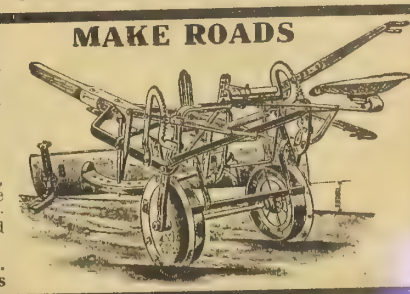

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Deciduous Fruit Culture

By J. W. Mills

NEW FRUITS OF VALUE.

THERE has been of late considerable criticism by fruit growers in the eastern states of the new fruits and flowers the production of Luther Burbank which have been introduced there.

While the fact that introducers sometimes too highly color and overestimate the value of some of Burbank's productions is deplored by all right minded fruit growers, it still remains true that many of them can hardly be too highly praised. If the many hybrid plums sent out have not proven to be all that was expected of them in all climates it does not follow that they are not desirable in some localities, and they certainly are valuable in California. For several years in succession I obtained from Mr. Burbank some of his new offerings among them the following:

Royal Walnut. I obtained one tree which has been bearing nuts for three years and have a good many trees raised from nuts from Mr. Burbank. These trees show a remarkably strong and clean growth. The nuts are hard shelled and some larger than the Eastern black walnuts.

Paradox Walnut. I have these trees raised from nuts and also some grafted trees from scions from Mr. Burbank's trees. This I consider a valuable tree for shade and road planting. The leaves are very large and fragrant. Even the wood in winter gives forth fragrance readily. It is a shy bearer of nuts which is favorable to it as it will grow to great size the sooner on that account. Paradox on California black will doubtless be a very hardy strong growing and enduring tree.

Santa Rosa Soft Shell. This variety produces a fine nut white and sweet Just how its bearing qualities will compare with other commercial varieties remains to be determined, with me as my trees have only begun to bear. The first two years ago and more last year, but not in full bearing.

Winterstein Apple. This apple has the Gravenstein quality, but comes later thus extending the season of quality apples. My first apples did not take well, but the past season they sold readily and gave good satisfaction.

The Primus Berry. This berry should have a place in every family garden. It is early and sweet with a decided wild flavor. Best of all for canning. A little too soft for long distance markets.

The Phenomenal Berry. This is the popular berry of today, larger than the Logan and not so sour. Keeps its color and stands up remarkably for so juicy a berry. A fine grower and easy to pick which means profit to the grower for market.

The Pineapple Quince. This fruit is all that has been claimed for it. Large, smooth, easily cleaned, tender, free from grit and delicious flavor. We have no use for common quinces since the Pineapples began to bear and my fruit customers call for them at a higher price. When fully ripe they may be eaten like apples. For canning this quince is very acceptable. These are some of Mr. Burbank's fruits that are a success with me . I have a number of varieties from other sources that I am testing. —Horace G. Keesling, San Jose.

* * *

It is true, as Mr. Keesling says in the above article, there has been much criticism in eastern states as to the attitude of Mr. Burbank and his supporters. We may probably add there has been still more in California. Many regard Mr. Burbank as unfortunate in having friends who pour forth their praise in such liberal chunks that it has become sickening to those who look at the real worth of his productions. The spineless cactus seems to be such a collossal fake that it will affect many people's

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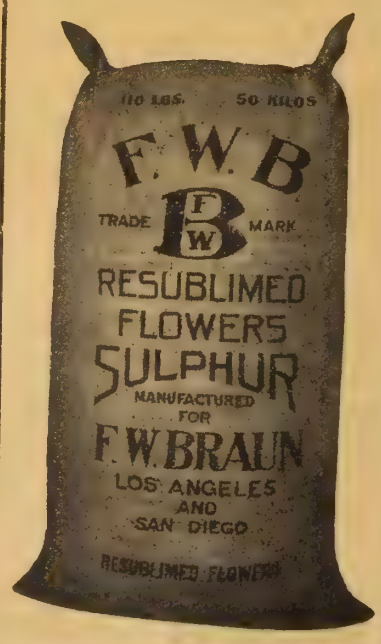

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LOS ANGELES

judgment as to the worth of a few of his productions that may live many years. It is unfortunate that this fulsome flattery has been poured upon him to such an extent that it has so nauseated people. This does not refer to articles written in the spirit of Mr. Keesling's. It is yet rather early to definitely proclaim the commercial worth of some of these fruits. There are others besides those mentioned by Mr. Keesling, notably the Sonoma, Santa Rosa and other plums which have been on the market for several years. Whether these fruits will bear and be a product of large commercial influence, will have to be proven. The trouble is that the whole Burbank proposition, including his name, is being commercialized to such an extent that great injury will be done to a large number of people who buy on the strength of a name and, besides, true experimentation and investigation will be discouraged.

"SHADE CROPS."

THE CULTIVATOR has heretofore had articles on "cover" crops or "green manure" crops, also by Mr. Geraldson on a method of orchard culture in which crops were allowed to grow in orchard and ripen and die on surface instead of plowing under green.

Somewhat along the same line is the following by W. Paddock of Colorado Agricultural College:

All intelligent fruit growers know that Colorado soil is deficient in decaying organic matter. The effects of this condition are seen in the compact, puddled soils, which are almost universally present in the orchard districts, except where sandy land is found. Then, too, in the older orchards we find that the fruit is running small in size, so that it is becoming more and more difficult to get satisfactory prices for the product.

The necessity for maintaining fertility in our orchard soils for a considerable time, at least, seems largely to be a question of maintaining the soil in proper physical condition. The effects of our climate are such that when vegetable matter of any description is plowed into the land it is soon exhausted. It seems to be burned out by the intense sun and the dry air. We are dependent upon organic matter for the degree of fibre and tilth that is desirable in our soils The soil is lifeless without decaying matter. We need this material to aid in setting plant food free, to provide a home for the various forms of germ life which perform many important functions, and to give fibre and tilth to the soil.

Since organic matter seems to be dissipated by the action of the sun it stands to reason that if the soil could be shaded during the heat of the summer, much of this valuable material could be saved. We are therefore advocating the use of a crop in the orchard during the growing season, thus shading and protecting the land from the intense heat of the sun. As this crop has a somewhat different use from the cover crop of the East, we have coined the phrase "shade crop" to distinguish it from the former. It performs all the functions of a cover crop, and has the added usefulness of shading and protecting the land during the heat of the summer.

The system of shade crop management and the plants to use has not been thoroughly worked out; but a great many orchard men are giving it a trial, so it is probable that within a few years we shall have a definite Colorado system of orchard culture. In the meantime it is permissible to predict that the management will be somewhat as follows:

Plant the seed in the spring of the year and plow the crop under the following fall, or, in some instances allow it to remain two years before plowing, depending upon the condition of the land and of the trees. Fruit growers have now generally come to the conclusion that orchard land should be frequently plowed and preferably in the fall of the year, for the reason that if plowed in the spring, particularly if a large amount of green manure or stable manure is to be turned under, difficulty will be experienced in irrigating. This mass of material turned under in the spring prevents the spreading of water to such an extent that the trees nearest the main ditch are often injured before the water can be forced to the lower ends of the rows.

The kinds of crops to grow will depend upon the condition of the orchard. Usually a leguminous plant such as red clover may be used to start with, for the reason that it is able to take nitrogen from the air. If, after plowing under one or two years, it is found that the trees are making a too vigorous growth, some other plant may be used, such as rye oats, or buckwheat.

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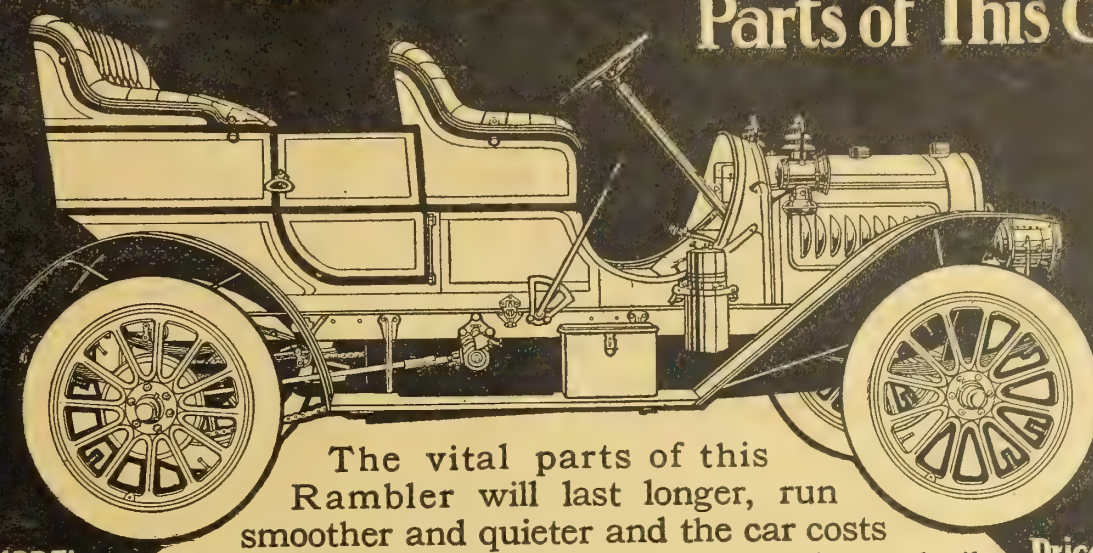

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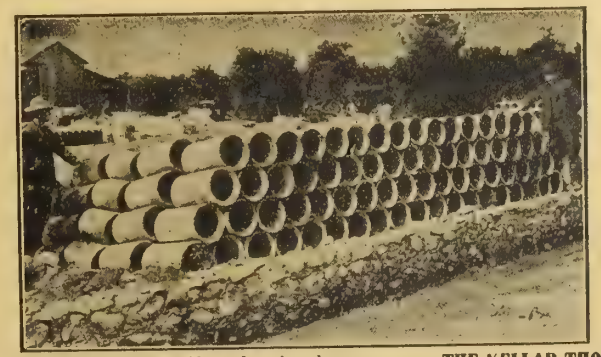

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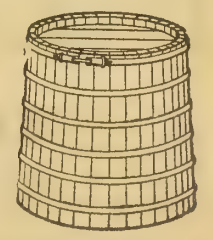

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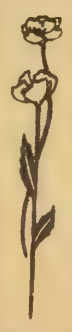

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The Ornamental Garden

INTRODUCTIONS FROM AUSTRALASIA.

IT HAS been stated that the first Eucalyptus were planted in California in the year 1856, but, it was only towards 1870 that their planting became generalized. It is to the energetic and cosmopolitan propaganda of Baron Von Mueller, powerfully seconded at Santa Barbara by the Hon. Ellwood Cooper, that California, not unlike other countries, is indebted for the introduction of Eucalyptus, which it is safe to assert has benefitted California more than any other country. When such introduction was started the extensive forests of live oaks which covered the largest part of California over a century ago, had, most unfortunately, disappeared, chiefly through fires intended to clear the ground for grazing purposes. Without the introduction of the Eucalyptus the wonderful development of this country would have been altogether impossible.

It is estimated that not less than seventy different species of Eucalyptus were grown in California in 1894, which number was considerably increased since, and it is safe to predict that the planting of kinds yielding the best class of timber is going to make great strides in the next few years.

The different species of Australian Acacia, which had been introduced mostly for their tan producing properties, were not much utilized in this way, but they have become one of the most conspicuous ornaments of our gardens, where they bloom most profusely during the winter months. Not a few of the most ornamental kinds were first introduced by ourselves, like A. Baileyana, A. Elata, A. Grandis, A. Obliqua, A. Podalyriaefolia, and others.

We have now growing at Santa Barbara not less than 18 different species of Palms from Australasia, some of them being among the choicest ornaments of our gardens. It was our privilege to be first to introduce the very peculiar "red palm," Livistona Mariae, from the interior of South Australia, quite striking for the coppery red color of its fan shape leaves. Other Australian plants worthy of special notice and of our own introduction are, among fruit bearing trees, Achras Australis, Owenia Cerasifera and Spondias Solandri; among shade and ornamental trees, Ficus Cunninghamii, Rhus Rhodanthema, Sterculia Bidwillii and S. Gregori. In addition to the Acacias mentioned above, we have also introduced the famous "waratah," Telopea Speciosissima, Stenocarpus Salignus; also several species of Hakea, Melaleuca, Myoporum, and Pimelea, all of them much welcome additions to our garden flora.

From New Zealand we have introduced the pretty Carmichaelia Grandiflora, Hymenanthera Crassifolia, Maccropiper Excelsium, and Sophora Tetraptera.

From New Caledonia, the pure white, winter flowering Oxera Pulchella; from the island of Guam the most remarkable local "screw pine," Pandanus Fragrans; and from the group of the Hawaiian islands the very pretty and most interesting Osteomeles Anthyllidifolia, with foliage of Anthyllis and flowers and fruits of Crataegus; also Santalum Freycinetianum, now almost extinct in those islands, Myoporum Sandwicense with wood scented like the true "sandal wood," Myrsine Lessertiana, Pittosporum Hawaiiense, Sophora Chrysophylla, and others.

With increased facilities of transportation a much larger number of interesting plants from Australia and from other parts of Australasia are sure to be added in the near future to our garden flora.—Dr. F. Franceschi in The Pacific Garden.

THE EASTER LILY.

The lilium family is surely one of our most interesting and beautiful of all plant creation. Their conspicuous flowers, striking colors and their stately forms appeal strongly to the eye and to the imagination as well. They are among those good old-fashioned plants which frequently and justly come newly into vogue. Lilies are less understood and less discriminatingly appreciated than almost any other plants of prominence.

The Easter lily—Lilium Longiflorum, also Lilium Harrisii—is a tall large-flowered form, pure white, that is most commonly forced by florists for Easter sale. This variety was introduced from Bermuda about 1875. A Philadelphia woman in returning from Bermuda brought with her two lilies in bloom and presented them to a local florist. The bulbs were increased to 100 in the next three or four years, when the plants were seen by W. K. Harris, an enterprising Philadelphia florist. The earliness of blooming and prolificacy of the bulbs were striking features and led to their purchase by Mr. Harris. In 1882 the lily was introduced under the name of Lilium Harrisii.

In 1882 it was also introduced by a Philadelphia florist under a long Latin name and later by a New York florist as the Bermuda Easter lily.

To botanists it is known as Lilium Longiflorum var eximium.

In California the Easter lily does nicely when planted in the open ground, but will not come into bloom until long after Easter, usually about June.—Pacific Garden.

FOLIAGE, NOT FLOWERS.

It is the absence of unsightly fences, I am told, and the substituting of green hedges that makes the country lanes of England so pleasing to the American tourist. To my way of thinking, foliage, and not flowers, should be the prime factor for public beautifying. Every shade of green in plant life harmonizes with every other green shade, and harmony is the keynote of art, whether in doors or out. This is not true of blooms, any more than it is true of dress goods. Select any half-dozen varieties of vines, shift the grouping as you will, and after every change harmony will prevail.

Again, I favor vines for public places because they climb and creep and twine in and out and all around the unsightly surfaces, rough angles of fences, old sheds, bare brick walls and the dozen and one other hideous structures that make a city anything but lovely.—Mercury Herald.

A review of the Portland hop market shows that the new crop will come on a comparatively bare market which gives some hope to the hop men.

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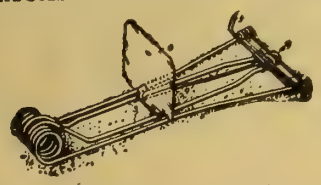

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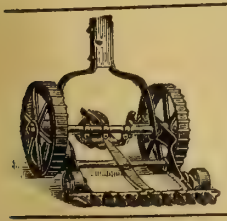

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Small Fruits and Vegetables

THE CHAYOTE OR PORTUGUESE SQUASH.

IF YOU were to ask your rural friends what they still lacked in the garden, they would probably answer; a vine which would grow fifty feet in a summer and furnish good shade, bear a heavy crop of a first-class edible nature and disappear in the winter of its own accord, growing out again in the spring without much coaxing to repeat the operation in a surpassing manner. And they might add, thoughtfully, that should the fruit keep fit to eat a long time, so that it could be dished up on their spring, as well as on their fall, tables, so much the better.

This, yes this, is all done by the **Chayote** or **Chocho**, or **Chuchu**, or **Chow Chow**, or **Cahiota** or **Pepinella**, for by one or other of all these names is it known in various parts of the West Indies and South America, where it drapes the poor man's cabin and fills his platter.

More than that, if the aforesaid poor man decides to change his place of residence, he can dig up the immense tuberous root of his favorite Chayote, and invite all his old neighbors to a farewell feast for it is also edible and even more prized than its fruit.

The botanical name of this culinary prodigy is **Sechium edule** and it belongs to the one-seeded Cucurbits. The vine has tendrils and climbs readily, making a rapid summer cover for back porches, arbors and chicken yards. The leaves are large and like those of the cucumber. The flowers are greenish or creamy in color, and come in two families; the male flowers are in long-stalked clusters, the female are solitary or in pairs on a short stem. The fruit is four to six inches long and may weigh up to three pounds; it is shaped like a flattened and ribbed pear, has a thin, smooth, shiny skin and is somewhat spiny. They begin to ripen in August, and are produced until the cold weather of these parts kills back the vine.

The fruits can be cooked when picked, or stored away, to be used as needed during the winter.

Two year old vines and even one year old ones have borne upwards of 500 good fruits each this season in Pasadena and had plenty of immature fruits on when the tops froze. With protection on extra cold nights the vine would probably continue to ripen fruit during most of the winter. The fruits are usually cooked in the same way as summer squash or vegetable marrow and taste very much the same as these; in fact those who have sampled them here say, even better. They can also be baked, used in salads, or prepared in a variety of ways for the table. The root forms a large corky tuber and, by many in the tropics, is preferred to the yam, which it resembles.

The single flat seed is one to two inches long, and cannot easily be removed from the fruit; so the entire fruit is planted.

The fruit can, if kept dry, be carried over winter, and will often sprout more or less in the meantime, without being spoiled for planting.

There are many varieties, ranging in color of fruit from green to white. Green fruits are so far the more common here, but white ones have also been introduced and promise to sell better on their looks.—Pacific Garden.

FOR "GREEN CORN."

As a list of desirable varieties of corn to plant in this state, the Pacific Garden gives the following:

The two drawbacks to the enjoyment of the fruit of the cob in this climate are cold nights and grubs. The first mentioned we cannot offset, nor the second either perhaps, though it has been noticed that early and late sowings are more free from grubs than the mid-season crop. The varieties that can be recommended are in the order of their earliness:

Peep o' Day.

Very small cob, but very sweet and worth while planting in a limited way as a starter.

Golden Bantam.

The best all-round family sort. Not a large cob (6 inches) but the sweetest of all. The kernels are plump and yellow. It is as free from grubs as any and can be planted early and late. Last season in Pasadena it won opinions as golden as its color. It will give you corn before you leave for the beach. Do not fail to plant Golden Bantam.

Early Crosby.

Back east this is a favorite among the large medium early sorts and has been for many years. It is worthy of trial here. (7-inch ear).

Early Mammoth.

The most popular variety in this state for main early crop. It is considered very free from grubs and of excellent quality. A heavy yielder of good sized ears (8-inch) with large kernels.

Black Mexican.

The way this is called for by our old residents proves it to be a good corn to plant here-abouts. Plucked at the right stage it is extra tender and sweet, and the grubs don't seem to know it. (7 inch ear).

Country Gentlemen.

The "shoe-peg" corn. Considered east and west the sweetest and meatiest of the big-sized late kinds for family use. (8 -inch ear).

Oregon Evergreen.

A Pacific Coast kind which the Los Angeles seed men say is the favorite with their market growers. It sustained its reputation last season as to quality, yield and perfectness. (8-inch ear.)

WORKING TOO HARD.

The owner of the farm had been enjoying himself at the county fair, while his hard-working wife stayed at home to see that the farm suffered no loss in his absence.

"Well, Sarah," said the owner upon his return, "I'm about all tired out. Is the cows in the barn?"

"Yes; long since," replied his wife, barely looking up from the task then in hand.

"Is the hosses unharnessed an' fed?"

"Yes."

"Chickens locked up?"

"Yes."

"Wood chopped for mornin'?"

"Yes."

"Wagon wheel mended an' ready t' start in th' mornin'?"

"Yes."

"Well, then," concluded the exhausted owner, with a sigh of relief, "let me have my supper. I'm goin' to turn in. Farmin's beginnin' t' tell on me."—New York Herald.

WHAT'S the matter? Why, there's a poor lubricant on the axles, and the wagon drags, the horse pulls hard, and the driver is annoyed.

MICA Axle Grease

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CANNERS' SUPPLY CO., DETROIT, MICH.

50,000,000 Americans Expect to Die in California

Several Millions of Them Will Not Get Around to It in Time, but a Great Many of Them Will

People who have come to California in the past have not been driven here by "land hunger." They have come here to spend money rather than to make it. Thousands of them have acquired city homes, winter homes, mountain homes, and homes along the sea—homes that would afford them pleasure and luxury, but the thought that they could have these things, and yet make money out of their purchases seldom occurred to them. Up till quite recently California has not been held up to the easterner as a land of agricultural possibilities. And so the domain east of the Rockies is packed with people who expect to come to California when they can "afford to," but till then to remain where they are.

Of late, however, the information has gained ground that the "New California" is peculiarly a land of agricutural opportunities, the likes of which the land hungry have not had a chance at before, and California is rapidly becoming **the** Mecca of the homeseeking millions of the east. They are coming here in greater numbers than ever before, and the influx has but started. It will gather strength with time, because everyone who comes here and sees the wonderful possibilities in rural home making brings others, and they in turn will induce friends to come. In short what took place in the prairie northwest is beginning to take place here.

A Leaf from Experience

To show what we are up against here let us see what has happened in the prairie northwest in the last ten years. Up till that time the original settler held those rich lands undisturbed. His lands had cost him little or nothing, and he valued them in proportion. He knew the land raised him good crops, but he never stopped to figure that they were worth that what they would pay interest on. Neither did he stop to think that productive lands are very limited and that it will not be long till North America will have to hand out the sign "Standing Room Only. Productive Lands All Gone." He did not stop to reason out that we are up against a limited supply and an ever increasing demand, and that the inevitable consequence is high prices—productive lands selling from the hundreds in the grain raising sections of the east to the thousands in the irrigated fruit and alfalfa sections of the Pacific coast. He slept in peace and quiet.

The congestion in the extreme east became oppressive. These people came to appreciate productive land because it was scarce, and so they began to filter through the prairie northwest, buying the cheap lands there. The original occupant sold at most any price. He did not know what he had, so he gladly took anything offered him, supposing that he could go almost anywhere and "take up" a few more quarter sections at his leisure. He awoke to the fact that free productive lands in the U. S. were gone, and that he had squandered his birthright, and straightway he was consumed with land hunger.

This process continued and in ten years land has climbed from $5.00, $10.00 and $15.00 per acre to $50.00, $75.00 and $100.00 per acre, and are still going up. And this in sections where the highest priced crop possible is wheat and corn, and where farming is more a matter of luck than science, on account of climatic conditions.

And so it has come to pass that in the past ten years the great empire of the Canadian Northwest has been populated by the overflowing, land hungry of the U. S. The semi-arid plains of the central west, that up to a few years ago were given over to ranging, are now dotted with the shacks of the land hungry, and the movement has only begun.

They Want Something Better

But thousands of those who have "sold out" under the sky farming system of the east have come to know that there is something better, something surer, and something that eliminates most of the uncertainty incident to his old methods. That something is irrigation. And so for a few years back the overflow from the prairie west has been going onto the numerous irrigated projects of the north coast country, till lands there have risen in value up to as high as $3,500 per acre.

California has felt this movement principally in the older sections where easterners have slowly drifted in, secured a few acres of land and as surely raised the value till now certain sections south of the Tehachapis are full and prices of productive lands are going up, till in some communities they have become almost prohibitive.

In other sections, however, the original settler is still sleeping alongside his opportunities, allowing the land hungry easterner to come in and take his lands at a price about equal to the price of one normal year's crop.

The Only "New West"

About the only remaining "new west" is the "New California"—the San Joaquin Valley—a domain that for agricultural possibilities probably has not an equal today. Here we yet have "ground floor" conditions—here the best of lands can yet be had at about the price of one year's crop, and it is this valley that is attracting the attention of the land hungry east as it has not been attracted before. Since last fall hundreds have come here to investigate and hundreds have invested and are now residents of California.

Each one of these is bringing more, and in the near future the character of the population will be changed; in the near future there will be a density of rural population here that will surprise the most sanguine, and there can be but one result.

The Inevitable Result

Density of population means high land values. This is an incontrovertible proposition. Put a million people on Gibralter and the absolutely barren rock could probably be sold for $500 per front foot. Land values increase in the same ratio as the population. The only element that has been lacking in the San Joaquin Valley has been population—everything else is here. Now that the people are coming the good lands will increase in value, and the increase will come rapidly.

Are the People Coming?

As answer to this question note the record made by the **Kerman Tract.** Since last November more actual occupants have bought on this tract than on any other irrigated tract on the Pacific coast. More than this: If any irrigated tract on the Pacific coast has ever made a similar sales record in the same length of time, the record is unheard of. And these sales have been made to actual settlers and not to speculators. And the making of this record is no accident. It is the result of the inherent merits of the tract, and very few prospective buyers have looked over the land without buying.

This tract has the **location,** being on the main line of the S. P. and but a few mile distant from a city of over 30,000.

It has the **soil,** it being a sedimentary deposit, deep, mellow and full of plant life. It is peculiarly an irrigable soil, being sufficiently porous to furnish the best of circulation for both air and water, and preventing undue evaporation. The tract is level, so much so that on the orignal tract of 36,000 acres there is not a foot of fluming.

The **climate** is ideal for the production of semi-tropical fruits and alfalfa. The products natural to this tract are of the character that bring the high prices and that are destined to increase as time goes on. Owing to the dryness of the atmosphere there is a noteworthy absence of insect pests, that so often make fruit growing difficult in the more humid sections.

The **water right** is not surpassed, if equalled, in the state. The system drains the famous Mt. Whitney region, the highest watershed in the United States, which insures an abundance of water during the middle of summer when it is most needed. It is cheap, ample, fully guaranteed, appurtenant and perpetual. The system is not on paper only, the water to be delivered sometime in the future. The system has long been in use, and the water awaits the rancher at the line of his land.

The **drainage** is such as to insure immunity from seep or subirrigation. The San Joaquin river borders the tract on the north, precluding the possibility of a troublesome rise in the watertable in the land.

The **prices** are $110.00 and $150.00 per acre, with terms so arranged that people with small capital can secure a home and competency for the future. Our literature gives full particulars as to plan of selling.

Now is the Time

There is no surer investment than good irrigated lands in California at this time. There is but one California and there can never be another, and there is a world of people that would like to live here. We are on the eve of the greatest land movement in California, and those who expect to secure their acres while they are yet cheap will do well to act now. There is absolutely nothing to be gained by waiting, and there is everything to lose. As soon as the rush gets general and lands move generally, prices will begin to soar, and that time is already setting in. And those who come first get the most advantageous selections. It matters little whether lands are wanted for actual occupancy or for investment—now is the time—not next year. The results are sure. The buyer of Kerman lands now will be the capitalist of tomorrow—he cannot help himself if he buys now and holds for the rise, improving the land in the meantime.

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Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

By Mrs. Minna E. Sherman

GARGET.

THIS trouble is known as mammitis by the veterinarian and is an inflammation of the glands of the udder. It may come from natural causes of an excessive flow of milk in an undeveloped udder. This frequently occurs in the heifer with her first calf. In heavy producing strains of cows this has forced the dairy man into breeding early in life instead of waiting for fuller maturity in the animal. This has in the long run proven to make the breeds weaker and to reduce the health or rather stamina of the strain. The younger heifers have the udder in a more plastic form than the mature cow, and not having the great amount of blood force do not take the garget. At 24 months old the growth of the animal has in a way kept her from making too much milk at first. The udder is still growing and it increases in capacity as fast as the milk-forming power increases.

When the older cows have attacks of garget, the milking should be looked after first of all; carelessly leaving a little milk behind in the udder while the milk is increasing, will bring on garget. Rough handling is another cause. Not necessarily intentionally rough, but any hard pressure or jerky milking. Sticks and milking stools are sometimes the cause in the hands of an irate man. Don't keep a milker that has a chronic grouch. Oh! for the milker that sings to the cows as he milks them! The heart full of joy makes loving kindness easy in the stable and barn. Horns on the head of a boss cow will often be found to be the cause of garget in some of the herd.

Early Milking.

In a heifer herd watch the springers and if the udder fills up with milk before the calf is dropped, milk the heifer the same as though she were an old cow. We have had many of these cases in our herds; the cow Romeo Aggie Acme was giving two gallons of milk at a milking before she ever dropped a calf. This did not prevent her making a record later of 26 pounds of butter in seven days. Fidessa was another cow that was in milking before she freshened with her first calf, she was first prize for two years at the Sacramento Fair and made 25 pounds of butter in seven days afterwards. I am giving these two instances of cows of my own herd and could multiply them by twenty or thirty more on the ranch books. Had these heifers not been milked when the milk first came without regard to the time, they would not be fresh, they would never have made any records worth while. Garget would have taken a part of their productiveness away.

Simple Cases.

Many simple cases of garget in the family cow come from cold. A blanket after calving that covers the cows flanks well might save her from an attack. The treatment is first to put the cow on dry feed. Alfalfa hay is to be preferred. Feed no grass or other food likely to stimulate the milk flow. One and a half pounds of epsom salts, four level tablespoons of ground ginger, shaken up in two quarts of cold water as a drench. In drenching an animal care must be used not to get the fluid into the lungs. If you have never drenched one have some one show you how it is done first. Add a tablespoon of saltpetre to a gallon of drinking water for two or three days. The epsom salts may be repeated if necessary and if the cow is fat. The fluids or watery portions of the blood are worked off in this way through other channels than that of the udder.

Hot Water.

The udder is an extremity and can be stimulated to work by continuous bathing in hot water. One hour three times a day is not too long to reduce the inflammation, for garget is not a trouble that will wait. It must be attended too promptly or the cow has a spoiled quarter to her udder. After bathing the udder, rub on vaseline or cold cream to close the pores and prevent further cold. A mixture of half an ounce of sulphate of zinc and the same amount of acetate of lead in a quart of water, can be used until the inflammation has passed to bathe the udder.

A simple way to handle these cases is to allow the calf to nurse. Watch the cow closely and see that the calf takes milk from all the teats. Heifers are sometimes very rebellious in being milked when the udder is tender, for these the tiny calf is the best milking machine, for the mother love will bear pain to nourish the little one.

Remember that the cutting off of foods that are disposed to produce a heavy milk flow will help these cases greatly. After the inflammation has passed from the udder, begin to feed the milk making foods again, but do so slowly taking, at least, a week to get the cow back to the regular feed again.

Steaming.

In bad cases an udder can often be saved by the use of steam. The cow is brought to the engine house and secured by a strong halter. A heavy horse blanket is folded length wise and put over her body half way to her shoulders. It is fastened with large safety pins on her stomach and at the rear of her flanks. The blanket should be long enough to reach nearly to the ground and pinned into a bag under the udder. An attendant sits down on a stool at her side bares his arm and takes the steam hose in his hand and puts hand and arm into the blanket. This is done so that the steam is never too hot, for the man feels it as well as the cow. The steam is turned on a little head and kept going for half an hour.

The milk is drawn while the udder is relaxed from the heat. I prefer a milking tube to putting any pressure on the udder in these cases. The udder should be protected with a piece of cotton batting with holes cut in it for the teats. Over this put a sack with the same teat holes, by splitting the sack length wise it will be long enough to reach up on the cows back. Sew it there firmly, or pin it with the safety pins.

Often one good steaming with the

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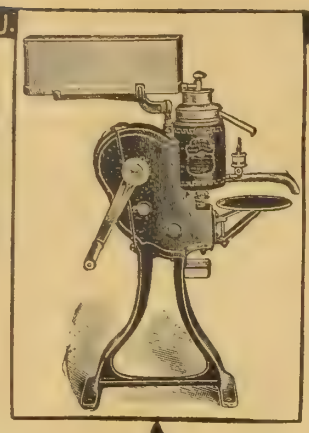

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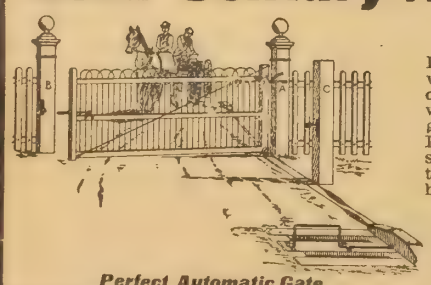

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dose of epsom salts and a little care in the diet, will cure the case. The safety pins used around the stables and barns are large, heavy ones two, three and four inches long. They come to pin the bed covers over fever patients and are useful around the house in many ways.—M. E. Sherman.

THE HOG OF TODAY.

The hog is more of an individual than a machine, and his breeder should treat him as such. Methods which may be accepted as established have been worked out in swine breeding, but adherence to all of them cannot, for many practical reasons, be rigid. The breeder himself, his breeding stock, environment, feed resources, climate and other factors are so largely involved that one man's success may spell another man's failure. A common-sense type of hog in the hands of a common-sense breeder constitutes a combination best calculated for satisfaction and profit during a succession of years.

Live stock husbandry represents a high type of constructive effort, and swine breeding offers as much satisfaction and gain as any other branch. It may profitably engage the attention of the man who raises hogs merely from financial motives, but a breeder who attains a foremost place in his calling has an interest in his business not inspired solely by rewards in money. The compensations of swine raising are ample for the man who desires to make his work a profession, as hundreds who have a just pride in their achievements can testify.

Intelligence used in his breeding and care has raised the hog from the plane of the veriest savage, unsought except when hunted like any other wild beast, to that of a benefactor, contributing a wide variety of meats, among them the most toothsome known to the epicure, and other products essential to the best tables, to commerce and the trades. The hog's disposition has yielded to the influence of good breeding and changed from that of the outlaw, ready for conflict with man or beast, to the peaceable temperament belonging with propriety to the barnyard resident. His conformation has been molded by skillful methods from bony, angular uncouthness into a structure of massive width, depth and thickness, affording a marvelous yield of pork and lard. Incidentally, by domestication and generations of breeding him for early maturity and quick fattening, the length of his intestines has been increased, it is claimed by scientists, more than 130 per cent.

Swine are as susceptible as other animals to the influences of environment, and three or four generations cover a period long enough to bring about great changes in them. Experiments made at the Wisconsin station in crossing the wild or Razor-Back hogs and their crosses with the improved and approved breeds showed that a marked improvement in appearance and quality in the wild hogs progeny was possible, although in constitution and gains of flesh they did not compare with pure-breds, and when cholera struck the station herds these supposedly hardier hogs were the first to succumb. Their feeding habits were irregular; on one day they would gorge themselves so that they would be found fasting for the next day or more. These compelling forces of heredity made plain that both right breeding and right environment are essential to the attainment of right results. At the same time environment may be, in some cases, as destructive in its results as in other cases it is beneficial. Swine typical of the best breeding require but two or three generations of wrong environment to degenerate to the level of the most unapproved types. Much, therefore, depends upon the breeder and his provisions for and care in handling.—From Coburn's "Swine in America."

AN OUTSIDE VIEW OF HUMBOLDT COUNTY.

A recent issue of Hoard's Dairyman has an article by Hon. Levi Wells, of the United States Department of Agriculture, on the subject of dairying as it is conducted in the famous Eel River valley in Humboldt county. There are a number of features mentioned that will prove interesting. The article calls attention to the remarkable showing of 8,500 cows being kept on 10,000 acres of land. This is about correct. There are probably many places in this country where an acre of land supports a cow without the necessity of purchasing any feed, but we doubt if there can be found another district containing 10,000 acres located together that supports 8,500 cows as is the case in the Eel River valley of Humboldt county. No wonder such land rents for $20 an acre and sells at upwards of $300. It only takes the right kind of a cow to make good on it.

In this connection The Pacific Dairy Review would call the attention of Mr. Wells to the fact that remarkable as the Eel River Valley is for the production of cow feed, there are some millions of acres in California capable of doing the same thing. All they need is the development of irrigation enterprises and an intelligent, energetic class of dairymen to make use of these millions of acres.

Many of the best class of dairymen in Humboldt county will not be pleased to learn that a government official of high standing has held the dairymen of that county up before the public as a particularly bad lot when it comes to the matter of the sanitary conditions that they maintain at their dairies and in their creameries. Mr. Wells says that the sanitary ideals are very low in Humboldt county dairying. It is too bad that conditions maintained are such as to warrant such a statement going out over the country, but the fact is there is considerable truth in it and we hope our Humboldt friends will pardon us for repeating it here, and we do so only in the hope that our calling attention to the matter will not only wake up our dairymen in Humboldt county, as well as elsewhere, to the fact that it looks bad and is unprofitable to have low sanitary ideals in the dairy business.

Humboldt county has the best lot of dairymen in the country when it comes to handling cows for productiveness and managing their land for a large yield of feed. It is too bad that a man like Mr. Wells and other visitors to the county credit them for this, and leave the county with what seems to be a scent of dirt from the dairies in their nostrils. Even if the article exaggerates conditions, it teaches a lesson that should be heeded. While California is building up a reputation as a dairy state

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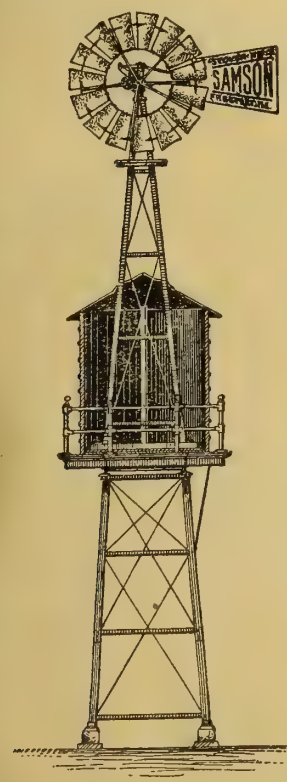

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as regards a volume of business, let every dairy community see that a reputation for cleanliness accompanies it, as is the case of Denmark where so many of the Humboldt dairymen hail from.—Dairy Review.

GALLED SHOULDER.

In your paper of March 4th, I find a query in regard to galled shoulder on horse: The question was well answered, but may I add my experiences with galled shoulders for the benefit of all horsemen handling draft horses.

In the first place a great deal of this trouble arises from the team being put through eight or ten hours on the plow or harrow on a hot day until they are pretty thoroughly warmed up and blowing some, then left to stand and get their wind while the driver sits on the plow beam or fence and talks with his neighbor or companion in the field much longer than he realizes. My plan is never to drive my team until they need to rest ten or fifteen minutes, but give them one or two rounds according to the length of the land, then stop them with head to the wind and raise their collars so as to let the breeze strike them, at same time, rubbing the shoulder a little with my hand and brushing from the collar anything that may have collected upon it. Now this need take but one minute's time and even if done every fifteen or twenty minutes of the day, will take up far less time than the way above mentioned, and is all the rest the team will require. If teaming on wagon the team may be stopped and backed up so as to throw the collar away from the shoulders and an occasional airing will prevent galling. I have never failed to cure the worst cases in this way with the use of plenty of cold water at night, and alum water or oak bark tea as an astringent.

In conclusion, let me offer one more suggestion for the benefit of our most valuable helpers on the ranch, and that is that they be given a little water between meals. How many times a day do we stop at the pump or water jug and refresh ourselves with never a thought for the dumb beast that serves us a life time with no compensation but feed and water. I have one old brown mare in particular who never fails on a hot day to let me know when it is ten a.m., and three p.m., by stoping at nearest point to the house and calling for her drink as it is my custom to carry my team a pail of water at this time and divide it between them. Long live the horse, even the flying machine can't take his place.—C. S. C., Anaheim.

* * *

A humane suggestion, likewise a profitable suggestion for humane treatment with these faithful servants surely leads to greater profits.

AN EXPERIENCE WITH TURKESTAN.

I have been intending to write you my experience with Turkestan alfalfa and noting in a recent issue an article on Arabian alfalfa I wonder if it can be similar.

Two years ago I sowed 100 acres to alfalfa and being short of seed I purchased 100 pounds Turkestan, sowing about five acres through the center of field. The seed came up in fine shape and was a good stand, looked thrifty and rank, two light crops not much different from the common. The third crop and last of the season was not worth cutting, while next on both sides was the best cut of season. The next year the "Turkey buzzard grass," as my family dubbed it, did not start to grow for two weeks, but when warm weather set in it caught up and was a heavier crop than the other. I then thought it was well established and would be a better producer, and of equally as fine quality, but when the weather became a little cooler it did not grow and the last two cuttings of the common while being as good as the former, the Turkestan was not worth cutting, and now this spring it is slow to start, being about six to eight inches shorter than the common right to a line one-half mile on each side. I can not account for it except it is the breed of the animal and has been accustomed to longer and warmer seasons.

If the Arabian is any kith or kin to Turkestan I would go slow in this climate at least.—E. L. Ranney, San Jacinto.

* * *

The above from Mr. Ranney is interesting and we wish more from him. That is, how about quality of the hay. Coburn says: "An advantage which Turkestan has is that the stems are more slender and less woody, the plants making a more nutritious hay of finer quality. That it will withstand drought under same conditions better than ordinary alfalfa." However later in the book the author thinks nothing yet equals the common, well tried variety.

The Turkestan and the Arabian are however distinct varieties. The Arabian is worth a thorough trial. We trust practical growers will keep our readers posted as to its behavior in various sections of the state.

WORLD'S RECORD BUTTER COW.

The milk of the Holstein cow bearing the name above given was tested for butter by a representative of the Cornell University Experiment Station, Ithaca, N. Y., during the latter part of March, 1909, and by the Babcock test showed a yield in 7 days of 28.44 lbs. of butter fat. As such records are commonly stated by the Herd-Book Association this yield of butter fat is equivalent to 35.55 lbs.

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California Cultivator

ESTABLISHED 1889

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Contents

GOOD ROADS ATTRACT GOOD PEOPLE, Cover.
LIFE HISTORY AND CONTROL OF RED SCALE, 500.
CITRUS.—Tests Made on Fertilizers; Duty on Lemons, 500, 501.
DECIDUOUS.—New Fruits of Value; Shade Crops, 502, 503.
ORNAMENTAL GARDEN.—Introductions From Australasia; Easter Lily; Foliage, Not Flowers, 504.
SMALL FRUITS AND VEGETABLES.—Chayote; Green Corn, 505.
LIVE STOCK AND DAIRY.—Garget; The Hog of Today; Outside View of Humboldt County; Galled Shoulders; Experience with Turkestan, 507, 508, 509.
EDITORIAL.—Value of Co-operation; Count the Cost; Next Week; Plant Eucalyptus; Agricultural Education; Gamblers in Food Stuffs; Florida Growers; Wheat Conditions; Geo. T. Angell; Removal of Quarantine, 510.
AGRICULTURAL NOTES OF THE PACIFIC COAST.—Northern, Central, Southern, the Coast, 511.
POULTRY.—Practical Experience with Leverets; Mineral Matter for Hens; Roup; Poultry Notes; Limberneck; Poultry Queries; Alkali Soils, 512, 513, 514, 515.
IRRIGATION.—Deeper Significance of Living; Ground Waters in the Indio Region, 516.
QUERIES.—Ground Squirrel Pest; American Grapes; White Scale; Not of Milk Strain; Turkeystan Alfalfa; Barren Strawberries; Grafting Grapevine; Canning Cherries; Beets for Cow; Grapes for Imperial Valley; Peach Leaf Curl; Feeding Milk to Calf; Abortion, 518, 519, 520.
LEGAL QUERIES.—Establishing Corner Stakes; Diverting Storm Water; Planting Near Line; Law of Inheritance, 520.
GENERAL AGRICULTURE.—Use of Disk Harrow; Banking Principles in Farming; Improving Alfalfa, 521, 522.
BEES.—Extraction of Beeswax, 523.
HOUSEHOLD.—Out of the West; In the Dark; Cream Chicken; Stewed Celery; Celery Stuffing; Celery Sauce; What can be Done With Salt; Home Hints; To Cure Nervous Headache; A Sewing Corner; Worry; Coal Oil Stains, 524, 525.
PRODUCE MARKET.—Los Angeles, Markets; San Francisco Markets; Citrus Markets, 526, 527.

VALUE OF CO-OPERATION.

Farmers of Eastern Oregon who are members of the Farmer's Union, now control the wheat output of more than forty million bushels. This association has filed complaint with the Interstate Commerce Commission alleging that freight charges to tidewater on the Pacific are exhorbitant. What may be accomplished through this complaint to the commission remains to be seen, but already a measure of success has been secured by these farmers in storing and shipping their grain direct, thus eliminating some middlemen's profits, which have been taken from them in the past.

It is to be hoped that the Union will continue to make good. We will not say that the only salvation of the farmer is in that organization, but we do believe that the greatest measure of success can only be secured through co-operative effort. When the farmer gets a complete enough realization of that fact, and will set aside his personal prejudices and join his neighbors in this great movement, then only can he overcome the advantage which the middleman has possessed over him in the past.

The next meeting of the Counties Committee of the California Promotion Committee will be held in Monterey, Saturday, May 8th. This will, to a certain extent, be a continuation of the topics discussed at the last Los Angelus meeting last fall. At that meeting publicity for California and for its products was discussed. Committees then appointed will be expected to report.

COUNT THE COST.

Too many farmers engage in the industry without proper counting of the cost of equipment and improvements of the land. Work is started with as much land as the farmer can command and the fact is soon made manifest that capital is not in hand to handle the crop to best advantage. Such farmers might well reduce the acreage, give more intensive cultivation to the land remaining and place all under the best of tillage. We have often heard prospective land buyers refer to dry land under which a vein of water was known to exist and the remark has been made "all that is necessary is to dig a good well and I will be absolutely independent of any water company." This is true and if a good vein of water is struck at not too great a depth the condition is ideal, but has the prospective land owner considered the cost of such an improvement? A good well with plenty of power costs several hundred, or possibly if a large quantity of water is wanted, several thousand dollars.

It is unwise to tempt failure by starting in on too great a quantity of land which can not be tilled in a successful manner.

NEXT WEEK.

We have in hand an article which will appear on first page of next week's Cultivator which will be of exceptional value. It is written by practical men from various sections of the state and will give their experience in their own words.

The Cultivator has had many commendations for its article on "Methods of Plowing Orchards," which appeared in the issue of March 18th and which was made up in a similar way, that is, personal experiences of practical men. This has encouraged us to further effort, along the line of irrigation.

We already have letters from San Diego county and other counties as far north as Butte. This article will be worth a year's subscription to the Cultivator, and even more, to many of our subscribers.

In the same issue will be tables for measuring water, with illustrations. These have been given before, but are to be repeatd by request of several subscribers.

PLANT EUCALYPTUS.

Plant eucalyptus but do it wisely. There is being too much wild-catting done this year, or at least it appears so to one looking on from the outside. The farmer who has waste land, or hillside land, or what is not readily tillable, should at all times see that it is planted to some rapidly growing valuable timber tree, or at least that which will make good fuel. Where conditions are right the blue gum has proven to be almost a perfect tree and should be planted, but companies which are organizing and offering great profits from planting more or less valuable land which is capable of producing more valuable crops where it is possible to supply with irrigation water, will not, we fear, be able to make good with the big dividends estimated. This movement is in the right direction, in the main, and we hope it will be educational and that every farm will soon have its small wood lot and that those who can well afford to experiment in a large way and with new varieties, will continue to do so.

AGRICULTURAL EDUCATION.

Oklahoma is taking the proper first step towards giving children of that state an agricultural education in the common schools. Many states have attempted it, but Oklahoma says to her prospective teachers "Show by your examination that you are qualified to teach things agricultural, then you may teach in our schools" or, at least, such will be the case after July first of the present year, when no one can get a certificate to teach in the common schools without passing a satisfactory agricultural examination.

There will probably be some pretty raw "agriculturists" for the first few years among Oklahoma teachers, but, ultimately, this step will lead to reasonally well qualified teachers who will be enabled to teach the "Young Idea."

FLORIDA GROWERS.

Three special cars with forty-five Florida orange growers arrived in Los Angeles Monday night, from which point they will inspect the orange groves and methods of marketing of citrus fruits by Californians. The party is made up of a fine looking bunch of men, a few accompanied by their wives. They were extended the courtesies of California by the Los Angeles Chamber of Commerce and the California Fruit Growers' Exchange. The Exchange is showing a very fraternal spirit and opening its books and giving every facility to the Florida people to get pointers on California methods of co-operative fruit marketing.

Trips have been taken to pre-cooling plants and to orange groves and packing houses and some of these points will be made the basis of an article in the Citrus department of next week's Cultivator.

We hope the fraternal spirit shown by the Californians will cement the friendship between these two great citrus producing sections.

Florida is more than welcome and we hope that her representatives will have an enjoyable and profitable visit to our state.

GAMBLERS IN FOOD STUFFS.

The corner which was attempted in the wheat market seems to have failed to have held good. The slump which has started wheat on the downward grade shows that the effort was apparently that of the gambler.

This country, as a whole, wishes to see the farmer get a living price for his produce and to that end we believe that even the consumer is willing to pay a reasonable price for bread, but this gambling in food stuffs has awakened the country to a fact, which has been to a certain extent realized for many years, that this gambling element should be suppressed and the forcing up or forcing down of wheat at the will of the bulls and bears is inimical to the best interests of the country and our law makers should take cognizance of that fact and correct the evil.

WHEAT CONDITIONS.

Outside of the gambling in wheat which has been conducted in Chicago during the last few weeks the legitimate price of wheat is shown to be such that plainly there is anticipation of shortage in the output of this year. But that this shortage is not sufficient to justify the price to which wheat has been forced is shown by the report of the Department of Agriculture. This report says: "The average condition of winter wheat on April 1 was 82.2 per cent. of a normal, against 91.3 on April 1, 1908, 89.9 on April 1, 1907, and 86.6 the average condition for the past ten years on April 1. The decline in condition from December 1, 1908 to April 1, 1909 was 3.1 points as compared with an average decline in the past ten years of 6.0 points."

GEORGE T. ANGELL.

One of the best known characters in this country was Geo. T. Angell, the editor of "Our Dumb Animals," who died recently in Boston. Mr. Angell has been regarded as one of the best friends of dumb animals which this country ever had. He has persistently and constantly fought for their protection and for their comfort. He was at the head of the Society for the Prevention of Cruelty to Animals and of 70,000 children in "Bands of Mercy." The work which he has started will doubtless live forever.

REMOVAL OF QUARANTINE.

The Secretary of Agriculture has issued an order, effective April 24, releasing entirely the quarantine for foot-and-mouth disease, as he is satisfied that the disease has been completely eradicated from the United States.

Shop Talk

CHANGE OF ADDRESS.—In notifying this office of change of mailing address, please bear in mind that the old postoffice address must be given, as well as the new. Our records are such that it is almost impossible to find a name on our lists unless this information is given.

Agricultural Notes of the Pacific Coast

Northern California

Yolo County beet acreage is immense.

Santa Rosa's rose carnival will be held Saturday, May 8th.

The thrips is causing much damage to pear orchards near Suisun.

A full crop of all varieties of fruit is promised to Eldorado county.

Sutter County almond crop will fall short but all other fruits are looking fine.

Alfalfa cutting began at Woodland, Yolo County, about the middle of the month.

Newcastle and Loomis will ship much larger quantities of cherries than ever before.

Lakeport, in Lake county, will soon have a new industry in the form of a mushroom plant.

One fruit concern of Sonoma County has placed an order for six car loads of box shook.

The supervisors of Mendocino County have appointed a sheep inspector for each supervisorial district.

Ferndale reports haying as progressing rapidly. Some injury was done however by drying winds.

Alameda County orchardists report that the Scutellista is doing exceptionally good work on the black scale this year.

Yuba and Sutter County wool growers recently met at Marysville and made arrangements for the annual spring sale.

The fruit outlook for Nevada county has never looked so promising as this year. Many new orchards are being planted.

The Ukiah Times announces that many vegetables are shipped that section from San Francisco and appeals for "home made" vegetables.

Newcastle fruit growers are appealing for a co-operative market as a remedy for poor prices that have been secured for fruit of that section.

The Sacramento Valley Development Association is pulling the different communities together to work up one large fund to advertise the advantages of the valley.

The Gridley canery picnic promises to be the biggest ever, this year. The attendance last year being between 8000 and 9000. The date of the coming picnic is June 4th.

The Sacramento Valley Development Association is planning to receive the National Irrigation Committee from the U. S. Senate which will make a visit to that valley later in the season.

Berkeley milkmen have asked for an injunction against the State University to prevent its agricultural department from marketing its surplus milk to the residents of that city. The milkmen claim that the University is doing this at less than cost and for which the state tax payer pays.

The promise is that this will be an exceptionally good year for sheep men of the state. Present offers of buyers of wool are only about 13 to 16 cents while in the Eastern states 25 to 26 cents is the price, while in Montana 21 and 22 cents. The reports is, however, that the season is so exceptionally favorable that nearly all lambs are saved.

Central California

Hanford has adopted a pure milk ordinance.

Total rain fall at Salinas aggregates 18.49 inches.

Visalia is discussing the question of a sewer farm.

Hanford is to be given another rural delivery route.

New alfalfa hay is being freely offered in the market.

Tulare ships each month about $70,000 worth of butter.

Merced county recently organized its fourth Farmer's Union.

Egyptian corn planting is quite extensive in Stanislaus county.

A county Farmers Union was organized at Turlock last Saturday.

Arabian alfalfa at the Tulare substation is growing remarkably well.

Farmers about Hughson, Stanislaus county, are making first cuttings of alfalfa.

The Modesto creamery is now handling over two tons of cream daily.

Beets in the Corcoran field now measure about an inch and a half in diameter.

Some trees shipped to Santa Clara valley affected with root knot were condemned.

Visalia observed April 13 as annual clean-up day and Hanford observed the 15th.

Merced county is considering a proposition for bonding the county for $500,000 for good roads.

Thrips are reported by Entomologist Morris to be decreasing in sections where they first appeared.

Tulare has a clean-up day at which time roadsides are to be freed from weeds and unsightly tin cans.

Orchardists near Madera are vigorously fighting a small colony of scale which has recently been discovered.

Tulare claims the largest eucalyptus nursery in the world and that it will propagate about 5,000,000 trees this year.

Some Pajaro valley apples are selling in New York at satisfactory prices. One sale recently netted $1.70 per box.

The last few days have been busy ones in all the packing houses preparing the great output of raisins for Raisin Day.

S. W. Marshall, one of the pioneer nursery men of the state, died recently at his home in Fresno. The business will be continued by his son.

This is the busy season of the year with the peach borer moth. Soil should be removed from near the crown of the tree and the bark whitewashed.

Prof. E. B. Babcock and County Entomologist Earl Morris of Santa Clara county are investigating various fungus diseases affecting roots of fruit trees.

The Farmers Union membership of this state now aggregate nearly 5000 and its most hopeful friends predict that before the end of a year this will have increased to 60,000.

The Madera county supervisors have passed an ordinance which makes it unlawful for anyone to have in their possession citrus trees raised in Fresno or Tulare counties.

Southern California

Coachella valley will produce two hundred cars of Bermuda onions this year.

Cotton seed now being planted in Imperial valley is costing the growers $14.00 per ton.

Some Imperial hay shipped to Los Angeles market too soon after cutting heated in the bale.

Cucamonga, San Bernardino county, apricot growers have already been offered $20.00 per green ton.

Several thousand acres on the Hemet Tract are being set to citrus and deciduous trees this spring.

The Anaheim Walnut Grower's Association paid to its members last year $10.68 per hundred for soft shells.

Large attendance was given to the Demonstration Train in Orange, Los Angeles and Ventura counties, last week.

The Santa Fe has added a gasoline motor, which it is thought is the forerunner of a large number of them to be used in the suburban traffic.

It is now thought that melon shipments from the Imperial Valley will not begin before the 2nd or 3rd of June. The output will probably not exceed 1200 cars.

Water is running over the Great Hemet dam for the third time in the last three years. This will insure sufficient water supply for the Hemet tract for several years.

Representatives of a large sugar company have been looking over the section around Perris, Riverside county, to determine as to the advisability of locating a sugar factory there.

The membership of the Imperial County Dairymen's Association is increasing. The dairy interests of the valley are now receiving more than $1,000 per day for the output of the milch cow.

Southern California has been much concerned by the report that potash, largely used as fertilizers in the orange groves, was to be heavily taxed in the Payne bill. Latter reports show it on the free list.

The large shipments of oranges during the last two or three weeks have put the total shipment ahead of any preceeding year at this date. A few weeks ago, the shipments were more than 1,000 cars behind the shipments of last year.

The Colorado river is receding from its first flood, but the big flood which will test the Laguna dam and the levees at the Imperial intake will come probably about the first of June. It is anticipated that the flood will be higher than usual this year.

A rancher at Artesia had a peculiar experience recently by being nearly drowned in skim milk. He was walking along by a large tank, in which milk is run after separating, and accidentally slipped in. Not being a swimmer, he was nearly dead when rescued.

At the recent annual meeting of the Fullerton-Placentia Walnut Association an excellent noon luncheon was served by the ladies and a full day given over to business. The association sold last year almost a million pounds of nuts. The net price to growers was about 10½ cents.

The Coast

Timothy hay is selling in Portland. Oregon, at $14 to $16.

The "Jim Hill" mustard is proving troublesome again this year.

One grower at Camas, Wash., is planting 90 acres of English walnut trees.

Tobacco raisers at Bingen, Wash., are raising exceptionally fine cigar tobacco.

The prospect is good for a bumper crop of wheat in the Palaouse, Washington, country.

Despatches from Asotin, Wash., state that the fruit crop for Clarkson Valley is most promising.

The annual horse show recently held at Colfax, Wash., was poorly attended owing to inclement weather.

A great increase in the acreage of apples and walnuts at Sheridan, Wyo., is the result of last seasons plantings.

Sheep men of the Yakima valley, Washington, are endeavoring to interest capital in a wool scouring plant.

Walla Walla, Wash., has preserved and pickled two tons of fruit and vegetables to be exhibited at the A-Y-P Exposition.

The electric lines in Washington are as up-to-date as the steam railways and are now conducting farmer's institute trains.

Poultry men at Belingham, Wash., are rebelling at high prices on wheat, and other feed and some are going out of the business.

An irrigation company having lands near Salem, Oregon, will subdivide and place on the market eight thousand acres of fine land.

Portland, Oregon, is making an appeal for greater number of cattle and hogs to keep the packing houses of that city wholly occupied.

A new irrigation district near Morrison, Wash., has found a strong vein of water at 75 feet depth which covers a vast range of the country.

Spokane is preparing for the great Irrigation Congress. It is expected there will be 40,000 visitors in the city at the time of the meeting.

Wool buyers at Rocksprings, Wyoming are endeavoring to make contracts at 21 cents. Most of the growers are holding for a higher price.

The largest wool sale made in Washington this year was made by a Umatilla county grower who disposed of 150,000 pounds at a price supposed to be 18 cents.

The 32nd annual session of the Oregon State Grange Patrons of Husbandry will be held at Linden, Oregon, Tuesday May 11. It will be a four days' session.

Hop shipments from Oregon during the month of March were 5,163 bales, or a little more than one-third the amount of the same month in the preceding year.

The attorney general of Oregon has passed recently on the dairy law and it has been pronounced constitutional and the commissioners will soon name inspectors.

The work of the Reclamation Bureau on the Yuma Irrigation dam has caused a rise of water on the Gila river in Arizona so that the levees have to be strengthened.

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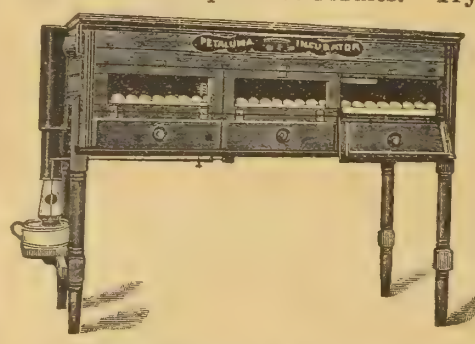
MIDLAND Poultry Food

Is based on ***quality*** and it is quality in Poultry Food that produces eggs. ***Cheap filler*** and ***cheap grain*** will ***not*** make eggs. ***Midland Poultry Food*** contains only the ***choicest*** cereals and animal food the market affords. You ***can't*** afford to try and be successful and not get results. ***Midland Poultry Food*** will produce results. Try it and see. $1.95 per sack



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Remember, we make a hot water machine. One of the ***best hot water machines*** on the market.

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When the chicks are hatched don't feed them anything for 24 hours, then feed them the best dry Chick Feed you can get. We say that is

West Coast Chick Feed

SAMUEL R. KELLAM, former president of the L. A. Co. Poultry Association, says: "West Coast Chick Feed is the best feed for young chicks I have ever used. I have given this feed a thorough test, and have always found that it produced fine, large, healthy chicks."

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Ask your neighbors, for there is more of "West Coast" sold in Southern California than all other kinds put together. If not sold by your dealer send us $3.50 and we will send a 100 lb. sack, freight prepaid within 300 miles.

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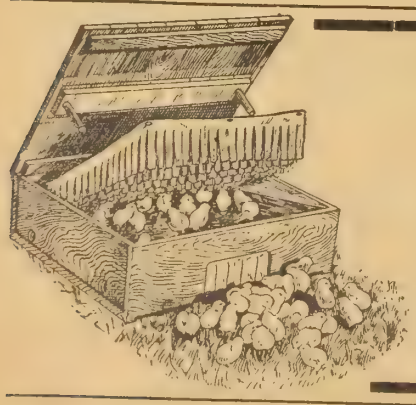

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NO LAMPS. NO OIL BILL. NO DANGER OF FIRE
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Profit in the Poultry Yard

By Mrs. Frank Metcalf

We solicit short articles of a practical nature from the fancier and utility breeder, giving their experience with poultry. All inquiries pertaining to feed, management, disease and its prevention will be answered through these columns.

PRACTICAL EXPERIENCE WITH LEVERETS.

FOLLOW that good old English recipe and "First catch your hare." The day of fancy hare-breeding has about gone by, but common pride prompts one to desire good stock.

We started in with two well-bred does which had been bred to males not allied to the does or to each other. Then later purchased a fine buck. In this way it was possible to make many matings without inbreeding which is, or is not, very bad indeed, according to personal opinion. So far as my belief goes inbreeding seems to tend toward lowered vitality. The does are known to be in mating condition when they pound heavily on the hutch floor with the hind feet; their kicks sounding almost like the blows of a hammer. Never leave a doe in the pen with the buck more than a few minutes. The period of gestation is thirty days and there is rarely any variation. About a week after breeding supply the doe with a nest box about 15 inches square and about a foot deep. This is best made with a removable top to be buttoned or hooked in place, and an opening in one side near the bottom, of sufficient size to allow the doe to go in and out freely. The box should be set with this opening toward the solid wall—and not too far away. The object being to keep the interior dark as possible.

Put some straw or litter in hatch and allow the doe to make her own nest. We have had does begin making a nest the very day they were bred; and one fine doe in particular never began her nest until a couple of hours before it was needed.

Provide the expectant mother with plenty of clean cool water and let her alone. A day or two after kindling open the top of the box and examine the young, removing any dead, or if any are deformed they had best be killed at once. The babies are not larger than ones thumb, gray-black, naked, blind with only rudimentary ears and about as easy to handle as small live fish. A three inch baseboard must be fitted around the bottom of the hutch as when the babies leave the nest they can easily pass through wire with one inch mesh. Feed the mother generously and don't disturb her. You may never see her nurse her young. We never owned but one doe which was ever seen to nurse her family, but if fairly treated they are almost always good mothers. Feed the little folks rolled oats or bread and milk or dry bread for main diet with a daily relish of green food, always keeping watch of the droppings and regulate the bowels by proper feeding; any loseness being promptly checked with dry food,—dry toasted bread scraps, etc., and constipation by increasing the green food. The does have been known to kindle again when the previous litter was only 33 days old, but a far better plan is to have not over three litters a year allowing the mother to care for her young until two months old. It is well to provide a shelf, unless the top of the nest box is available, in order that the mother may get out of reach of the youngsters as they annoy her exceedingly. Infant mortality is very light when proper care is exercised in feeding, watering and sanitation.

When the leverets are taken from the mother the sexes should be separated although the young does may be kept together until bred, and the young bucks until used for breeding purposes, after which each should have a separate pen.—Bee Josephine O'Mealey, Anderson.

MINERAL MATTER FOR HENS.

Chickens consume a great deal more mineral matter than is commonly supposed. Not only is there mineral matter in the general body composition, but large amounts in the bony framework and a considerable amount in the feathers. The growing chick, probably more than any other animal, needs an abundance of mineral matter to meet its growing demands.

It is a well known fact that chickens go about picking up every small bit of mineral substance that they can find. This is surely an indication that these things are of a benefit to them. Also, it has long been held that grit in the form of small pebbles and other hard substances are used exclusively for grinding food. Of late, after more careful study of digestion processes with poultry, authorities have come to the conclusion that grit does not aid materially in the grinding of food in the gizzard. It is very likely that the pebbles grinding together there are reduced to a powder and are utilized in the animal system as a mineral food, the slow reduction making digestion possible.

Different animal and vegetable foods contain different proportions of mineral matter, some containing a large and some a small amount. Of the grains, for instance, wheat contains more mineral matter than corn. Animal bony matter contains more mineral matter than animal flesh. Also, some common natural mineral substances contain a greater number of mineral elements that can be utilized for food than others. Some granites contain more inorganic elements than limestone. Oyster shells, the popular mineral chicken feed, contains practically nothing but lime, yet it is an excellent mineral poultry food.

No one food contains all the necessary mineral elements to supply the demands of the growing chick or the laying hen. A variety is necessary. Nearly everyone has noticed how a flock of chickens, especially in the spring and during the heavy laying season, will scratch and work in a pile of sand, gravel, or ashes of any kind. This ought to be a clear indication that they were finding something to satisfy their natural physical desires. Chickens will readily eat large amounts of coal ashes and cinders and it is a good thing to furnish them a supply at all times. A wagon load of small gravel should be in every poultry yard, and if the gravel

contains bits of broken river shells, so much the better.

Mineral in well balanced proportions, can be supplied to poultry in the form of cut, ground or pounded bone. Green bone supplies both animal and mineral matter. Old bones contain some animal matter, while burned bone contains only mineral matter.

Of all vegetable foods, clover, especially the leaves contain the most mineral matter. Clover is also rich in protein egg and flesh-forming substances. Chickens will eat clover either in a green or a dry state. A patch of clover near the poultry yard will supply them with food during the summer and clover heads and leaves raked from the barn floor will readily be consumed by them in winter.

Those who expect to make their young chickens grow vigorously and their hens lay well must never forget that they require an abundance of mineral foods and supply them with all they need. It is cheaper than any other foods, but just as essential.—Journal of Agriculture.

TREATMENT FOR ROUP.

A mattery substance forms in the corner of the eye, and perhaps the eyes will close sometimes. There is an offensive odor from the nostrils. The chicks become very light in weight, act stupid and eat little. They do not lay at all. The disease runs through young and old hens alike.

These symptoms point to roup, or diphtheria, as we know it among persons. It is a highly contagious disease and one to be dreaded. Exposure to cold, drafts, damp houses and unclean quarters are at the bottom of different cases. If the birds get run down in vitality from any reason, the disease is induced. Foul water may bring it on. Where the trouble is severe the bird rarely recovers.

On the first sign of this disease the bird should be removed from the house and the quarters disinfected by burning sulphur and carbolic acid for two hours when the fowls are out. Also drop turpentine and carbolic acid over lime until slaked, then scatter this about the houses. A good remedy is as follows: Tincture of aconite, ten drops; tincture of spongia, ten drops; add alcohol to make one ounce. Put one teaspoonful of this in a quart of drinking water daily. Kerosene is good. Plunge the head of the fowl in the liquid, withdraw quickly, and wipe dry with a soft cloth. The eyes may be treated by washing with warm water twice a day and anointing with vaseline. If the bird does not quickly respond to treatment, put it out of the way and bury it. Never let a hen with roup drink where the others do.

POULTRY NOTES.

Take care that the pullets do not get fat, for they will not lay well if they do.

Give the hens something to scratch in, for the scratching hen is the one that lays.

While a variety of food is essential to laying hens, yet plenty of non-fattening foods is more essential.

Feed green cut bone and meat scraps mixed in the hens' mash, then the bosses will not get more than their share.

Poor beans boiled soft, with a piece of fat meat put in for seasoning, makes good food for hens. They may be fed clear, or mixed with their mash.

CAUSE OF LIMBERNECK.

Limberneck with chickens is caused by the birds eating decaying flesh or filth containing maggots. The maggots lodge in the throat of the bird, causing paralysis of the muscles of the neck and consequently inability to swallow food. When affected, the chicken remains inactive in one place for days at a time without control of its neck or head. Since there is no longer power to take food or drink, it gradually dies of starvation and, perhaps, slow poisoning. Very few that become afflicted ever recover.

Not much can be done with a chicken suffering with limberneck. Soft bread soaked with turpentine or kerosene is said to be effective in removing the cause, if the case is taken in time.

Good laying breeds are too numerous for us to suggest one; the buyer should use his own discretion, only being sure the particular breed will thrive under the conditions of his selection.

POULTRY QUERIES.

Balanced Rations.

Would be pleased to get a formula through the columns of your poultry page for making a balanced ration for poultry in one thousand pound lots.

I am just starting in the business and I have my own power and grinder for grain and bone, and am in a position where I can get all grain, etc., at merchants discount.—L. M. S.

Here is the foundation for a great success. In the first place, the green cut bone should be made a goodly part of the daily ration, if the bones can be obtained perfectly free from taint, and cut and fed at once. This was our way when we had a bone cutter, and we could then see that every particle was beyond reproach. Those parts which were slightly old, but not absolutely bad were cooked in a large kettle outside, and stiffened with bran, and made a food the hens were especially fond of, always seasoned with salt, and sometimes with a little pepper.

As a rule, cooked food is not best for fowls, but this soup and bran food occasionally gives them a much relished change.

The balanced ration must contain one part of protein to four parts of carbo hydrates, and there are many ways of mixing foods to obtain these results. The "balanced ration" of commerce consists of two parts bran to one part each of cornmeal, alfalfa, and beef scraps, measured, not weighed, so as the bran is about twice as bulky as the other ingredients one would be safe enough in using 200 pounds of each to make one thousands pounds, and this food may be kept before the hens at all times.

To grind one's own feed, as our correspondent wishes to do, one must study the composition of the various available grains, mix a ration and try it, and add other combinations as indicated.

Peas and beans contain the necessary protein and may be substituted for the beef scrap safely, especially if green bone is fed, and as wheat at present prices is out of the question, almost, one may substitute oats and barley. Therefore for 1000 pounds try this:

Beans or peas, 200 pounds; oats, 300 pounds; corn, 200 pounds; and barley, 300 pounds. After grinding, mix in salt, 5 pounds and black pepper 5 pounds. Feed this mash dry or moist, but for regular diet the dry mash will be found best.

Our correspondent does not say

"Success" Fireless Brooders

50 Chick $2.50
150 Chick $5.00

We Pay Freight

Will raise every chick, send today for free circular; tells about this wonderful brooder.

No Lamp, No Smoke, No Odor, No Danger of Fire

We pay freight. I sell on trial, if not satisfied I will refund you every cent. Order now. I can ship the day I get your order.

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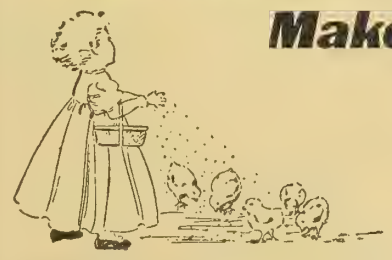
112 E. 8th, Los Angeles

Coulson's POULTRY FOODS

Special Dry Chick Food

Makes Them Grow



Throw it out in the Litter and Make them Work

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THE UTMOST CARE is observed in the selection of each of the dozen or more articles composing this unequaled feed; tender seeds, cracked grains blown free from dust, steel-cut oats, tiny pieces of dried meat and bone, willow and pure bone charcoal, are combined with other very necessary ingredients; every article being selected with special reference to its quality, strength and desirability for the needs of the young chick.

FOR YOU TO BUY the many different articles composing Coulson's Special Dry Chick Food is quite impracticable; you could not be certain as to their quality for one thing, and the high cost of certain of them when purchased in small lots might lead to their being left out to the detriment of the chick.

TO MAINTAIN the present high reputation of COULSON'S SPECIAL DRY CHICK FOOD, nothing is left undone to make it absolutely the best feed that can be made for the little chicks.

COULSON'S SPECIAL DRY CHICK FOOD can be fed exclusively to your little chicks for the first six weeks, at a cost of about four cents (4c) each; and what is of still greater importance, it will do all that can be done in the way of feed, to bring them through that critical period of their lives in full health and vigor.

TO RAISE EVERY CHICK you hatch; to have fine, large, healthy chicks; to have chicks that will stand up and crow when eight weeks old; to raise chicks that you will be proud of, FEED COULSON'S SPECIAL DRY CHICK FOOD, THE LIFE-SAVER. Write us for free samples and prices.

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EGGS FOR HATCHING—WHITE LEGHORNS—MITCHELL STRAIN

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Special Hatch of Pure Strain Heavy Laying White Leghorns Positively From the Best Stock in Southern California Today.

These chicks will be ready to ship on May 5th. Order today fifty or more, price 10c each or $95 per thousand. Order at once from this ad. Don't delay if you want to depend on getting them. Sure, will ship May 5th.

Can deliver safe anywhere within 48 hours. We are also hatching SEVENTEEN kinds of chicks, turkeys, duckling, etc. May 27th will have 200 Mammoth Bronze baby turkeys at 35c each. Also special hatch of White Minorcas. Write today for free chick and hatching egg book.

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Largest Baby Chick Dealers in the World

DAY-OLD CHICKS 15c EACH

The demand for chicks at above price is wonderful.

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Henry Albers Co., 534 *S. Main Street, Los Angeles*

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(From pair that took first at Petaluma.)

Improve the blood of your Turkeys by introducing some of my GRAND STOCK. Price $10 each.

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WHITE LEGHORNS *OF QUALITY*

Bred from best American and Imported stock—for beauty and great egg production. Won more ribbons at Oakland's great show than any four competitors. ***Stock, Eggs*** and ***Baby Chicks*** for sale. Also eggs and chicks from ***High Class Buff Orpingtons***. (Cook strain.) Write for descriptive circular.

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White Wyandottes

Black Orpingtons and White Rocks

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Calistoga, Cal.

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S. C. White Leghorns and Barred Plymouth Rocks

Eggs for hatching. We fill orders promptly from our selected matings of great egg-producing birds, at $5 per 100, $45 per 1000. At both Los Angeles Shows, 1909, our Leghorns won all firsts, silver cup and special prizes, and more ribbons than all competitors combined. Eggs from prize winning pens $2 per 13.

San Gabriel car to Masonic Home; two blocks south to ranch.

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White Wyandottes

The 200 egg kind—the all white variety—the best all around fowl for farm or town purpose. Eggs from the best strains reasonable.

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If you have tried most everything else, come to me. Where others fail is where I have my greatest success. Send attached coupon today and I will send you free my book on Rupture and its cure, showing my new discovery and giving you prices and names of many people who have tried it and were cured. It is instant relief when all others fail. Remember I use no salves, no harness, no lies.

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Please send me by mail in plain wrapper full information of your new discovery for the cure of rupture.

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what end of the chicken business he wishes to tackle, so we presume it is grown stock and an egg ration and that is desired so this is what this food is intended for.

For fattening fowls this ration mixed with milk, fed three times a day will be found excellent. The last week of the fattening process (which should not take over two weeks) may contain a larger per cent of cornmeal, say one-half as much cornmeal as mixture. This, added to the cornmeal already in the mash, gives enough.

—Mrs. F. M.

ALKALI SOILS.

There are generally two kinds of alkali—white alkali and black alkali. White alkali is sometimes composed of sodium sulphate, ordinarily known as Glauber's salts, and sometimes of magnesium sulphate, ordinarily known as epsom salts. In other places both sodium sulphate and magnesium sulphate are found together and occasionally they are mixed with common salt.

Black alkali is composed of sodium carbonate, commonly known as salsoda. It derives its name, black alkali, from the fact that it is a solvent of humus, decayed organic matter in the soil, as a result of which it forms a very black stocky substance.

Land is not generally affected with alkali, but alkaline salts are found only in spots. Under such conditions it is possible to remove the alkali by a thorough system of tile drainage. These alkaline salts are all soluble in water, hence if the water accumulating in low spots can be removed from the soil through drains rather than through evaporation, the alkali will finally all be carried away. When natural drainage is not sufficient to carry away the surface water from the low places, and it must be removed by evaporation, it is evident that there will be an accumulation rather than a decrease of alkali in such spots.

It is estimated that one-tenth of one per cent of black alkali in the first foot of a loam soil renders it unproductive, but that it takes from four-tenths to five-tenths per cent of white alkali to seriously interfere with crop production. Of all cereals rye is least affected by alkali; following this crop the susceptibility to alkali of wheat, barley, oats is in the order given.

Alfalfa is not very much affected with either black or white alkali. Especially is this true if a thorough seed bed is provided and conditions for germination are favorable. After the land is once covered with alfalfa there is no other crop in this section that can be grown to better advantage on slightly alkali soils. This is partly due to the fact that it covers the ground throughout the entire growing season, thus preventing evaporation of moisture. It should be understood that as moisture is drawn up from below alkali is brought up with it, and as the water evaporates the alkali is left on the surface.

Is there any way to destroy this alkali in the soil? This depends upon its nature. If it is black alkali—sodium carbonate—and does not occur in the land in too large quantities, it may be destroyed by the application of gypsum. Gypsum is calcium sulphate and when this chemical is added to sodium carbonate or black alkali, calcium carbonate, ordinary limestone, and sodium sulphate, white alkali, are formed.

If, therefore, the black alkali does not exist in too large quantities, the white alkali, formed by the addition of gypsum, may render the soil harmless to growing crops. Alkali soils are also benefited by a liberal dressing of barnyard manure or by the plowing under of green crops. Sweet clover, vetches, etc., have been quite largely utilized in some localities for plowing under as a green crop. They will grow on very strongly alkaline soils better than almost any forage crop and produce a large amount of organic matter which, when plowed under, ferments, producing a considerable amount of acid, which in turn neutralizes the alkali.

It is estimated that it costs the farmer more to haul a bushel of grain than it does a railroad to haul a ton of it.

POULTRY NOTES.

A hen, without exercise, cannot be profitable.

Lice and mites must be fought with eternal vigilance.

It is difficult to maintain Bantams at the smallest size.

Filth is the root of nearly all evil in the poultry business.

Breeding fancy pigeons would be interesting to the boys.

A hen that is laying requires more food than one that is not.

Don't allow the coops, etc., to become damp and foul-smelling.

Success depends more on the care given to fowls than the breed.

Pioneer ROOFING

Of all ready Roofings, Pioneer "Rubber Sanded"—and Pioneer "Rubber Flaxine"—are best.

No other roofings compare with them in wearing qualities.

Before you decide on what roofing to use, it will pay you to investigate "Rubber Sanded" and "Rubber Flaxine."

Samples and Roofing Booklet "F" mailed free upon request.

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Scenic Hotel of the World

Overlooks San Francisco Bay and City

Five Minutes Ride from Ferries

600 rooms. Every room has bath

Rates—single room and bath—$2.50, $3.00, $3.50, $4.00, $4.50, $5.00, $7.00, $10.00.
Suites—$10.00, $12.50, $15.00, $20.00 and up.

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Palace Hotel Company

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"Success" Fireless Brooders

150 Chick Size $5
50 Chick Size $3

We Pay Freight Anywhere

Send today for circulars and descriptions. We are selling hundreds of these brooders everywhere; buy one and you will use no other. Will raise better and stronger chicks and make them feather out faster than any other brooder. No oil, no smoke and no fire. Write today, free 32 page book.

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A Few Fine, Pure White Wyandotte Cockerels

for sale cheap, from great laying strain
Eggs $1.50 per 14.

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Eggs $2.00 and $5.00 per setting.

Cuckoo Cochin Bantams

Great layers of large eggs. Settings and trios for sale.

Hen Pigeons

$3.00 per pair. Runt-Homer Crosses, the big fast Squab breeders. My Show Record for 5 years, secured me 1st premiums at all Coast Shows. This proves that I have quality unsurpassed.

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East Side Poultry Yards
Have pure bloods. Eggs for hatching. Hatching chicks a specialty.
S. C. White Leghorns Chicks 10c. **Barred Rocks** Chicks 12c.
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COULSON'S POULTRY FOODS
MADE IN PETALUMA
GUARANTEED
SOLD EVERYWHERE

When writing advertisers, mention Cultivator.

If you have a dog that sucks eggs, get rid of the dog and not the poultry.

When the hens get sick and you don't know the trouble, look for lice.

The majority of failures are made through carelessness or thoughtlessness.

The nests should be renewed often and the roosts washed with some insecticide.

If the poultry business is carried on to any large extent the incubator is a necessity.

Lime scattered around in damp, filthy places will disinfect them and absorb odors.

Clean out the henhouse at least once a week. The droppings are good for fertilizer.

A careless person cannot get best results from poultry; they require regular attention.

To purchase eggs is the least expensive way to get a start of fine poultry, but it takes longer.

A WOMAN'S IDEA OF SUMMER COMFORT.

To every woman, especially the woman who keeps house, the topic of summer comfort in the home is one of never-failing interest.

This is particularly true where comfort in the kitchen is concerned, as it is in this one room that the most trying part of the work is done, such as cooking, baking, ironing, and heating water for wash-day purposes. Even in cool weather such work is not altogether welcome, but it becomes drudgery on days when the mercury is trying to jump through the top of the thermometer, aided by a hot stove that diffuses its almost unbearable heat through the kitchen.

But such days are past. With the New Perfection Wick Blue Flame Oil Cook Stove, kitchen drudgery becomes kitchen comfort, for this wonderful stove is so constructed that it not only produces quick results, but does it all without perceptibly raising the kitchen temperature.

All this means real comfort to the woman who works in the kitchen, especially when considered with the added advantages in the saving of time; in the doing away with all carrying of coal, wood and ashes; in having a stove that can be turned on or off, high or low, as required; and in not having to keep it lighted when not in use.

Then there is the saving of fuel to be considered; and it is here also that the New Perfection excels. Although equipped with three burners it has but one oil reservoir, thus reducing three separate filling operations to one.

Besides all this, the "New Perfection" is the only oil stove built with a cabinet top. Its commodious top shelf is particularly useful for warming plates and keeping food hot after it is cooked. In addition there are two drop shelves on which may be set the teapot or coffee pot and small cooking utensils. Also has two racks for holding towels.

Altogether the "New Perfection" is a stove of wonderful utility. Its extremely handsome appearance sets off any kitchen to full advantage. It is superior to the hot coal range no matter what the point of comparison may be—or whether regarded as a summer stove only or as a stove for year 'round use.

Another household article of unusual convenience is the Rayo Lamp, a scientifically constructed lamp that will adorn any room—whether library, parlor, dining-room or bedroom. The Rayo Lamp gives a mellow steady light that does not tire the eyes. Its center draft burner of the latest design and its fine porcelain shade make it a lamp of combined usefulness and beauty.

The New Perfection Wick Blue Flame Oil Cook Stove and the Rayo Lamp constitute two household articles that will meet any woman's idea of home comfort. In the thousands of homes in which they are already used they are making things cheerful because of their absolute safety, great simplicity, and wonderful convenience.

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120 Egg Size $10.90
165 Egg Size $12.75
240 Egg Size $15.90

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CHAMBERLAIN'S PERFECT CHICK FEED

Write for Prices, Booklet, or name of nearest Agent.
W. F. CHAMBERLAIN FEED CO.
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If You Are Not Satisfied Try Excelsior

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A balanced ration for the baby chicks. We have been manufacturing Excelsior Chick Food for years, and it is made to meet the conditions of California. Those who feed Excelsior have no trouble raising strong, healthy chicks.

We also make ***Excelsior Egg Food*** and Excelsior Scratch Food; nothing better. For particulars write

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Kill Insects

ON PLANTS **ON POULTRY**

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Devils **Dust**

Devils Dust is guaranteed to Kill all kinds of vermin on poultry and insects on plant life.
1 lb trial package 40c postpaid.

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Price Now
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Complete with Gearing ready to Attach to Your Pump

Will pump all the time, wind or no wind, and deliver as much water as an 8 ft. Aermotor in a good wind.

From 225 to 1600 gallons per hour, depending on height water is to be raised.

Air cooled, uses Gasoline or Distillate.

A reliable, durable engine at a very low price. Can You Afford to be without one.

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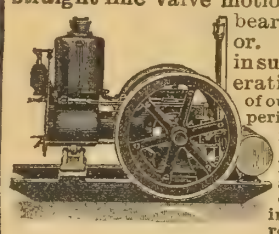
Why? Because of the outside igniter, modern open cooling system, straight-line valve motion and ball-bearing governor. Thousands in successful operation because of our years of experience in building the best. Send for our Free Catalog and our Catechism telling fifty-seven reasons why



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Freighting or Hauling Outfit Practically New
110 Horse-power Traction Engine
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3 Freighting Trucks
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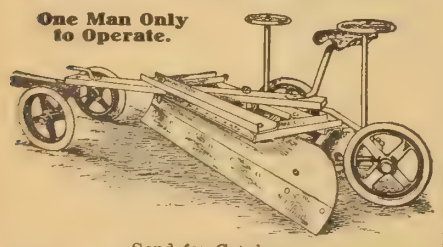

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All our pipe and casing has newly cut threads with new couplings attached and dipped in asphaltum. Guaranteed good as new. Prompt delivery on carloads or less. Small orders receive same attention as large ones. All sizes of pipe, also fittings and valves.
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Records and Supplies, $10.00 orders delivered at your nearest railroad station upon receipt of full retail price. Write for catalog.
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Irrigation and Forestry

THE DEEPER SIGNIFICANCE OF LIVING.

IT WAS Zoroaster, some 4,000 years ago, who said: "Reflection is the path to life, thoughtlessness, to death," and it is as true now as it was then, as true of nations as of men. Thoughtlessness is heedlessness and heedlessness is blundering and blundering brings disaster and disaster terminates in death with half a life lived and little joy had.

France is the banking nation of the world, and it has come to be so through the saving habits of the French people. The Frenchman puts by something every day, week, month, year of his life, saves some little out of his earnings; a wise monetary system makes these littles available for enterprise, and so France can lend the rest of the world something like a billion dollars a year. The French people have found thoughtfulness the path to life, for the French live well. They are the best cooks in the world. They set the fashion for dress. They cultivate art and the drama. Their language is the language of diplomacy and polite society the world over, their architecture is repeated in many lands and their love for France is not excelled by that of "the hill men for their hills." The French have found reflection the path to a very enjoyable life.

The greatest benefit conferred by President Roosevelt upon the country he has so ably served for seven years has been his calling attention to the need of conserving our national resources. We of America have thrown away each year more than the French nation has saved. We have not reflected upon the ultimate consequences of our industrial policies. We have been heedless and blundering and have suffered disaster of our own producing and, unless we mend our ways, those who come after us will perish as miserably as the miserable perish in India because India also did not reflect, but denuded its hills, submerged its valleys and starved its people. That way lies national death. If one doubts this let him ask of the buried Pharaohs, of Ninevah and Babylon, of the valleys of the Nile and Euphrates, of the bones of starved millions that whitened the Mesopotamian plain.

But conservation of resources is not merely a national problem. It is an individual problem as well. A spendthrift people will make a spendthrift nation and a nation cannot be made conservative of its resources unless the people who go to make up that nation are conservative of their resources. The policy of conservation, to be effective for good, must begin at the cradle and end only at the grave. This and meagre lives mean living full and well rounded lives with an anchor always to windward to hold fast to in the event of a storm. A great proportion of the population of England is within ninety days of being dependent upon charity. It is not so with France and yet the Britisher is conservative compared with the American.

The greatness of America depends upon the conservation of the resources of this continent, but the greatness of Americans depends upon the conservation of the energies and substance of the individual man, woman and child. Except the idea of conservation takes such hold upon the imagination and enthusiasms of individual Americans as the idea of saving takes hold of the mind of the Frenchman, or cleanliness of the minds of the people of Holland, the fate of India, of China, Egypt and Assyria awaits the America of not three centuries hence. The press of population against the power of subsistence will pinch hard in this country within the lives of babies born in 1909. Is it no concern of ours what befalls 1909 babies? Is it not the supreme concern? They are our babies or our children's, in which case we love them the more. To the manager of a corporation, bent on paying big dividends, this is sentimentalism. So be it. No truth has value until transformed into sentiment.—California Weekly.

Barley Field at Heber. Courtesy Calexico Chronicle.

GROUND WATERS IN THE INDIO REGION.

The Colorado Desert, in Southern California, is one of the most interesting and one of the most nearly rainless parts of the United States. It lies in a wide valley, the northwest extension of the great depression at whose south end is the Gulf of California. Before the overflow of Colorado River into the Salton Sea, which began about five years ago, this basin was, with the exception of Death Valley, the lowest dry land in the United States. It is also the hottest place in the country, according to the official records.

Features of the Desert.

Parts of the desert are wastes of shifting sand, kept in almost constant motion by strong winds. Other parts, on the borders of the Salton Sea, contain strongly alkaline areas, and in some places now covered by that sea large quantities of salt have been mined. South of the Salton Sea, in the Imperial Valley, the soil consists of fine silt, deposited in past centuries from the overflowing waters of Colorado River. This part of the area is the scene of the spectacular and almost uncontrollable overflow which was the occasion of a special message from the President to Congress and which was closed after repeated failures only in 1907, by the Southern Pacific Company.

Irrigation in the Coachella Valley.

Toward the north end of the valley in which this desert lies, for the most part below sea level, is the Indio region, or the Coachella Valley, where underground waters have been utilized for irrigating several thousand acres of fertile land. Melons, barley, and alfalfa are extensively grown on large areas, and smaller tracts have been planted in oranges, grapes, sweet potatoes, and sugar beets. Date palms have been planted also, and on the agricultural experiment farm at Mecca rare varieties of luscious dates, which heretofore have been produced only in the Arabian deserts and in the oases of northern Africa, are grown successfully.

A report on the Indio region, including a sketch of the Colorado Desert, prepared by W. C. Mendenhall, has just been published by the United States Geological Survey as Water-Supply Paper 225, which may be had free on application.

The report includes a description of the geography and geology of the Colorado Desert and an account of the undeground waters of the Indio region, and is illustrated by maps, sections and reproductions of photographs of interesting features of the country.

Portland, Oregon, quotes butter at this writing at 29 cents.

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I am so confident that the Olds Engine is the most economical and most durable engine you can buy that I will make this proposition to every buyer of an Olds Engine.

I agree to replace, free of charge, any part of an Olds Engine that breaks or becomes worn, from any cause whatsoever, within one year from date of shipment, provided the replacement is one you think should be borne by the manufacturer. You are to be the only judge. There is to be no argument, no delay in returning old parts and getting new ones; you decide and I abide by your decision.

J. B. SEAGER, Gen'l Mgr.

Do you think this proposition could be made on any engine but a practically perfect one? You can easily see that to stand this supreme test of durability and perfect workmanship it must be built right, of the very best material, of the simplest construction. This is the kind of an engine you want. You take no chances in buying an Olds. All of my representatives can furnish these repairs without any delay. They do not have to consult me. Write to my nearest agent. He can fix you out with the best engine you can buy, no matter what others cost.

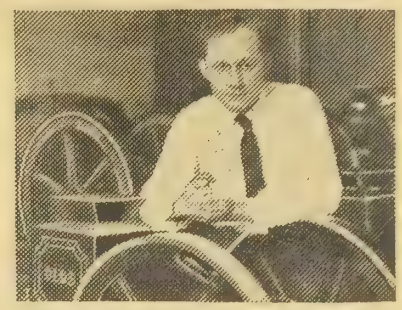
OLDS ENGINES

Give you the power you need at the price you can afford to pay for it.

They are the cheapest engines you can buy—simple in construction, most economical to run, do not get out of order, easy to start winter or summer—a ten-year-old boy can run the Olds Engine just as well as a man.

Thousands of farmers have found out the superiority of the Olds over all other engines. The United States Government must have found it out also because they buy Olds Engines for their military institutions, forestry and irrigation departments. Uncle Sam thoroughly investigates everything he buys. The Olds Engines stood the government test just as they will stand every other test.

For thirty years we have made nothing but Olds Engines. We know the Engine business just as you know your sitting room. Our business has steadily increased during that time. What made it? Why, because the Olds Engine did just what we claimed for it—every user was satisfied and knew he had got more than his money's worth, and he told some one else about it



F. B. Close, Mgr. Los Angeles Branch

YOU cannot afford to do without an Olds Engine. The first cost is saved so quickly in time, labor and money that no shrewd farmer should try to get along without one. The daily cost of an Olds Engine is so small it is hardly worth while counting, compared with the work it does.

There are not two farmers out of a thousand who could not use an Olds Engine with profit to themselves on their farms. You know what can be done with an engine on a farm better than I. You know an engine is needed on every good farm, but probably the reason you have not one now is because you have felt you could not afford it, or had some idea an engine was a difficult thing to run, and an expensive thing to keep in order, or perhaps you have had an engine that did not give you satisfaction. Not so with an Olds. You can afford it. Thousands and thousands of successful farmers have felt just as you do, but each man owns an Olds Engine today, and now he wonders how he ever got along without it.

Do you think the big successful men of this country would be where they are today if they had not kept up with the times? They bought the things they needed to increase their earning power. A successful man can always find a way to pay for a necessity in his business.

I guarantee every Olds Engine that leaves the factory to be in perfect running order. I do not spend much time in the office. I am out in the shop with my coat off watching every detail.

By keeping right out among the workmen, seeing that all the little things are actually done, I know the engine you get is all right, and that the high Olds standard is maintained. I also know the engine is "Best by every test," because I look after the testing and inspecting myself. They are the best you can buy, whether you pay less or more than the Olds price.

Write me about your own particular case. Let me advise with you. What I can tell you will fit your case exactly. Then you can decide what engine to buy.

J. B. SEAGER, Gen. Mgr.

Some of the Features of the Olds Engine

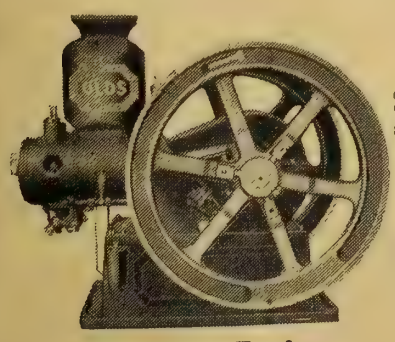
Olds Patent Seager Mixer

The only one that makes a perfect mixture of gas and air, giving the greatest power. No pump to leak or get out of order—no moving parts.

Removable Valve Mechanism. Removable Water Jacket. Jump Spark Ignition

Piston and cylinder ground to a perfect fit, giving better compression and more power.

Our catalogue explains these points in detail



4-A Hopper Engine

Simplicity, three separate inspections, durability, economy and certainty of operation.

Olds Engines are of the highest efficiency at the very lowest price because we can produce them without wasting a penny's worth of labor. There is a machine for every operation, and each piece, down to the smallest bolt or nut, is made of the very best tested material at a cost that could not be lower without cutting quality. Don't be misled by statements about "cheapness" in engins. Nobody can afford to buy a poor engine at any price, but there is a point where the highest quality can be had at the lowest cost, and the Olds Engine, because of the factory in which it is made, and the workmen who make it, stands without a superior in this respect. They are not slighted in places you cannot see, or where only an expert can discover it, but thoroughly well built through and through, in a factory that is known the world over as one of the most modernly equipped engine factories that has been built.

That is why we give you a durable, simple, strong, high-grade, perfect-working, long-lived engine at a low price.

Irrigating

You cannot afford to have your engine fail you when you require water for your crops. You buy both economy and insurance with an Olds engine. Made in all sizes from 3 H. P. to 100 H. P. Visit the nearest Olds Engine Pumping Plant. Ask the owner how he likes his Olds. There are Olds Engines in your neighborhood.

Write us for location.

Do Not Thing of Buying an Engine Without Investigating an Olds

It is to your decided advantange to send for our catalogue

Do it now before you forget it. A postal card will do; but better still write me a letter, telling me what you want the engine to do, and you will get a personal letter from me that will give you the facts you want.

Write me or my nearest representative. See addresses below

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It contains many fine pictures of the very latest models of Olds Engines with a detailed description that makes the engine question as plain to you as an open book. It contains letters from farmers who have used the Olds Engines, and they give their practical everyday experience with it.

Olds Engines are made in all sizes to suit every kind of work on the farm. We have exactly the kind of engine you want. Tell me what you want to do with it, and I will tell you just exactly the kind of engine you want to buy to do the work. It will be an expert opinion that costs you nothing.

Our hopper jacket engine on skids or wheels, 3 to 12 H. P., is ready to run when you get it. Fill it with gasoline, throw on the switch, turn the wheel, that's all. No piping to connect, nothing to set up, always ready, can be moved anywhere.

We also make regular engines 8 to 50 H. P. for heavier work.

Every Olds Engine is fitted with the Seager mixer which is recognized as being the most effective mixer that has ever been invented. No pump to leak. No moving parts to get out of order. They also have a removable water jacket so if through carelessness the water should freeze, but very little damage is done.

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FOR RANCH USE

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Corduroy and Khaki suits to measure for men and women.

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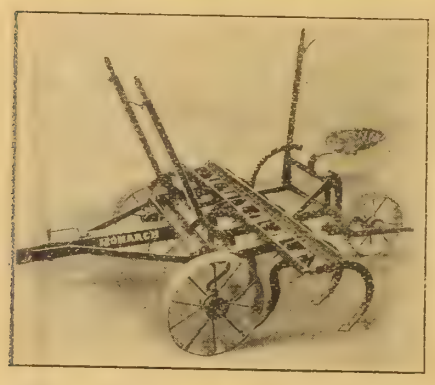


Is designed for heavy work. Has great clearance (17 in.) between front and rear standards, which permits the working of trashy or lumpy ground, and lightens draught. While designed more especially for field use, it is now becoming a favorite among orchardists where deep cultivation is desired. By the arrangement of levers it can be carried level or deeper on one side if desired. Write

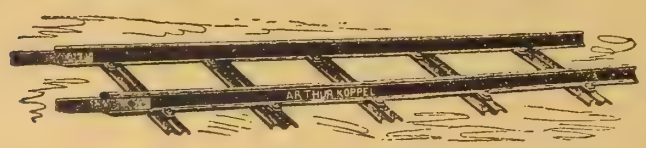
Killefer-Griffith Mfg. Co
1336 Palmetto Street
LOS ANGELES, - CAL.

A Railway on the Ranch

Saves Much of the Hard Labor

The equipping of the ranch with a ***Portable Railway*** is a very ***Profitable Investment*** and ***not*** very expensive.

Our booklet S. F. 60 gives several suggestions for applying it to the dairy and Ranch.



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For the Pacific Coast

We are the exclusive agents for the **A. I. Root Co., Medina, Ohio.** Our hives are manufactured from selected California Sugar Pine. Branch houses at Los Angeles and Elk Grove, Cal. Write for Catalog. We also manufacture orange, fruit and packing shook, drying trays, etc. Beeswax wanted.

Madary's Planing Mill,
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Mercer's Weed Process Foundation

If you would be successful with your bees use Mercer's Weed Process Foundation. Absolutely the best on the market. Send me your beeswax to make up.

H. J. Mercer, 948 East Second St., Los Angeles, Cal.
Dealer in All Kinds of Beekeepers' Supplies

Second Hand Irrigating Plants

Pipe, Pumps, Steam and Gasoline Engines. We have the largest A. I. stock of second hand machinery on this coast, and at the right prices. Tell us what you want and we will give you our best figures. Mention this paper.

Western Machinery Company
230 Main Street, San Francisco, Cal.

The Monterey county Board of Supervisors will purchase and distribute no more squirrel poison until June 30. It is claimed that after that date the poison is more effective than at this season of the year.

The nut growing industry along the Columbia River in Klickitat county, Wash., is becoming a most prominent feature. The almond tree is most prolific and it is claimed six year old trees average 30 pounds.

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Ground Squirrel Pest.

The squirrel is a pest in these parts, destroying a vast amount of grain and when that is harvested, taking fruit off the trees and even stripping deciduous trees of all foliage. Obviously the time to destroy these pests is after the grain and hay are harvested, but how best that is the question. Can you invite through the "Cultivator" replies to this query and publish the same. I believe strychnine the best and surest poison, but how to apply it; that is the rub. The poisoned grain of the stores is mostly inert. They thrive on it.—J. R. B.

With the law passed by the recent legislature compelling every one to cease from harboring this pest, it should now be easy to get all to combine in a campaign of extermination. Will our subscribers send in their methods of killing varmints. Let us have a bunch of suggestions from all over the state.

American Grapes.

Is the Isabella the only American grape grown in California and is it customary to head it low as with European variety?—J. W. D., Aptos, Santa Cruz County.

Nearly every variety of American grape is grown in California. All of the best varieties may be secured from the leading California nurserymen. Isabella should be trellised, do not prune it short.—J. W. M.

White Scale.

I send under separate cover a rose slip infested with insects. Please tell me what they are, also how to get rid of them.—Mrs. C., Escondido.

The insects on branch of the rose bush are good healthy samples of white scale, Icerya purchasi. These insects at one time practically ruined the orange groves of Southern California until they were conquered by a little lady bird, imported for that purpose. These little beneficial insects are now well scattered over Southern California and probably will soon find your white scale. However, if the infestation is bad and scattered over the place, you can secure the insects which will destroy them by writing to the State Horticultural Commission, Sacramento. If you have a bad infestation, the commission may wish you to send a few branches containing the white scale which may be used as "pasture" for some of the lady bird at the insectary. The name of the little beneficial insect is Novius Cardinalis.

Unless, however, the infestation is much worse than the branch sent to this office there is no occasion for worry. In fact, if you will make strong soap suds in which is a small cupful of kerosene well churned up it will probably be sufficient to destroy the scale.

Not a Milk Strain.

I have a cow, two years old, half Jersey, half Herford. She is now three months fresh and gives about half as much milk as she did three weeks before her last calf. She sucks herself despite every effort to prevent it. I have tied bags over her back and bag, have muzzled her, split her tongue, put a stick between legs and put nails in her halter and a stick in her nose. She gets around all of them. She is tricky, can open gates, is hard to drive up at night and I think sometimes holds her milk back. Her bag is large and I see no reason why she should not give at least three gallons per day instead of one and a half. Can you suggest a relief?—T. M. P., Mercedes, Tex.

No I should make beef of her for she is too wise if none of these things prevent her being a self sucker.—M. E. S.

Turkestan Alfalfa.

Please tell me where I can get seed of Turkestan Alfalfa and also of Paspalum dilatatum and which, in your opinion, is best for a small level pasture, not irrigation?—Mrs. M. K., Watsonville.

Seed men advertised in California Cultivator can supply you. We would prefer the Turkestan to. Paspalum. Paspalum requires moisture for satisfactory results.

Barren Strawberries.

Why are there no strawberries on our plants? The plants are two years old and very strong and healthy. They bloomed a month ago, and are still in blossom. The berries form and grow to be the size of a lead pencil, then dry up.—B. W. Martin, Elsinore.

You do not state what variety you have. Without knowing any more than you state, I should judge you have some pistillate variety. If so, you should have planted about every fifth row with some variety having perfect flowers so that pollen would be supplied to your present imperfect plants. If you have a pistillate variety now, there seems no help for you this season, as it is too late to plant strawberries. We have not found any variety so prolific and so satisfactory every way as the Brandywine, but you want to be certain you get good plants.—Q. A. L.

Grafting Grape Vine.

Please let me know if rooting Malagas planted this spring can be grafted to Muscats?—B., Kingsburg.

It is rather late to graft grapes. The latter part of March to the middle of April is the best time. Graft an inch or two below the surface of the ground and mound up the dirt to the bud of your scions. You can graft with small loss, vine one inch in diameter and up. If grafted when smaller than one inch, it is necessary to tie them in order to bind the scion in. Muscats will graft all right on Malagas.—J. W. M.

Canning Cherries.

I wish to can some sweet, well ripened cherries for home use, but folks say the black cherries will not keep well but almost dissolve into juice. Is this so, and is it the fault of the variety, or being too ripe, or faulty canning?—H. H. D., Los Gatos.

It is probable that fruit was overripe, or as some one has suggested, beet sugar may have been used, though there is a difference of opinion as to the effect of beet sugar in canning fruit. It has more friends now than it had a few years ago. Also, are you sure the can was perfectly air tight? If the fruit is very ripe, it is more likely to soften than the firm, fresher fruit.

Another has suggested that where fruit is put in water and brought to a boil, before adding the sugar, that

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it is more liable to be soft than where syrup is brought to the boiling point and the fruit added to this. Even soft blackberries put in boiling syrup this way become very firm; so much so, in fact, that it is impossible to make nice jam of them if treated in this manner, therefore, if subscriber will put this season's cherries in the boiling syrup and try that and also test the effect of different sugars, she may have some suggestions for our next years' readers.

Beets for Cow.

Are beets the proper food for milch cows? After feeding our Jersey beets for a couple of months she acted queer. In attempting to drink she would jerk her nose out of the water as if she had toothache, but after a few trials would drink all right. Mentioning the matter to a friend from the East who has had considerable to do with cattle he said that the beets were the cause of the trouble and that while the beet increased the flow of milk and cattle would often fatten on them that after a time their teeth would become loose and finally drop out.—W., So. Pasadena.

When I first built a silo I was told that the cows teeth would all drop out, for they had done so in the East. I was told that it was useless to grow beets for the same old reasons. Now it is merely a case of not understanding how to read the conclusions correctly. Cows will have sore mouths if feed on any sort of woody tough food, or any pieces too large to be easily crushed. I can understand that the imflammation might even extend to the sockets of the teeth if any one kept them eating on these hard or rough pieces too long. Cut the beets up into pieces not more than a couple of inches square and mix them with hay, chaff, straw or bran, or feed them stirred into short alfalfa hay. A quart of the above to every gallon of the sliced or chopped beets. We cut ours, the mangel wurtzels when we used them, first with an axe and then run them through a hay cutter. Sugar beets can be fed to the hay cutter without first chopping them up with the axe.—M. E. S.

Grapes for Imperial Valley.

Please give advice in regard to the table grape proposition in the Coachella valley. I am planting out this spring about 20 acres to the Malaga grape and will continue each spring until 80 acres is in grapes. I wish to know which variety of table grape you would recommend and if only one variety. I wish to secure literature on culture and growing of the table grape and please advise me as to the best authority.—F. I. F., Riverside.

From the looks of the young vineyards around that part of the country I should think very favorably of is as a vineyard country. The Malaga and Sultanina (Thompson Seedless) are the best tested of the white shipping grapes. I should plant twenty acres of each. Ten acres of Muscats ought to find ready market for those sold in Los Angeles are never sweet like the ones from this portion of the country will be. The Emperor and Tokay do not color well they tell me in that region. The Cornichon is a good grape down there. I should try a few Dattier de Beyrouth, this is the most promising of the lately imported of varieties. It is a white grape, very late. We had some that were good on the vines in February and this was the wettest winter we had in many years. While the information given here is not my own experience, I believe it to be correct as it comes from the talks I had in the Demostration car. The people tell the demonstrators often more than we can tell them on the trips.—M. E. S.

Peach Leaf Curl.

I send leaves which have some disease. What is the trouble and what will cure it? They are from Lovell peach trees.—J. S., Parlier.

These leaves are seriously affected with peach leaf curl. There is no remedy for it at this season of the year. This trouble is more general this year than for several years. The treatment should have been given a couple of months ago before the trees leaved out. The best you can do now is to give trees plenty of cultivation and water and keep in as healthy a condition as possible. Then when perfectly dormant next winter spray thoroughly with Bordeaux mixture.

(Continued on Next Page.)

Now is the time of year that the ever present question prevading the family council is, "Where shall we go, or what shall we do this summer?" The planning and scheming period is now upon us when our thoughts turn from the sordid pursuits of city life; for man hath need of rest and he longs for the simple joys the country yields. We all wish to set aside for awhile the cares and worries of business and visit the Blessed Isles of rest and recreation.

To aid you in selecting a place for your outing or to locate your family for the summer so as to make possible week end trips, the Northwestern Pacific Railroad, the Picturesque Route of California, has issued a book called "Vacation." This book describes the garden spots and playgrounds of California in the counties of Marin, Sonoma, Mendocina, Lake and Humboldt. You can find in this book some place to suit your fancy and your purse, whether it is to fish, hunt, swim, rusticate on a farm, or visit the numerous mineral springs or resorts.

The issue of "Vacation 1909" is now ready for distribution and can be obtained from the Northwestern Pacific Railroad at the Ferry Ticket Office, the Up-town Office 874 Market St. and Room 986 (General Office) Flood Building, San Francisco, Cal.

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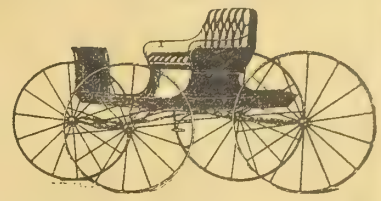

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Feeding Milk to Calf.

Please tell me how long a calf should be fed milk to make a good milch cow. Our calf is four months old, a very fine Jersey and we still give it milk, about a gallon a day, morning's milk at night and night's milk in the morning.—F. H. S., Fresno.

Stake this calf on green feed and begin at once to add skim milk to its feed, if there is no skim milk add water and gradually reduce the quantity in the morning until it receives none. Add water to the night milk and watch the calf, in a month's time it should require no more milk but live on grass entirely. Make changes gradually and watch effects, if the calf falls off, go slower in making the changes. Few calves receive any milk at four months on the dairy ranches where extra fancy stock is raised.—M. E. S.

Abortion.

I have a Jersey-Holstein which refuses to breed. Is there a remedy?—D., Brawley.

Have this heifer examined and if she is developed all right send to the C. I. Hood Co., Lowell, Mass., for breeding powder, which with its directions will probably be effective.

Legal Queries

Edw. L. Payne, attorney, 301-304 Douglas Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Payne is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Establishing Corner Stakes.

A purchased five acres of land from a corporation receiving deed describing property as "South one-half of lot No.—, section—, township, range, etc., all known, as same is described on certain recorded map." The deed does not gi[ve] tell where t[he] lines and the[y] on any 5 or 1[0] find. From meas[ure] make I do not seem [to] and think neighbors encro[ach] the question is, is the comp[any] pelled to give me my corners boundary lines? There is said in deed about it. If th[ere] were any stakes they are [now] They may have been [put] present owners believe tha[t] pany who sub-divided the l[and] give us our corners.—A Subs.

The company cannot be co[m]pelled to survey your land for you cate the corner stakes. If sired that to be done, you have required it before you your deed. If the stakes place at the time you acce[pted] deed, it would be your duty them there, or re-establish th[em] L. P.

Diverting Storm Water.

Neighbor A has thrown up bankment and diverted water f[rom] iginal course. Neighbor B is ed to throw up an embankm[ent] keep this diverted water f[rom] land. These embankments ha[ve] ed the water to my land ov[er] has been spread silt and glory seed. If A had not water from its natural co[urse] not have had occasion to claims A had no right t[o] keep the water from hi[s] none of this water would on my land I am damaged county road is also being What course should I pur[sue] against whom? Do the su[per]have power to order A to ta[ke] his embankment and allow t[he] to follow its natural cours[e].—Subscriber.

If A's embankment would n[ot] forced the water upon your la[nd] cept for B's embankment, your of action is against B. If A's em[bank]ment, without B's, forced the upon your land and B's merel[y] to the damage, your action sh[ould] against them together. You give B notice to remove his em[bank]ment. Your right of action damages, or if the trouble from water artificially applied and B's land, such as irrigati[on] ter, for injunction. The county have to proceed through the unless the embankment is on property.—E. L. P.

Planting Near Line.

Please inform me as to the it is necessary to keep fr[om] property line of your nei[ghbor] planting eucalyptus trees.—[Subscri]er.

The law does not require keep any certain distance fr[om] property line in planting trees kind.—E. L. P.

Law of Inheritance.

What is the law in M[ichigan] where a son or daughter dies making a will and one parent There are brothers and sist[ers] are the legal heirs?—W. bank.

If the intestate leave no husband or wife, his estate scend to his father; if no issu[e] husband or wife nor father, h[is] tate shall descend to his mothe[r]. no husband or wife or father mother or issue then in equal sha[res] to his brothers and sisters and to [the] lawful issue of any deceased broth[er] or sister by right of representation E. L. P.

There is an old adage which sa[ys] "An apple a day drives the doct[or] away." Certain it is that of all fru[its] which are within the reach of eve[ry] one none are so beneficial if [eaten] regularly. They act as a tonic [to] system and tend to purify th[e]

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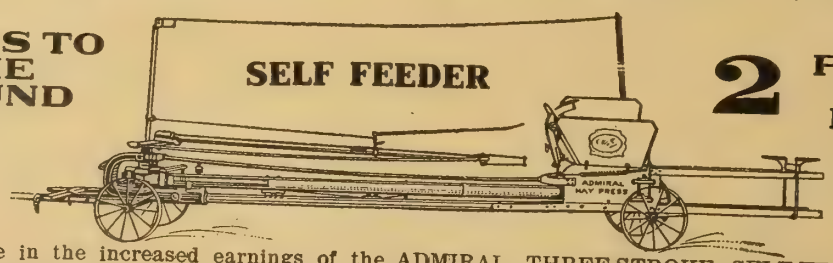

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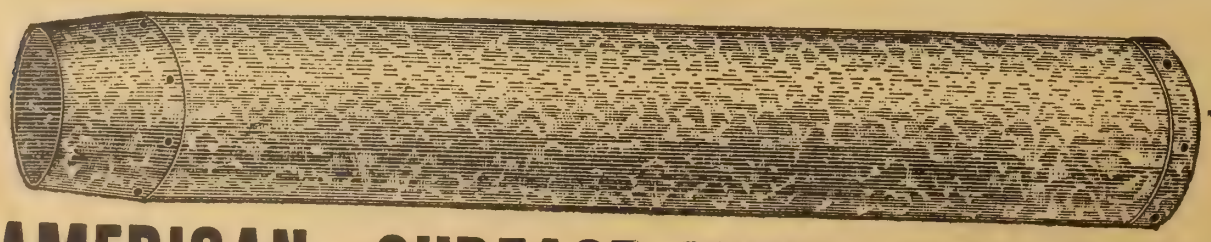

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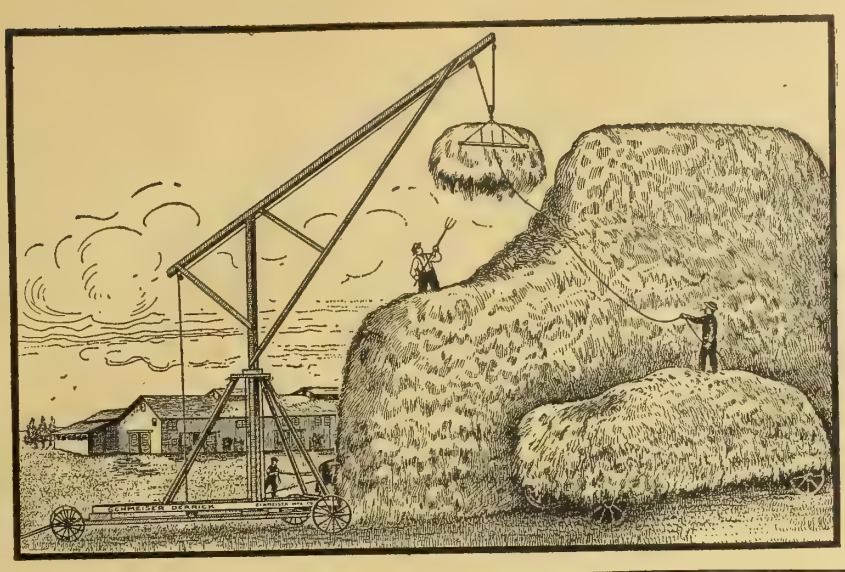

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USE OF THE DISK HARROW AND THE ROLLER.

SHORT time ago I received a letter containing such a good set of question about the disk er that I do not think that I better than to use the ques- subject of this talk.

—I desire especially to o use the disk harrow in a seed bed. Will it do as a te for the drag harrow or both be used?

finished with a disk harrow used for a seed bed, but the actice is generally to use both. y smooth surface may be made dium to light soils with the especially on land that is double d by lapping half each time. e medium to light soils would pulverize most readily by a drag ow. The disk is especially useful rking heavy, tight, land, While isk is about the best pulverizool it is apt to leave the land d. The smoothing down of these s with the drag harrow leaves and with a smoother surface.

stion.—Would you disk fresh n land where the ground is w and is good tilth when turned? why? Will the disk harrow to pack fresh plowed ground and t as a substitute for a sub-surpacker, where the packer, cannot ?

ld disk fresh broken land es- where I did not have a pack- ould scarcely like to say that the disk will act as a substitute for the packer, but there is no doubt but the disk if set fairly straight, will pack the soil and fill up the big spaces between the furrow slices to a considerable extent.

Question.—If last year's stubble be disked will it arrest evaporation and tend to preserve the moisture until land can be plowed later?

Yes. Mr. Campbell lays great stress on disking stubble or sod for two reasons, first, to open up the surface and let in the water, and second, for the production of a mulch to retain moisture. Sometimes a piece of ground is too dry at the surface to plow, while there may be a good deal of moisture some distance below the surface. In such case making a mulch by double disking would allow the moisture to accumulate nearer the surface, and land could be plowed later. I think that our New Mexico farmers are making a great mistake in not using the disk more freely on their stubble and sod land before plowing.

Question.—Would you advise rolling fresh plowing ground for the purpose of packing it and following this with harrow to leave dust mulch?

Yes.

Question.—What is the value of a roller in dry farming?

The roller is a tool which must be used with much judgment in dry farming, as its possibilities for working injury are fully as great as its possibilities for good. It can be used to great advantage in packing down sod which is broken shallow in the spring. It is valuable for crushing clods. Some day our farmers will be able to dispense with it for that purpose, because they will pay much closer attention to the moisture condition of the soil at the time of breaking, and will find that they will have much less need for a clod crusher than at present. Another condition that sometimes arises under which the use of the roller is very essential is where seed has been planted in a soil which is quite moist below, but dry near the surface. Rolling will compact the surface, thus causing concentration of the moisture there for a short time, and give the seed a chance to sprout. If the surface remains packed for very long, the soil will dry out. The great danger in the use of the roller is that it leaves the surface fine and compact, which favors evaporation. The surface should always be loosened, best with the drag harrow, after it has been rolled The essential difference between the roller and the sub-surface packer, is that the roller packs the surface of the soil, leaving it in a condition which favors evaporation, while the packer firms the plowed layer against the plow sole and leaves the surface loose.—J. D. Tinsley, New Mexico College of Agriculture.

The United States Forest Service is aiding farmers and stockmen about Alberquerque, New Mexico, against prairie dogs which have done immense damage. Nearly ten thousand pounds of wheat was poisoned to be used in the campaign.

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Mr. Hill counts restoring fertility to the soil a far more important question than tariff, banking, trusts or any other of the topics that find frequent discussion. He believes that if America is to continue great and wealthy it must nurse that which is the source of the greater part of its wealth; the soil.

Nor is Mr. Hill so patriotically narrow-minded as to think that America has nothing to learn from other countries. The average citizen is proud of American farms and their products; he talks boastingly of them in superlative terms. But the fact remains that America has much to learn from foreign lands in this very matter of soil fertility. The present average yield of wheat to the acre in the United States is 13.88 bushels; in England it is 30 bushels; in Denmark, 38; in Netherlands, 34; and in Germany, 27. In none of these countries are soil and climatic conditions more favorable for raising wheat than in the greater part of the United States.

The moral is just this; the farmers of those countries have not contented themselves with going up to the bank window and drawing out day by day,

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That the Lightest Looking Mower Is Very Apt to Cut Heaviest;

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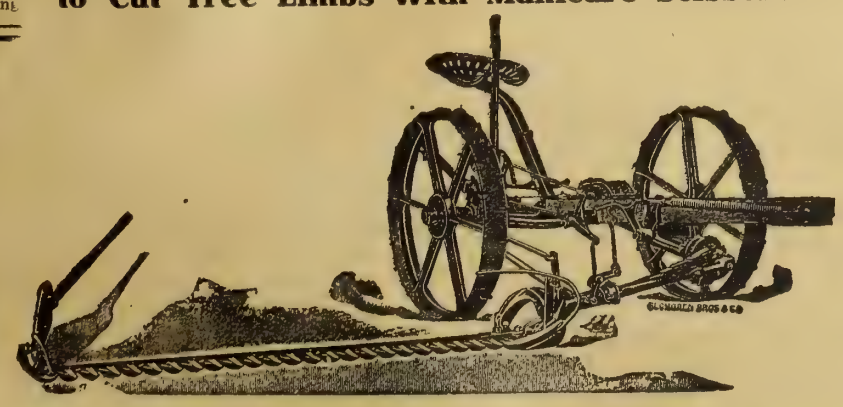

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WHITE WYANDOTTE AND WHITE Orpington eggs from choice matings, $2.50 per 15. A. W. HUSKINS, 713 Waterloo St., Los Angeles, Cal.

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year after year, without every little while making deposits which should give them a working balance. The same principle applies in agriculture, and the farmer who is succeeding now, and who is to succeed in the future, either in America or any other country, is the one who deposits the elements of fertility in the soil, as he deposits money in the bank, in greater amount than he draws out.—Iowa Homestead.

INVESTIGATIONS TO IMPROVE ALFALFA.

Alfalfa forms the basis of our agriculture throughout the western states; its unique adaptation to semi-arid conditions makes it an invaluable asset. Owing to its power to survive a drought, to exist on scanty moisture, its root system enables it to reach a deep-lying supply of soil fertility that is beyond the reach of common plant roots, but which will in turn become available to any crop if the proper crop rotation with alfalfa is established.

The power of alfalfa to restore worn out lands, and to improve soil that is deficient in humus and nitrogen is apparent to the most casual observer who will compare the crops grown on alfalfa sod with those grown on ordinary soil or even where barnyard manure has been heavily applied. Realizing these facts, it is evident that alfalfa should be more extensively grown in our crop rotations to maintain and restore the soil that is being depleted by the large crops of sugar beets and other products.

Many acres of alfalfa hay are sacrificed each year for the more remunerative returns from beets, cantaloupes or potatoes and, as a result, alfalfa hay is becoming scarce and the price is advancing to a point that will tend to dishearten the stock feeder. Also, the high prices realized for hay have not encouraged saving the alfalfa crop for seed; consequently the price of good alfalfa seed is about equal to the cost when it was first introduced. In the estimation of some the high price of land in the irrigated sections precludes the use of alfalfa as a profitable crop; especially on the small tracts and even on the larger farms, the proper proportion of alfalfa to other crops is seldom maintained, and evidently the real merit of alfalfa is overlooked.

When expensive land is occupied with alfalfa for recuperation, which soon or later will become necessary, it is apparent to all that it should be made to yield the highest returns possible, in hay, seed or fertility. To this end the alfalfa seed breeding work has been instituted. The idea was suggested in 1904, when investigating the insect injuries and other causes for the poor yields of alfalfa seed in the lower Arkansas valley in Colorado. It was then noted that there was a great contrast in the seed yield of different plants under apparently the same condition; also, that the type and quantity of hay from different individuals varied. Seed from some of the most promising plants was secured and sown the following season in a comparative test with the common alfalfa, and some Turkestan seed from Germany. Later the nursery was increased to sixty-four plats of different varieties and individual types. The nursery has served as a comparative test to determine the relative merit of these different types of alfalfa, and it is almost needless to say that the most remarkable contrasts in desirable qualities have been developed. Some of the traits superior to ordinary alfalfa that have been shown are as follows:

Hardiness; freedom from winter killing.

Large stooling; eight to ten times as great as common alfalfa.

Frost resistance in the green growing plant.

Desirable type for hay; fine stems, many leaves.

Freedom from tendency to lodge with wind or rain.

Seed setting tendency, satisfactory.

The contrasts in desirable qualities found in the nursery is evidence of a great opportunity to improve the ordinary alfalfa by seed selection, and the results of the few year's selection is assurance that such improvement would be immediate for our alfalfa crop, if a supply of such seed were available. We have bred up our corn, wheat, potatoes and beets, but with our alfalfa seed we have been satisfied with the work of an Arab. Alfalfa has been alfalfa, and the man that produced seed sold his best and seeded his fields with the tailings from his fanning mill.—P. K. Blinn.

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Long may the Fresno Nursery Continue to be "leading growers and dealers in fruit trees and grape vines."

THE CENTURY.

The May Century has fiction a plenty—the last chapters of Alice Hegan Rice's novel, "Mr. Opp," and stories in which humor is the dominant note by Mary Heaton Vorse, Adeline Knapp, and W. Albert Hickman—but leading place is given to Thomas Nelson Page's story, "The Old Planters," a tale of a quaint old hostelry in Virginia, and of the quaint old aristocrats who played host, and of the guests who came and went.

Not the least interesting and important article of the number is the narrative of how, in less than six years, 388,000 American farmers have pulled up stakes in "the states" and moved to free homesteads in the Canadian Northwest. That story is told in "The Last Trek to the Last Northwest," by Agnes C. Laut, author of "The Conquest of the Great Northwest," who has traveled through all the territory of which she writes.

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

Bees and Their Care

EXTRACTION OF BEESWAX.

IN view of the increasing interest in apiculture and the lack of definite information on the subject of the extraction of beeswax, an important product of the industry, F. C. Alford, of the Colorado Station, has made a study of the relative efficiency of different methods of extraction now in use. He experimented with solar extractors, those using steam, and those using pressure under water heated sufficiently to melt the wax. In the latter method he used water alone and water containing sulphuric acid.

The solar extractor used by Mr. Alford was simple in construction and can be made by anyone who is handy with tools. It consists of a wooden box about 30 inches long, 16 inches broad, and 6 inches deep. This box is lined with tin and near one end has a wire-cloth screen to allow the melted wax to run down into a pan at the lower end of the box. The waste wax and brood comb were placed in the upper part of the box, which was set at an angle toward the sun and covered with glass, preferably double. The size of the solar extractor will be determined by the amount of wax to be extracted. If desired, a lamp may be used to furnish additional heat. A hole should be cut in the bottom of the box, so that the heat of the lamp will strike the tin lining under the wire screen. The lamp should be protected from the wind. The use of a lamp increased the efficiency of the extractor about one per cent. A like increase was obtained by soaking the comb in water for several days before extraction—a practice followed by some bee keepers. Soaking the comb for three days in a 5 per cent solution of sulphuric acid increased the yield of wax about 5 per cent.

Three kinds of steam extractors were tested in these experiments. Tests were also made of pressure under water with and without addition of 5 per cent of sulphuric acid.

Pressing under Water.

The comb, with some water, was put in a tub on the stove and the wax allowed to melt, but not to boil. A can was placed under a press and a slatted follower placed in the bottom of the can. Above this was placed a burlap bag and the hot water, melted wax, and comb were poured into the bag, the top of the bag folded over, a slatted follower paced on top and pressure applied by means of a screw. After some of the wax had been forced out, the water and wax were drawn off, the pressure relieved, the "slumgum" stirred, hot water added, and pressure applied again. The can, which fits under the press, has two holes which are stopped by corks. One is at the bottom and the other near the top. By pulling the cork out of the upper hole the wax which has risen to the top can be drawn off and by using the lower hole all of the wax and water can be removed. The whole apparatus must be kept as warm as possible. * * *

Sulphuric Acid and Pressure under Water.

It was thought that the addition of acid to the water in the experiment might increase the efficiency of the method. The comb was heated in a porcelain-lined tub with a solution of 5 per cent commercial sulphuric acid. When the wax had melted it was poured into the sack in the press and pressure applied quickly in order not to have the acid in contact with the metal any longer than necessary. The wax and water were drawn off, boiling water added, the slumgum stirred, and pressure applied again. This water was drawn off and put with the rest. As this was an experiment to determine the efficiency of the press a tin can was used, but in practical work it would be necessary to have everything acid proof, as hot acid, even when diluted, is very destructive to most substances. The can could be made of wood or porcelain-lined ware. The latter would probably be the better.

This method was easy to manipulate and rapid and was the most efficient of all the methods used.

The results reported show that "the slumgum from 100 pounds of wax treated by the ordinary solar wax extractor will retain from 34 to 36 pounds of wax, which can be removed by heating with dilute sulphuric acid and pressing under hot water. With the best of the steam wax extractors used there remains in the slumgum about 7 pounds of wax which is obtainable by the use of the sulphuric acid and pressure. With the price of wax at 25 cents a pound it would pay to buy old slumgum and remove the wax by this method."

The wax obtained with the steam extractors "did not have a good color, and would have had to be refined before it could be used. The wax from the solar extractors was always a better color than that from the steam extractors. The wax formed by pressure under water was nearly as good in color as the wax from the solar extractors. The wax obtained by pressure under water containing 5 per cent of sulphuric acid was very good in color, in fact, almost as good * * as most of the wax obtained from the solar extractors."

Wax from old brood comb is too dark to be used for comb foundation, so that some satisfactory method of bleaching must be employed. Various methods of bleaching were therefore tried, but most of them either destroyed the wax or were in themselves poisonous.

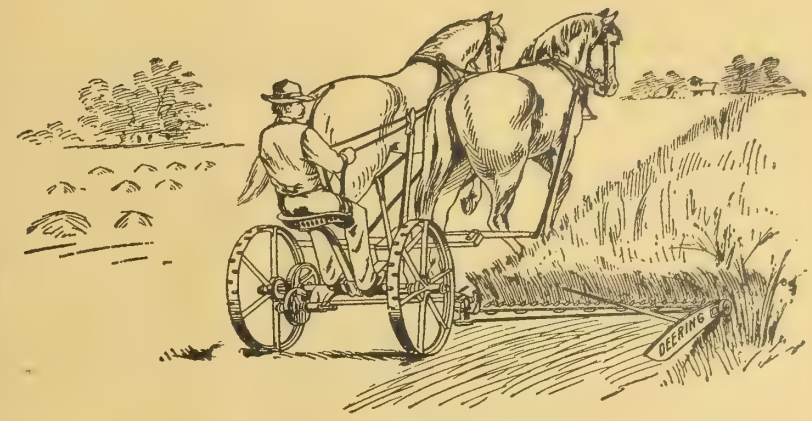
As a result of these experiments and from his experience in handling bees and rendering wax Mr. Alford expresses the following opinion:

"It is best for the average bee keeper to have a large solar wax extractor, heated by some artificial heat, by means of which most of the wax in the lighter colored combs, cappings, and burr combs may be easily rendered. The dark combs may also be treated in this manner and the slumgum stored in barrels until the bee keeper has time to treat it with dilute sulphuric acid and press under water. This method is quick and efficient. If the wax has to be refined it can be done by heating, while inclosed in a canton flannel sack, with a solution containing 5 per cent of hydrogen peroxide and 2 to 5 per cent of sulphuric acid. Both of these chemicals can be bought at the ordinary drug store. The common kind, commercial, should be used."

In mixing the acid and the water care should be taken to always pour the acid gently into the water and not the water into the acid.

The cost of the chemicals compared with the results obtained is very slight.

Deering Ideal Mower



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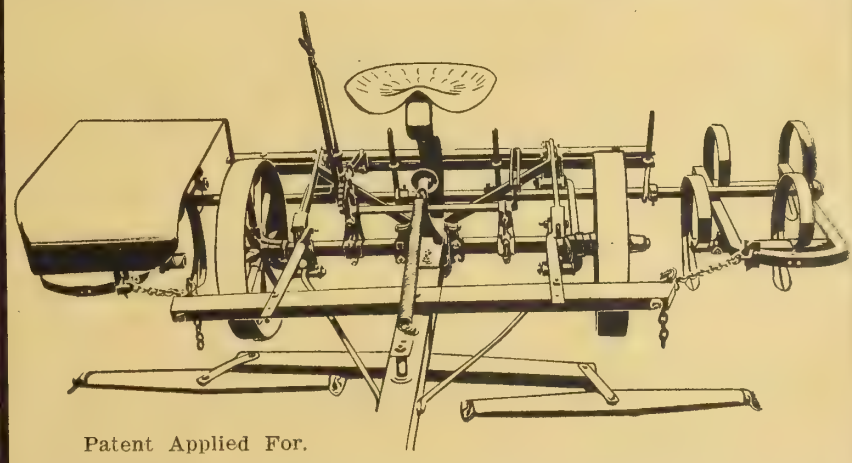

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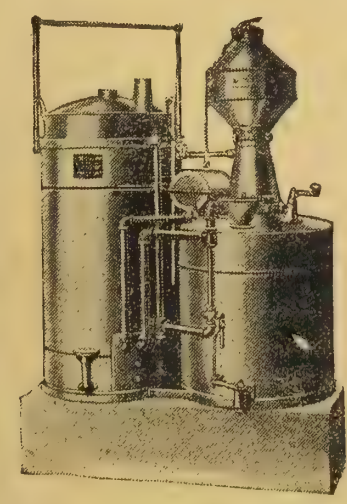

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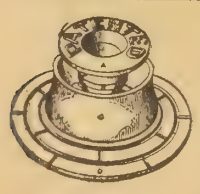

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Out of the West, when the sun is low,
Comes the mellow light of the afterglow.
Out of the West, the sun breaks through
To tinge with gold the clouds dull hue.
Out of the West, the wind is sent
To clear the sky when the storm is spent.

Out of the West comes the yellow gold,
For this may life be bought or sold.
Out of the West came man who won
The laurel wreath of the champion.
Out of the West came the fastest horse
That ever sped o'er the trotting course.

Out of the West the ripe fruit goes
To cheer the East, midst its winter snows.
Out of the West, a city fair
Was plunged in a day to deep despair,
Out of the west rose a heartfelt prayer
For the countless ones who perished there.

Out of the West rose a city grand
It's first stones laid in the heated sand.
Out of the West comes the voice of praise
For those who toiled through the first dark days.
Out of the West let us send the call:
"Here is a welcome for one and all."

Out in the West we have built our home,
And out of the West we ne'er shall roam.

—B. W. McGrath, Cloverdale.

IN THE DARK.

SOME one had kissed Eileen in the dark. Who it was she had not the slightest idea. The man had stealthily stolen up behind her, while she was walking down the dark hallway to her room, and had planted a resounding smack on her lips before she had more than time to draw her breath. She was convinced though that some male member of the house party was the guilty person.

Eileen did not scream when she was kissed. Instead she marched to her room very, very angry, and there meditated revenge. Consequently, after a talk with her pretty maid, she told the assembled guests at the breakfast table the following morning, this story:

"'My maid," she said, "had a most disagreeable experience last night. While she was coming down the dark hall to my room, some man—who is unknown—kissed her!"

Eileen was surprised at the impression her statement made. All the guests showed deep interest, but two men in particular drew her attention. Elson Jacobs, handsome and young, directly across the table from her, turned deathly pale and the butler, standing directly behind him, turned a most embarrassed red. The guilty party must be one of these two men! Eileen felt a thrill of chagrin as she contemplated the fact that it might have been the butler and her heart beat rapidly when she thought that it might have been Elson.

Following the meal Elson came up to her.

"You say it was your maid that was kissed?" he asked.

Eileen nodded. A most sickly look came over Elson's face. Without a word and with dejected tread, he dragged himself away.

Shortly after the butler came to Eileen.

"I only thought I'd better say, mum," he exclaimed with extreme embarrassment, "that it was all right about your maid. She's engaged to me, mum, so it was all right for me to kiss her."

"You did kiss her in the hall last night?"

"Yes mum."

Eileen felt a pang of pure dismay at this. She felt sure that the butler had made a mistake—that he had kissed her instead of her maid. And yet, why should Elson act so queerly? Eileen felt very ill at ease. In despair she hurried to her room where the maid could be found.

"Mary," she cried to the girl. "You know what I told you about telling the guests that you and not I had been kissed? Well, it has turned out very badly. It looks as if I had been kissed by two men instead of one. It's horrible. The butler—"

Mary stopped her imperiously.

"Was he kissing you, too?" she asked.

"Oh, did some one kiss you in the hall last night? Why didn't you tell me about it?" cried Eileen.

"Sure, I don't think I had to be telling you all that; but he met me and talked, and then he did kiss me."

Eileen with a huge sigh of relief, rushed from the room. At the foot of the stairs she met Elson.

"Eileen," he cried, "I meant to kiss you last night. Tell me I didn't make a mistake and kiss your maid instead?"

"How could I tell," she replied archly. "I didn't see the man that kissed me and—and there's only one thing he did that I could recognize him by."

Elson with a laugh of pure joy rushed toward her, but Eileen, her face scarlet, rushed from him up the stairs.—Spokesman Review.

RECEIPES.

Cream Chicken.

Two cupfuls of cold chicken, one large cupful of cream sauce, a little chopped parsley, about one-half teaspoonful of salt and pepper. Cut the chicken into even pieces before you measure it; heat in the sauce until very hot, but do not let it cook; then season.

Stewed Celery.

Cook the celery in slightly salted boiling water until tender, having first cut it into half-inch pieces. Bring one and one-half cupfuls of milk to a scald, then pour it slowly over the well-beaten yolks of two eggs and one-half cupful of rich cream. Cook until it thickens, without boiling, season with salt and pepper, then pour it over the celery in a heated dish, and serve at once. Or the milk may be thickened with a little flour or corn starch if preferred. Stewed celery is very nice served on small squares of hot buttered toast.

Celery Stuffing.

For chicken and turkey, celery makes a delicious stuffing. For turkey use about one pint of finely chopped celery, one tablespoonful of minced onion, one teaspoonful of minced parsely, one-half teaspoonful of powdered thyme and the juice of a large lemon. Add one breakfast-cupful of oysters cut rather small, one teaspoonful of salt and two or three dashes of pepper. Fill the turkey with this, and sew it up. To make the turkey more tasty, baste it fre-

quently with a mixture of melted butter and oyster liquor.

Celery Sauce.

This sauce is to be served with vegetables. Take cream or rich milk and boil with pieces of celery till flavor is extracted. Remove it, and season sauce with salt and pepper. Add butter, then a little flour for thickening.

WHAT CAN BE DONE WITH SALT.

Salt cleanses the palate and furred tongue, and a gargle of salt and water is often efficacious. A pinch of salt on the tongue, followed ten minutes afterward by a drink of cold water, often cures a sick headache. Salt hardens gums, makes teeth white and sweetens the breath. Cut flowers may be kept fresh by adding salt to the water. Weak ankles should be rubbed with solution of salt water and alcohol. Rose colds, hay fever and kindred affections may be much relieved by using fine dry salt, like snuff. Dyspepsia, heartburn and indigestion are relieved by a cup of hot water in which a small spoonful of salt has been melted. Salt and water will sometimes revive an unconscious person when hurt, if brandy or other remedies are not at hand. Hemorrhage from tooth-pulling is stopped by filling the mouth with salt and water. Weak and tired eyes are refreshed by bathing with warm water and salt. Public speakers and many noted singers use a wash of salt and water before and after using the voice, as it strengthens the organs of the throat. Salt rubbed into the scalp or occasionally added to the water in washing prevents the hair falling out. Feathers uncurled by damp weather are quickly dried by shaking over a fire in which salt has been thrown. Salt always should be eaten with nuts, and a dessert fruit salt should be specially made.

HOMELY HINTS.

Constant exposure of mirrors to the direct rays of the sun is apt to crystalize the amalgam and destroy the brilliancy.

Strong hot vinegar will remove paint from window glass.

A little milk added to the water in which silver is washed will help to keep it bright.

To revive the luster of morocco or any other leather apply the white of an egg with a sponge.

A little flour spread over the top of cakes before they are iced will prevent the icing from running off.

Use a little ammonia in the dish water when washing glassware. It will make it sparkle like cut glass.

Sausages should be served with apple sauce or baked tomatoes. Either makes them more easily digested.

When cleaning knives mix a tiny bit of carbonate of soda with the bathbrick and they will polish more easily.

Cereals are seldom overcooked, but rather undercooked. Thus always allow plenty of time in preparing cereals.

SUSPICIOUS.

The Widow (at her washtub, to suitor)—Is yo' sho' yo' lubs me?

Sammy—Co'se I'se sho'.

Widow (suspiciously)—Yo' ain't los' your job, is yo'?—Evening Post.

The Lady—"What, 38 cents a dozen for eggs! Why, that's more than 3 cents for one egg!"

The Grocer—"Well, mum, you must remember that one egg is a whole day's work for one hen."

HOW TO CURE A NERVOUS HEADACHE.

Are you bothered with nervous headaches? Here is one of the simplest yet most effective cures. All that is required is an empty beer bottle or even the rolling pin. Anything will do, in fact, if it is round and hard. Lie down flat upon your back, and place the bottle under the back of the neck, allowing the weight of the head to press down the neck hard against the bottle. Retain this position for five or ten minutes and note how the headache gradually disappears. The pressure cures because it presses down upon two large nerves in the back of the neck, causing them to rest or sleep for the number of minutes the pressure is maintained. This rest allows the nerves to be toned up to normal condition. The treatment is intended for the nervous headache. It will have no effect upon the sick headache, wherein the stomach is the cause.

A SEWING CORNER.

A sewing corner is something that every woman who sews should have. Choose the brightest and sunniest corner in the sitting room, and make it your own little sewing corner. What a lot of trouble it will save you to have all of your materials together when you want to sew. And when you are called out in the kitchen to attend to dinner, you won't have the annoying feeling that your sitting room is a "sight" to behold, should any ne call.

Tack some nails in the wall, within convenient reach of your arm, and hang on them your spools of thread, darning cotton, etc. Above these drive more nails on which to hang your scissors, thimbles, pincushions, etc. Or the opposite side of the wall have another row of nails, on which to hang bags (made of cheese cloth, calico or any material you may choose), in which to keep scraps and odd bits of lace, ribbon, etc. Of course there must also be a large bag to hold the stockings which need mending.

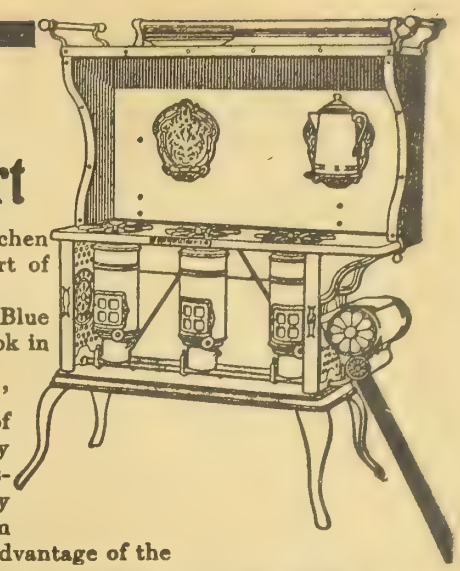
WORRY.

Where work wears out one, worry wears out thousands. There is less happiness among the great than among the poor "But if these limitations could only be removed?" "If I did not have to work so hard?" "If I could be my best self!" "If I could have that for which I know I am fitted!" Ah, greatness of gift always implies greatness of responsibility; if one limitation goes, another comes; that which seems to give freedom only increases slavery. Almost all men, like birds, beat themselves against their cages, longing to get into some different world, to soar beneath some more splendid skies, ignorant of the abysses in that larger world and of the storms which sweep those skies.

Coal Oil Stains.

What will take coal oil stains from carpet?—Subscriber., Bakersfield.

We will ask the readers of the Household Department to give us information as to their experience along this line. However, as one suggestion, a housewife has told us to cover the surface of the stain with chalk, preferably French chalk although the ordinary will do, then lay sheet of brown wrapping paper or blotting paper over it and place hot flat iron on top.



Plan for Summer Comfort

Don't add the heat of a kitchen fire to the sufficient discomfort of hot weather.

Use a New Perfection Wick Blue Flame Oil Cook-Stove and cook in comfort.

With a "New Perfection" Oil Stove the preparation of daily meals, or the big weekly "baking," is done without raising the temperature perceptibly above that of any other room in the house. Another great advantage of the

NEW PERFECTION Wick Blue Flame Oil Cook-Stove

is its handsome CABINET TOP, which gives it every convenience of the modern steel range. Has an ample top shelf for warming plates and keeping cooked food hot, drop shelves for holding small cooking utensils, and is even fitted with racks for towels. Made in three sizes, and can be had with or without Cabinet Top. If not at your dealer's address our nearest agency.

The *Rayo Lamp* gives perfect combustion whether high or low—is therefore free from disagreeable odor and cannot smoke. Safe, convenient, ornamental—the ideal light. If not at your dealer's address our nearest agency.

STANDARD OIL COMPANY (Incorporated)

Mayer HONORBILT SHOES FOR MEN

These splendid men's shoes represent the best there is in shoe leather. Every piece of material is of the choicest tannage. The workmanship is perfect; the styles are up-to-date. When it comes to service, there is nothing that equals them in lasting qualities.

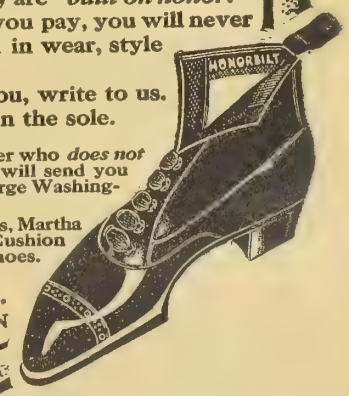
"HONORBILT" SHOES

are everything the name implies. They are *"built on honor."* No matter where you look, or what you pay, you will never find anything that will outclass them in wear, style or comfort.

If your dealer will not supply you, write to us. Look for the *Mayer Trade Mark* on the sole.

FREE—Send us the name of a dealer who *does not* handle Mayer Honorbilt Shoes, and we will send you free, postpaid, a beautiful picture of George Washington, size 15x20.

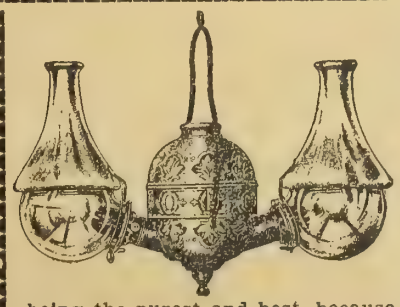
We also make Leading Lady Shoes, Martha Washington Comfort Shoes, Yerma Cushion Shoes and Special Merit School Shoes.



MILWAUKEE Mayer CUSTOM MADE

F. Mayer Boot & Shoe Co.
MILWAUKEE, WISCONSIN

WESTERN BRANCH: Washington Shoe Mfg. Co.—Seattle.



Angle Lamp

The Light That Never Fails

Thousands in use all over the country. A good light is the greatest pleasure and the first necessity of every home.

The only lamp on the market that is sold under an absolute guarantee.

Remember, the light from Kerosene is the light science has agreed upon as being the purest and best, because it is soft and mellow and restful to the eyes. Here are a few of The Angle Lamp Merits:

NO UNDER SHADOW. NO SMOKE, NO ODOR, LITTLE HEAT. GREAT ECONOMY—COST LESS TO BURN than an ordinary lamp. As easy to operate as gas or electricity, and better than either. **ABSOLUTELY SAFE** under all conditions. Lighted and extinguished like gas. Burned **HIGH** or **LOW** like **GAS** without a trace of odor. And a **BRILLIANT, soft,** steady, shadowless light—but this you will have to see to appreciate.

The lamp as shown in cut burns 22 hours on 3 quarts of oil.

Send for Illustrated Catalogue with Prices

Boesch Lamp Co., 1135 Mission St., San Francisco

Established 1869 Incorporated 189

When writing advertisers, mention Cultivator.

San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, April 28, 1909.

Butter.

Butter still stands at 47½ for extras and with featureless market.

Produce Exchange wholesale quotations are as follows with actual selling price to the trade 2½c advance on Extras.

Creamery ex per roll 47½
Firsts 45
Eastern Creamery ex 47½
Dairy 24
Cooking 20
Butterine .....16@20

Cheese.

Southern California Anchor 17
Northern fresh 17½
Anchor Young America 19
Longhorn 21
Eastern singles 20
Cheddars 19
Swiss .....16@17
Imported Swiss 30
Daisy .....20@21
Limburger 21
Oregon triplets 18
Twin 18½

Eggs and Poultry.

Eggs have advanced 3 cents for extras during the week and case counts have advanced to 24 cents. Storage takes all surplus stock.

Eggs local candled 26
Eggs extra selected 28
Eggs case count buying price 24

Dealers pay for live stock.

Hens per pound .....16@17
Young roosters 16
Fryers per lb 25
Broilers per lb 30
Roasters 20
Old roosters 8
Turkeys .....18@20
Geese 15
Ducks 15
Squabs .....1.25@1.75

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs from 175 to 200 pounds 6½@6¾
Prime steers .....4¾@5
Heifers .....4@4½
Calves per pound 5
Sheep ewes per head .....3.75@4.00
Lambs per head .....3.25@3.50
Wethers .....4.50@5.00

Potatoes.

Wholesale prices are:

Sweets per ctl .....1.50@1.85
Sweets choice .....1.15@1.25
Sweets White 1.50
Sweets Red 1.50
New per lb .....5@6
Early Rose local .....2.50@2.75
Early Rose northern .....2.50@2.75
Burbanks local 2.75
Lompocs .....2.65@2.75
Highland fancy .....2.40@2.50
Salinas 2.50
Oregons Burbanks .....2.50@2.60
White Rose 2.25

Onions.

Wholesale quotations:

Australian Brown 3.50
Danvers .....1.75@2.00
Oregon's .....2.00@2.25
Nevada's .....2.00@2.25
Utah's .....2.00@2.25
Red Globe .....1.75@2.00
Imperial Bermudas per crate 1.75
Texas Bermudas per crate 1.75
White wax per crate 2.00
Garlic .....10@12

Vegetables.

Artichokes per doz northern 90
Artichokes locals .....50@75
Asparagus green .....2½@6
Asparagus per lb common .....3@5
Beets per sk .....1.00@1.10
Bell peppers per lb .....20@40
Beans string .....15@25
Brussels sprouts per lb .....9@10
Cabbage per sk .....1.00@1.25
Cabbage red per lb 3
Celery per crate .....5.00@6.00
Chili per lb .....20@25
Chili dried .....9@10
Chicory per doz 50
Cucumbers per doz hot house 1.75@3.00
Cauliflower per crate .....2.25@2.50
Carrots per sk .....1.00@1.25
Chives per doz 1.60
Endive per doz 25
Egg plant 25
Green onions per doz bunches ..15@25
Horseradish per lb .....12@15
Lettuce per crate .....75@1.00
Lettuce choice .....50@90
Mushrooms per basket 3.00
Oyster plant 50
Okra per lb 40
Peas per lb .....1@3
Parsley doz .....20@40
Parsnips .....20@25
Rhubarb Northern per box ..1.50@2.00
Rhubarb C. W. .....85@1.00
Radishes per doz .....15@20
Spinach per doz .....20@25
Turnips sk 1.00
Tomatoes crate 1.50
Water cress .....15@20

Citrus Fruits.

Navels fy .....1.50@2.75
Navels ch .....1.25@1.50
Tangerines halves .....1.60@1.75
Grapefruit seedless .....3.00@3.50
Grapefruit seedlings .....1.50@2.00
Lemons fy .....1.75@2.25
Lemons ch .....1.00@1.50
Limes half box .....1.50@2.00

Fresh Fruits.

Wholesale prices on the market are:

Baldwins 4 tier 1.35
Bellflowers 1.75
Newton Pippins .....1.00@1.50
W W Pearmains 2.00
Spitzenberg .....2.25@2.50
Jonathans 1.75
Aligator Pears per doz .....3.50@4.00
Custard apples per lb .....10@15
Guavas .....4@6
Loquats per lb .....4@6
Pears box .....1.75@2.00
Raspberries 15
Strawberries 6
Strawberries ch 3
Blackberries 10

Dried Fruits.

Wholesale prices are:

Apricots .....8@10
Evap apples fy per lb 8½
Figs loose white 5
Figs blk 5
Peaches in boxes .....6@8
Peaches sacks .....6@7
Pears 9
Plums pitted .....8@9
Nectarines .....7½@9
Prunes 30's to 40's boxed 8
Prunes 40's to 50's 7½
Prunes 50's to 60's 7

RAISINS—Muscatels, 2-crown, loose, 50-lb. boxes, lb., 3½c; do., 3-crown, 4c; do., 4-crown 5c; sultanas, bleached, lb., 9c; do., unbleached, 3½@4c; new seeded raisins, 16-oz. packages, 6c; do., 12-oz. packages, 5c.

Beans Dried.

Wholesale prices are:

Limas per ctl 4.50
Pink No. 1 .....3.65@3.75
Lady Washington 5.10
Small White .....6.00@6.25
Black eyes .....3.75@4.00
Garvanzas 4.00
Lentils California 7.00
Lentils German 8.00
Bayou 3.50

Nuts.

Almonds IXL per lb .....14@15
Ne Plus Uutra 14
Pecans polished 15
Peanuts Virginia .....6½@7
Peanuts California 5
Peanuts Jap .....6@6½
Walnuts No 1 .....11@12
Chestnuts .....13@14

Honey.

Wholesale quotations:

Extracted water white 8
Extracted Light Amber .....6½@7
Comb W W 16
Comb white 15
Beeswax 30

Hay.

Prices paid to producers f. o. b. Los Angeles are as follows:

Barley No 1 .....21.00@23.00
Barley No 2 .....18.00@20.00
Alfalfa northern per ton ..14.00@15.00
Alfalfa local .....15.00@18.00
Tame Oat No 1 .....22.00@24.00
Wheat No 1 .....19.00@21.00
Wheat No 2 .....18.00@20.00
New barley hay 14.00
New alfalfa 12.50

Grains.

Wholesale selling price f. o. b., Los Angeles.

Wheat new per ctl .....2.05@2.10
Kaffir corn 1.85
Corn Eastern bulk .....1.65@1.68
Egyptain corn 1.85
White oats 1.90
Seed Rye 1.80

Feed Stuff.

Wholesale selling price f. o. b., Los Angeles:

Cracked corn 1.85
Shorts 1.80
Bran 1.65
Cocoanut cake meal 1.85
Cottonseed meal 1.25
Oil cake meal 2.50
Feed meal 1.85
Rolled barley 1.50

San Francisco Markets

SAN FRANCISCO, April 27, 1909.

Butter.

The butter market is not strong. Prices quoted remain as last week with no promise of early change.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras per lb.....24
California firsts 23
California seconds 22½

Cheese.

California flats fy 15½
Firsts 15
Seconds 12
Cal Young America fy 16
Firsts 14½
Young American Oregon fy 15½
Eastern N. Y. Cheddars fy 17½
Oregon flat fy 16

Eggs and Poultry.

Eggs declined a half point on Friday then advanced a cent and a half on Monday and are now very firm at 25 for extras.

Official quotations of the S. F. Wholesale Dairy & Produce Ex. are:

Fresh ranch extras 25
Eggs first per doz 23
Eggs second 22
Eggs thirds 21

Hens per doz .....4.50@6.50
Hens extra .....7.00@9.00
Young roosters .....9.00@11.00
Old Roosters .....4.00@5.00
Fryers per doz .....6.00@8.00
Broilers per doz .....3.00@5.50
Geese per pair .....1.50@1.75
Goslings per pair .....1.75@2.00
Ducks young .....6.00@7.50
Live Turkeys .....17@19
Dressed Turkeys .....18@22
Pigeons young .....2.00@2.50

Live Stock.

San Francisco prices gross weight:

Steers No 1 .....4½@4¾
Do second quality 4¼
No 1 cows and heifers 3¾
Second quality 3¼
Hogs 100 to 140 .....7@7¼
Hogs 140 to 250 .....7¼@7½
Rough heavy .....4½@5
Calves per lb .....4@5¼
Lambs yearlings 5¼
Milk lambs .....5¾@6
Wethers No 1 unshorn 4¾
Ewes No 1 .....4¼

Potatoes.

Wholesale market quotations:

River white fy sacks .....1.85@2.00
Early Rose .....1.85@2.00
River Burbanks .....1.35@1.50
Salinas Burbanks .....2.40@2.47½
Lompoc Burbank .....1.75@1.90
Sweets per crate .....1.25@1.50
Oregons .....2.15@2.25
New potatoes .....1½@2½

Vegetables.

Wholesale quotations:

Asparagus per lb .....2½@3
Bell peppers per lb 25
Brussels sprouts per lb .....3@5
Cabbage per box .....2.00@2.25
Cauliflower doz .....75@1.00
Carrots per sk .....65@75
Celery per doz .....40@60
Cucumbers per doz .....50@1.00
Chili peppers per lb .....20@25
Egg plant per lb .....20@25
Green peas per lb .....2½@4½
Mushrooms per lb .....12½@25
Marrowfat squash per ton 20.00@25.00
Squash cream per box .....50@65
Onions green per box .....60@75
Rhubarb per box for bay ..1.25@1.65
String beans .....12½@15
Tomatoes box Mexicans .....75@1.25
Wax Beans .....10@12½
Garlic new .....7@9

Onions.

Onions Oregons .....2.35@2.50
Australian Brown .....4.00@4.25
Texas Bermudas per crate ..1.55@1.65
New green per box .....25@75

Citrus Fruits.

Navels fy .....2.00@2.50
Choice .....1.75@2.25
Tangerines per crate .....75@1.50
Mandarins .....75@1.00
Grapefruit seedless .....1.50@2.75
Grapefruit seedlings .....1.00@1.75
Lemons ch .....1.25@1.75
Lemons fy .....2.00@2.75
Limes .....4.00@5.00
Limes Cal sm box .....1.00@1.25

Fresh Fruits.

Bellflowers .....1.00@1.35
Bellflowers No 2 .....60@1.00
Spitzenberg .....1.25@2.00
Newton Pippins .....1.25@1.75
Ben Davis .....1.25@1.65
Winter Nellis .....1.25@1.50
Other Kinds .....75@1.00
Strawberries L. A. per crate ..75@1.00
Malindas per chest .....4.00@7.00
Longworths per chest .....8.00@12.00
Pineapples per doz .....2.00@4.00

Dried Fruits.

Prunes 4-size basis 2½
Santa Clara 2¾
½c premium for larger sizes
Apricots per lb; Choice 8½; fancy 7@10.
Peaches—Choice ..4¾; fancy ..6@7½
Apples evap .....5@7½
Pears .....5@8½
Figs .....2½@4
Nectarines .....5@6
Pitted Plums .....7@8

RAISINS—1908 crop, f. o. b.: Fancy Seeded No. 16, cartons, 4½c; do, No. 12, 3¾c; do, Choice, No. 16, 4c; do, Choice, No. 12, 3¾c. 50-lb. bxs: Loose Muscatels, Standard, 4-crown, 4c; 3-crown, 3c; 2-crown 2½c; Seedless Thompson, unbleached, 3½c; Seedless Sultanas, unbleached, 2¾c; Dried Grapes, 2c; London Layers, clusters, 6-crown, $3; 2-crown, 90c; 3-crown, $1; 4-crown, $1.50; 5-crown, $2.50.

Nuts.

Walnuts S S No 1 .....9½
Walnuts No 2 8
No 1 Standard 8½
No 2 Standard .....4½@5
Almonds Nonp 11½
Almonds IXL .....10½@11
Ne Plus Ultra 9½
Drakes .....8½@9
Chestnuts .....9½@14
Peanuts Cal .....5½@6

Beans Dried.

Limas .....4.15@4.20
Pink .....3.15@3.25
Small white .....5.45@5.50
Large white .....4.40@4.50
Black eyes 3.50
Red Kidneys .....3.75@3.85
Garvanzas 3.00
Bayo 5.25
Horse beans .....2.00@2.10
Cranberry 3.75

Hops.

Hops 1908 crop .....4@7½
Old Crop .....3@4½
1909 crop contracted for at ...9@10½

Honey.

White comb .....11@12½
Light Amber .....9@10
Exracted W W .....7@8
Extracted light amber .....6@7
Beeswax No 1 per lb .....28@30
Beeswax No 2 per lb .....23@25

Hay.

Scott & Magner say under date of April 24: The first car of new hay arrived on the market this morning, and created considerable discussion and attention. Although we have been receiving new alfalfa the last week, still this was the first car of grain hay to come in, and start the movement of the new season's crop. Advices that are received of several thousands tons of new hay that will probably be rushed into market during the next few weeks have practically stopped all tendency to buy, excepting from those who must actually have forage from day to day.

The better grades and choice hay sell readily at quotations below. Quite a feature of the markets for the last two or three weeks has been the arrival of hay from Washington, Arizona, and outlying districts, anxious to take advantage of the extremely high prices prevailing here. With the drop in prices consequent upon the arrival in large quantities of the new crop, these outside shipments must necessarily be discontinued.

The general prospect is apparently of a sudden change in the situation, with early arrivals of the new crop in large quantities. The general impression is that prices will drop back to normal conditions, at several dollars a ton under the present market within the next few weeks.

Choice wheat hay .....23.00@25.00
No 1 wheat or wheat & oat 20.00@23.00
No 2 wheat or wheat & oat 17.00@20.00
Choice tame oat .....21.00@23.00
Other tame oat .....18.00@21.00
Wild oat .....15.00@19.00
Stock hay .....7.00@10.00
Alaflfa .....13.00@17.00
Straw .....60@80

Grains.

Wheat No 1 .....2.10@2.15
Barley .....1.52½@1.62½
Barley common to fair .....1.45@1.55
Oats white .....2.15@2.25
Oats gray .....2.05@2.15
Rye new crop .....1.80@1.85
Corn Egyptain .....1.60@1.65
Alfalfa seed, Cal .....16@19
Alfalfa seed, Utah .....18@19
Mustard yellow .....5¾@6
Millet .....3@3½
Broom corn seed per ton 23.50

Feed Stuff.

Bran per ton .....29.00@30.00
Feed cornmeal per ton ....37.00@38.00
Cracked corn per ton .....38.00@39.00
Rolled barley per ton ....32.00@33.00
Rolled oats per ton .....42.00@43.00
Oil cake meal per ton .....38.50@40.00
Cocoanut cake per ton .....25.00@26.00
Middlings .....33.00@35.00
Shorts .....31.00@32.50

Citrus Market

LOS ANGELES, Cal., April 28, 1909.

The output of navels is rapidly diminishing and the heavy shipments have caused a material easiness of the market. As several of the heavy packing houses are finishing on navels, it is thought the few remaining will close the season at fair prices. Seedlings and seeds have also shaded slightly and, while this is disappointing to the growers, prices cannot be said to have taken a very heavy slump.

In lemons a satisfactory price pre-

Cream Separators, all sizes, all prices. O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

For Mehring Foot-Power Milking Machines see O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles,

vails and the market is firm. Receipts of foreigns are fairly heavy.

Shipments.

The shipments of oranges since Nov. 1, aggregate 18,148, lemons 2,595; a total citrus shipment of 20,743. Last year at same date oranges 16,840, lemons 2,127, or a total of 18,977.

NEW YORK, April 26.—Sixty-three carloads of oranges and three carloads of lemons sold. Market is very steady on sound stock, but easier on poor and over-ripe stock. Market firm on good stock lemons but poor grades sold off. Weather clear and cool.

NAVELS—	Average.
Anemone, Cal Cit Union	2.55
Alta Cresta AH Exchange	3.00
Robusta do	2.75
Iris DM Exchange	2.80
Violet do	2.55
Sweetheart AF Exchange	3.05
Victoria AH Exchange	2.90
La Mesa Riv Ft Exchange	2.65
Uncle Sam do	2.75
Fiesta do	2.60
Sweetheart AF Exchange	2.75
Eagle do	2.65
Pointer ACG Exchange	2.70
La Mesa Riv Ft Ex	2.40
Golden Rule do	2.45
Golden do	2.10
Violet DM Exchange	2.60
Pointer ACG Exchange	2.20
Hunter do	1.90
Alta Cresta AH Exchange	3.15
Robusta do	2.90
Hobo do	2.25
La Mesa Riv Exchange	2.70
S. S. Brand Stewart Ft Co	1.70
Niagara do	2.25
Old Mission C C Chapman	2.95
Golden Eagle do	2.20
Uplander Growers' Ft Co	2.55
W Highland Cleghorn Bros	2.45
Our Beauty Lamanda O and L	2.20
Old Mission C C Chapman	2.50
Golden Eagle do	1.85
A-One E Peycke Co	2.50
Aurora do	2.40
Crafton Red GO Assn	2.65
E Highland A E High CFA	2.60
Golden Orchard Ind	2.80
Citrus Belle Ind Ft Co	2.45
Blue Mtn P & McKevitt	1.85
Blue Banner Sutherland Ft Co	3.10
Native do	2.75
Cerrito L V W Brown	3.20
Swastika do	2.80
Signet OG Cash Assn	2.20
Colonel do	2.10
Golden Scepter Rialto O Co	1.85
Golden Scepter do	2.05
Fountain Speich & Co	2.25
Success do	1.85
Elephant OG Cash Assn	2.95
Plain Ends do	2.30
Elephant do	2.85
Plain Ends do	2.30
Rose Red OG Assn	2.65
Standard do	2.90
Standard do	3.20
Standard do	2.65
Gold Buckle RH Ft Ex	2.55
Lochinvar do	2.35
Blue Globe Riv Ft Ex	2.85
MEDITERRANEAN SWEETS—	
Titus Ranch San Marino GPA	2.75
El Toreador do	2.35
Eagle AF Ex	2.20
SEEDLINGS—	
W Highland Cleghorn Bros	2.25
Iris DM Ex	2.75
Sweetheart AF Ex	2.40
Pointer ACG Ex	2.10

PITTSBURG, April 26.—Seventeen cars sold. Market is firm on good stock.

NAVELS—	Average.
Orchard National Orange Co	2.90
Our Beauty La Manda O & L A	2.40
Coyote OK Ex	1.60
Morning Glory S Ex N Pomona	2.50
Uncle Sam Rev Ex Pachappa Sta	2.80
Scroll do	2.20
Sweetheart AF Ex Highgrove	2.60
Dan Patch AF Ex Bloomington	2.15
Pond Lily Riv Ex Pachappa Sta	2.30
Bridal Wreath RH Ex Redlands	2.15
Standard National Orange Co	2.60
Aurora E Peycke Co	2.50
Blue Mountain P & McKevitt	2.25
Greyhound SA Ex N Pomona	2.55
Coyote OK Ex	1.75
Pond Lily Rix Ex Pachappa Sta	2.40
Owl OK Ex	2.20
Eagle AF Ex Highgrove	2.00
Fiesta Riv Ex Pachappa Sta	2.30
Scroll do	2.05
SEEDLINGS—	
Titus Ranch San Marino GPA	2.05
MANDARINS (Halves)—	
Greyhound	.95
TANGERINES (Halves)—	
Greyhound	1.25
GRAPEFRUIT—	
Dan Patch	3.00
LEMONS—	
Sandal Maker ST Ex S Barbara	1.95
Don Strachan Ft Co	2.00

CLEVELAND, April 26.—Weather cool. Market is firm on good fruit. Nine cars sold.

NAVELS—	Average.
Puritan SB Ex Rialto	2.00
Cosmos SB Ex Yerkes Spur	2.25
Lochinvar RH Ex E Highlands	2.45
Canna SB Ex Yerkes Spur	1.90
Highgrove Riv Ex Highgrove	2.35
Flamingo Cal Cit Union	2.35
Morning Glory SA Ex No Pomona	2.40
Quail OK Exchange	1.90
Corcus SB Ex Yerkes Spur	2.30
Sugar Loaf Riv Ex Highgrove	2.35
Sombrero MO Dis	1.75
SEEDLESS GRAPEFRUIT—	
Crocus	2.80

ST. LOUIS, April 26.—Weather favorable. The market is weak on large sizes. Nine cars sold.

NAVELS—	Average.
Honest Pack Tustin Packing Co	2.10
Tallyho SB Ex Rialto	2.00
Belt RH Ex E Highlands	2.35
Fiesta Riv Ex aPchappa Sta	2.85
Greyhound SA Ex N Pomona	2.30
Lucky Tustin Packing Co	1.80
Tallyho SB Ex Rialto	2.15
Uncle Sam Riv Ex Pachappa Sta	2.55
Volunteer SA Ex N Pomona	2.55
SWEETS—	
Robin Spence	2.20
Pickaninny	1.75
Honest Pack Tustin Packing Co	1.30
Lucky	1.25
BLOODS—	
Tallyho Ruby	2.30
Tallyho Ruby (half boxes)	.75
BUDDED—	
Fiesta Riv Ex	2.05
Standard	1.60
LEMONS—	
Arab SA Ex San Dimas	2.10
Duck	1.75

PHILADELPHIA, April 26.—Thirteen cars Navels and eight mixed cars sold. Weather is favorable. Market firm on good stock.

NAVELS—	Average.
Cluster SA Ex Pomona	2.10
Bridal Wreath RH Ex Redlands	1.85
Riverside Riv Ex Riverside	2.05
Blue Jay OK Ex	1.65
Cosmos SB Ex Yerkes S.	2.55
Highgrove Riv Ex Highgrove	2.50
Lark OK Ex	2.35
Greyhound SA Ex N Pomona	1.95
Native Sons King Ft Co	2.45
Salt Lake do	2.55
Blue Mountain P & McKevitt	2.50
Rialto Girl Growers' Ft Co	2.25
Clover Red O Assn	2.20
Independent Growers Ft Co	1.65
Pointer ACG Ex Glendora	3.45
Humming Bird Riv Ex Riverside	2.15

BOSTON, April 26.—Thirty-one cars sold. Weather cool, cloudy. Market continues strong.

NAVELS—	Average.
Coyote OK Ex	2.45
Quail do	2.70
Corona Beauty QC Ex Corona	2.65
Martha Washington Riv Ex Riv	2.70
Quail OK Ex	2.20
Highgrove, Riv Ex Highgrove	2.50
Lily QC Ex Corona	2.70
Tunnel ST Ex Fernando	2.30
Lochinvar RH Ex E Highland	2.60
Alta Cresta AH Ex Pachappa	3.40
Extra Choice S Ex Rossmoyne	2.50
Orchard National O Co	3.15
Elephant OG Cash Assn	2.85
Standard National O Co	2.65
Mutual Red M O Co	2.45
Alpha Riv Ft Co	2.45
Elk Riverside Ft Ex	2.40
Golden Scepter Rialto O Co	2.25
California Beauty	2.15
Quail OK Ex	2.55
Pride of Corona QC Ex Corona	2.70
Pansy Colton OG Assn	2.20
Partridge Cal Cit Union	2.10
SEEDLINGS—	
Titus Ranch San Marino GPA	2.10
Extra Choice ST Ex Ross (budded)	2.45
MANDARIN (Halves)—	
Pride of Corona	1.15
TANGERINES—	
Bear	1.35
BLOODS—	
Extra Choice Malta	2.60
FIVE Cultivator 13 ems non 9AL	
BLOODS (Halves)—	
Sugarloaf	1.35
NAVELS (Halves)—	
Tallyho	1.05
LEMONS—	

Pet SA San Dimas $2.80; Greyhound $2.35; Duck $2.35; Quail OK Ex $2.70; Coyote $2.30; Rialto Girl Growers' Ft Co $2.25; Choice $1.65.

CINCINNATI, April 26.—Weather favorable. Market steady on navels, advancing on lemons. Three cars navels, one car seedlings and two cars lemons sold.

NAVELS—	Average.
Big R SB Ex Rialto	2.00
SEEDLINGS—	
Selected N W Blanchard	2.30
Stock Label	1.70
LEMONS—	
Old Oak Tustin Packing Co	1.45
Arab SA Ex San Dimas	2.90
Hibiscus Sweetwater Ft Co Bonita	2.25

TEN THOUSAND CHICKS IN ONE HATCH.

The Pioneer Hatchery expects to have 10,000 White Leghorn chicks ready for shipment May 5th. The Pioneer folks are amongst the largest dealers in baby chicks in the country. They ship chicks to all points in California and Arizona. You ought to have one of their catalogues. It is sent free. Address Pioneer Hatchery, Los Angeles, Cal.

Eastern Excursions

From all Southern Pacific Stations in California tickets will be sold to the following destinations at rates and on dates named (subject to change):

Atchison, Kan.	$ 60.00
Baltimore, Md.	107.50
Boston, Mass.	110.50
Chicago, Ill.	72.50
Colorado Springs, Colo.	55.00
Denver, Colo.	55.00
Duluth, Minn.	79.50
Houston, Tex.	60.00
Kansas City, Mo.	60.00
Leavenworth, Kan.	60.00
Memphis, Tenn.	67.50
Mineola, Tex.	60.00
Minneapolis Minn.	73.50
Montreal, Quebec	108.50
New Orleans, La.	67.50
New York, N. Y.	108.50
Omaha, Neb.	60.00
Philadelphia, Pa.	108.50
Pueblo, Colo.	55.00
St. Joseph, Mo.	60.00
St. Louis, Mo.	67.50
St. Paul, Minn.	73.50
Toronto, Ontario	95.70
Washington, D. C.	107.50

DATES OF SALE

To Colorado points—May 15, 16, 17, 18, June 27 to July 6 inclusive, August 9 to 14 inclusive.

To all other points—May 15, 16, 20, 21, 22, 31 June 1 to 4 inclusive, 14 to 19 inclusive, 25, 26, and 27, July 1 to 7 inclusive, August 9 to 13 inclusive, September 7 to 10 inclusive, 13, 14, 15.

Return Limit—For May, June and July sales, three months after day of sale. For August and September sales, October 31, 1909.

FOR VARIOUS NATIONAL CONVENTIONS TICKETS WILL BE SOLD AS FOLLOWS.

ST. LOUIS, MO.—Royal Arcanum Supreme Council. Sell May 15, 16, 20, 21, 22. Rate, $67.50.

DENVER, COLO.—Presbyterian General Assembly. Sell May 15 to 18. Rate, $55.00.

HARRISONBURG, VA.—German Baptist Brethren. Sell May 20, 21, 22. Rate, $97.90.

ATLANTIC CITY, N. J.—American Medical Association. Sell May 31 to June 4. Rate, $100.90.

LOUISVILLE, KY.—Mystic Shrine Imperial Council. Sell May 31 to June 4. Rate, $78.05.

CINCINNATI, O.—North American Gymnastic Union. Sell June 14 and 15. Rate, $79.50.

DENVER, COLO.—National Educational Association. Sell June 27 to July 6. Rate, $55.00.

ST. PAUL, MINN.—Christian Endeavor. Sell June 24 to 27, June 29, July 1 to 7. Rate, $73.50.

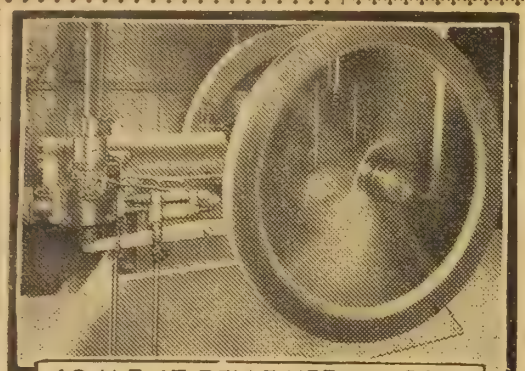
MINNEAPOLIS, MINN.—Y. P. C. U. Universalist. Sell July 1 to 7. Rate, $73.50.

Return Limit Three Months

SOUTHERN PACIFIC

600 S. Spring Street, Cor. Sixth

Arcade Sta. 5th St. & Central Ave., Los Angeles



40 H.P. AT BELLE-VERNON DAIRY
DRIVING REFRIGERATING MACHINERY
DYNAMO AND ALL MACHINES

You Don't Know

What Gas Engine Satisfaction Means Unless You Have Used a

WESTERN

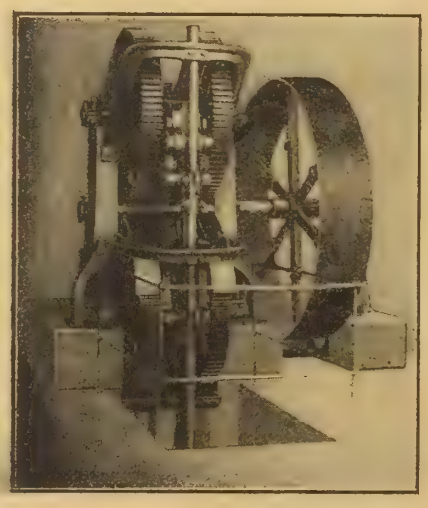
We have no sliding scale of quality. The changes that have been made in the design, material and construction of our engines have all been in one direction—that of producing the highest possible ***efficiency, economy*** and ***endurance,*** for the lowest possible cost.

Ask the users of ***Western*** engines if we have succeeded.

Western Gas Engine Company

Northern Branch: San Francisco, Cal. **Los Angeles, California**

The Smooth Running, Noiseless Pomona Deep Well Pump



It is thirty to fifty per cent more efficient than any centrifugal pump ever made. No high speed bearings to cut out. All breakages and rod troubles eliminated.

This is the only pump you can afford to buy if you consider your own interests. Hundreds of satisfied users testify to this.

Used by the best water companies who know what a good pump is.

Send for a catalog or what is better come to POMONA and let us show you some of these plants in operation.

POMONA MANUFACTURING CO.
POMONA, CALIFORNIA

THE
Latest Deep Well Turbine Pump

Guaranteed to deliver from 100 gallons per minute upwards, depending on the diameter and capacity of well, from a depth of 50 to 300 feet below the surface. Can be either belt driven or direct connected to electric motor as occasion requires.

Write for Catalogue 46B.

A deep well pump that has no valves or plungers to wear or get out of order, no gears, consequently no noise or breaking of teeth.

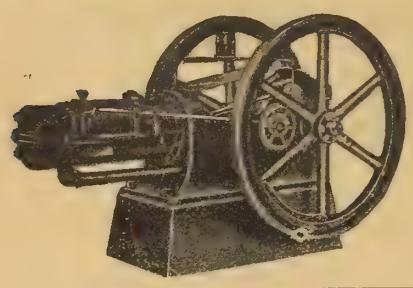
Compact, durable, always primed and ready to operate, constant flow, hence increased capacity of well.

This type of pump is fast taking the place of Vertical Steam. Deep well Plunger and Propeller Pumps.

Byron Jackson Iron Works

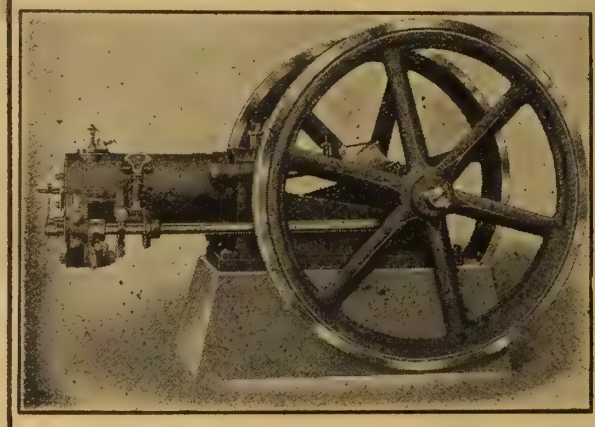
Main Office and Works:
Carlton Station
West Berkeley, Cal.

Commercial Gas Engines Pump More Water



a given height with one gallon of No. 2 distillate than our competitors. Send for Bulletin No. 12 and see how we do it.

Commercial Engine Co.
953-955 No. Main St. Los Angeles, Cal.



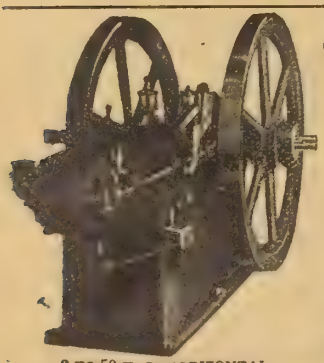
DOAK GAS ENGINES

Simplest and most economical. Use Gas, Gasoline or Distillate.

Stationary, Portable Hoisting and Marine

All sizes from 3 H. P. to 50 H. P. carried in stock.
Write for our catalogue "C".

Doak Gas Engine Co.
7-9 First St.
San Francisco

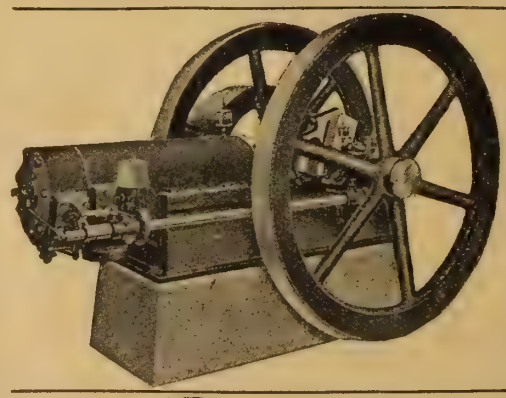


2 TO 50 H. P. HORIZONTAL

STOVER GAS ENGINES

The simplest and the best. We have had long experience installing pumping plants. We know our business. See us before you buy. 2 to 50 H. P.

LIVINGSTON & LEE
352 So. Los Angeles St., Los Angeles, Cal.



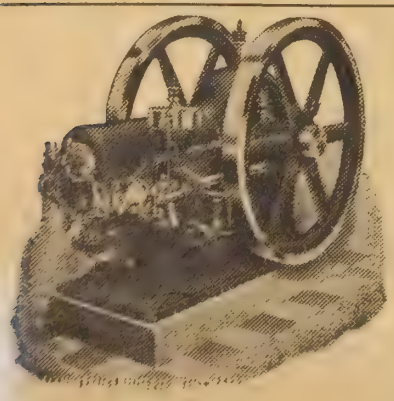
HERCULES
Distillate Engine

Heavy, strong and simple in construction

The Right Engine at the Right Price

Horizontal and Vertical; all sizes. Buy direct from the manufacturer and save the agent's commission. Send for our new Catalogue C.

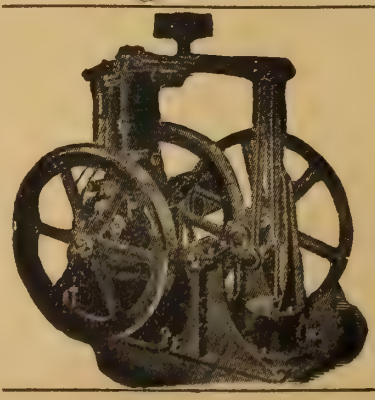
The Hercules Gas Engine Works
351 Market St., San Francisco
Telephone Douglas 3630



Another New Gas Engine

Is amongst us and if you are in need of power you should investigate this one. You will find that it possesses the most desirable features of all the old timers and the price is right. Plenty of catalogues for distribution.

Henshaw-Bulkley & Co.
262-264 So. Los Angeles St., Los Angeles



A Handy Little Engine

Just the thing to run the feed cutter, the pump, the churn, the grinder, or anything on the ranch. It's well named

The Little Wonder

Write or call on

Wm. Gregory
602 No. Main St. Los Angeles, Cal.

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California Cultivator

Published Weekly — One Dollar a Year

Los Angeles — May 6, 1909 — San Francisco

"Our Friends the Trees"

From an Address Made at Riverside by
Enos A. Mills of the Forest Service

"NO NATION has ever fallen for having too many trees. But scores of lands have been depopulated and brought to ruin through forest destruction. Most of the great nations of the past have been rich in natural resources, but the one resource most useful to and most used by every nation that built itself to greatness was the forest. The forest is a producer of wood—one of the most useful of materials. The forest is not only a resource within itself but it maintains numerous influences, which enable us better to master and manage the air, the waters and the soil so that these will render us the greatest service and do us the least damage.

"Prof. L. G. Carpenter, probably the world's greatest irrigation engineer, says that forests are absolutely necessary for the interests of irrigated agriculture. Among the many helpful influences of the forest the most important one to the people of Southern California is its water-saving influence. The forest greatly checks the evaporation of water. In this locality the winds have the ability, the capacity to annually evaporate more water than annually falls. Can you realize that on your almost treeless foothills that as high as 80 per cent of the annual precipitation is evaporated by the winds and lost.

"Western winds are extra dry. They are insatiable. The air is constantly absorbing water and the more free movement of the air, the more water it absorbs. A washerwoman places her clothes in the wind in order to dry them quickly. It will be necessary for you to keep the wind away from the water if you want the water yourself. In an open country from 5 to 10 times as much water is evaporated and lost as is evaporated and lost within a forest. The air rests upon the earth and is a thick, invisible blotter that is constantly absorbing water wherever it comes in contact with it. Those areas of the earth, those hills and mountains which lie open and exposed to sun and wind, are most quickly and completely robbed of their moisture. The forest is a shelter, a windbreak. It is ever present, ever defending waters from the wind. So if you want to save the greater portion of the water which nature supplies it would be well to maintain forests upon your water sheds. Is there any better protection for the water supply than the protection which you can give by thoroughly covering your hills and mountains with forests or chaparral?

"Your own John Muir probably is the greatest authority concerning the relation of forest to stream flow and he says that cut down the forests and streams will vanish. The experiences of China, Spain, Greece and Syria, and that of other lands are grim evidence of the fact that forest destruction on a large scale will lead to waterless river channels. At one time millions of acres of land in the countries just mentioned were productive agricultural lands. These lands were watered with streams which rose in forest-covered hills and mountains. The forests were destroyed, the streams vanished and the desert came.

"So great is the influence of the forest in saving the water which the clouds deposit upon the earth that there are numerous instances where a forestation has actually created springs and streams.

"Better forested watersheds would swell and sustain your streams, and give you a larger and more constant supply of water. Water is your greatest resource.

"Forested watersheds will render you another important service. Most of the water which you use for irrigation purposes falls to the earth months before you are ready to use it. Hence it is important to have this water runoff delayed. This is just what the forests will do. Trash accumulates in the forest, but this trash will also cover the ground and keep it loose open and porous, so that the ground will quickly absorb water. Hence this accumulation of trash, which the forest provides, together with the countless tree roots which penetrate and perforate the earth, literally conducts much of the water quickly into the earth where it cannot be evaporated. Once the water is into the earth it must seep slowly away. Its passage through the earth being slow, its runoff is thus delayed."

ONE USE FOR A PICKET FENCE

TRUE Sharples MARK 29 Yrs

THIS picture shows how one woman used her picket fence to dry the disks from her "bucket bowl" cream separator. She realized the need for using a separator and the work of thoroughly washing a half bushel of disks twice a day, but she did **not** know that the simple Sharples Dairy Tubular would have **saved** her that work and given **better** service, or she **never** would have let her husband buy a disk machine.

The simple, light Sharples Dairy Tubular bowl is easily washed clean in 3 minutes. A few thrusts of the brush does it. Better than spending 15 to 30 minutes washing a "bucket bowl."

Two Wrongs Don't Make a Right

"Bucket bowl" manufacturers are **wrong,** in the first place, in using wide mouth, squatty, "bucket bowls" fed through the top. That kind of bowl is **not** modern. They are **wrong,** again, in filling their bowls with disks or other contraptions, for such parts do not make a steady, simple, light, easy to clean, durable bowl. These two **wrongs** don't make "bucket bowl" separators **desirable** or **right.**

The **only modern** bowl is the light, slender, simple Dairy Tubular bowl, hung below its bearing and fed through the lower end. Our patents prevent imitation, so others still make "bucket bowls" out of date years ago.

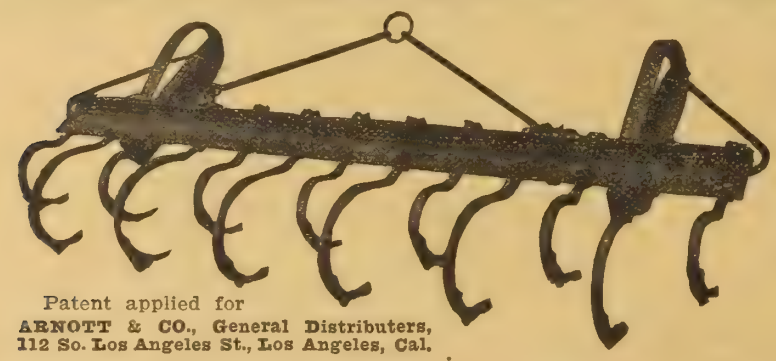
Anyone can build disk separators cheap, and build them like the "old original" disk machine. The maker of this "old original" is advertising a suit against a catalog house machine that has been built like his for a number of years. Has he just discovered that other disk machines are like his? Or has he discovered what is still worse for him—that farmers who want to try a disk machine are buying cheap ones, so they won't lose so much when they replace them with Tubulars?

Disgusted farmers are trading in to us, for Tubulars, car loads of "bucket bowl" separators—new as well as old. Not a pleasant experience for them. **Avoid** it by getting a Tubular. Tubulars are made in the world's greatest separator factory. Branch factories in Canada and Germany. 1908 sales way ahead of 1907—out of sight of most, if not all, competitors combined. 1909 better yet. Get catalog No. 260.

The Sharples Separator Co.

Toronto, Can. **West Chester, Penna.** Portland, Ore.
Winnipeg, Can. Chicago, Ills. San Francisco, Cal.

WILLIAMS' GOOSE-NECK CULTIVATOR



Patent applied for
ARNOTT & CO., General Distributers,
112 So. Los Angeles St., Los Angeles, Cal.

Especially adapted for citrus orchards. Sizes 7 to 14 ft. Lightest draft. Write today

The following is a sample of the unsolicited testimonials received regarding the Williams Goose-Neck Cultivator:

Merle, San Diego County, Cal., March 25, 1909.

Arnott & Company,
Los Angeles, California.

Dear Sirs:—You may recall that I recently purchased one of your Williams Goose-Neck Cultivators. I wish to say that I am exceedingly well pleased with it. In fact, as I told Mr. Jones, your representative in Oceanside, I would not take $500.00 for it if I could not get another. This is not an exaggerated statement, I mean it literally. In this section we do not have irrigation and everything depends on proper cultivation, so that good tools are very important. There are three points in which the Williams Goose-Neck Cultivator surpasses all other cultivators which I have seen, viz:

First. The draft is very light. My two horses weigh 900 lbs. each and they have no difficulty in drawing the 7 ft. cultivator.

Second. The Williams Goose-Neck Cultivator stirs the soil well without exposing the subsurface, thus preventing the escape of moisture.

Third. The cultivator being of low construction, one can cultivate under the trees as easily as harrow.

I was showing my cultivator to a neighbor the other day and had him take it home to try it. The use of it for half an hour so thoroughly convinced him of the merits of the tool that he has, through Mr. Jones of Oceanside, given you an order for one-half dozen cultivators.

Messrs. Williams & Son of Orange certainly deserve great credit for inventing the Goose-Neck Cultivator.

Sincerely yours

LOUIS C. LUHR.

WILLIAMS & SON, Mfrs., Orange, California

Olds Complete Power Spraying Outfit

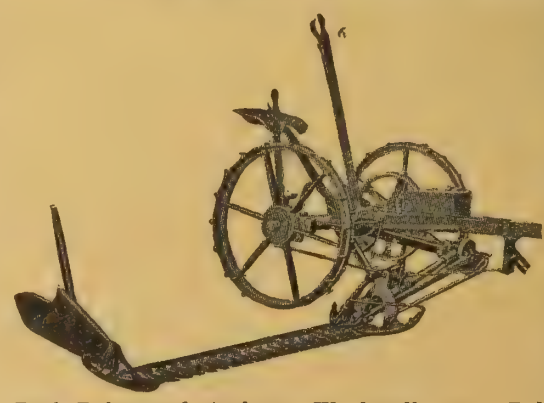
Equipped with their air-cooled engine, which is a great advantage, making it much lighter and easier to operate. Send for circular and Price List 6802 to

The Compressed Air Machinery Company

Dealers in all Kinds of Machinery
34 to 40 Jessie St., San Francisco

The Plano Line

Of Haying and Harvesting Machinery

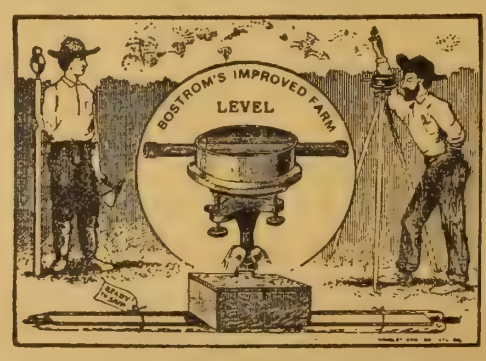


is one of the leading lines on the market. The Plano Mower has a number of improvements not found on other leading machines. All we ask is a chance to show up our line and then let you judge for yourself as to the quality compared with others.

We are Headquarters for Haying and Harvesting Machinery. We sell the Plano line of Mowers, Rakes, Binders, Headers, Harvesters and The Eagle Hay Press. The Columbia Ann Arbor Power Press. Our Famous Triumph Push Rakes and stackers. We handle more Bale Ties than any three of our Competitors.

L. M. Davenport Co.

110-112 No. Los Angeles St., Los Angeles



BOSTROM'S IMPROVED FARM LEVEL

Used for irrigation and drainage work. Cheapest and best level yet invented for farm use. Has the latest patented improvements in simplicity and usefulness. Can be operated by any one. Price including telescope tripod and target rod $15.00.

PALACE HARDWARE COMPANY
581 Market Street, San Francisco,
Coast Agents. Send for Circular.

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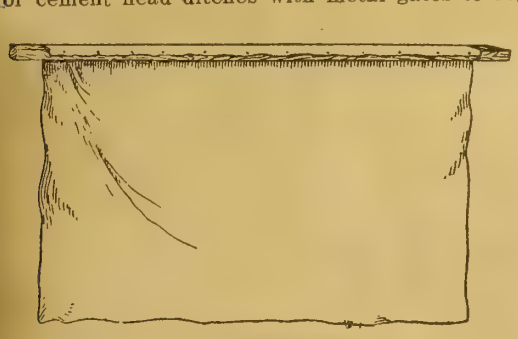
California Cultivator

Vol. XXXII—No. 18 Los Angeles, California, Thursday, May 6, 1909 Subscription $1 a Year

Practical Irrigation by Practical Men

A Series of Letters from Orchard Irrigators which are Filled with a Fund of Information

IT HAS been claimed and is probably true that California has reduced the handling of water in irrigation the nearest to a science of any section in the world. This has been true in part because of the returns given for intelligent handling of water have been such that it has brought some of the brightest men of the country to this state to aid in solving its agricultural problems; also in part because of scarcity and high price of water. The time was, but a few years ago, when orchardists turned into small furrows large heads of water which escaped with much of the soil and fertilizer at the lower end and often running down the street or "wash." Such cases are seldom seen now. In some sections, however, where water is still plentiful in proportion to the amount of land which it covers, it is conducted over sandy wastes in open canals, losing sometimes over half of its original quantity by seepage. In the southern end of the state, however, the land has been settled so thickly that the water is fully appropriated and used and the cry already is "How may we secure more water?" There, as a rule, water is conducted in buried pipes or in open cement lined ditches. Then orchards, as a rule, are provided with pipe or cement head ditches with metal gates to regulate the flow into the orchard furrow under perfect control of the irrigator. This control is usually so complete that not a drop escapes from the lower ends of the furrows.



The cloth dam.

Convenient in soft dirt head ditch where it is desired to let part of water escape, also when necessary to change course of water.

Wishing the most reliable information as to the method followed in handling this water in the orchard, the Cultivator recently sent a number of subscribers a series of questions asking methods of work. The questions were as follows:

1. Do you irrigate by the furrow or the basin system?
2. If furrow, do you believe in the deep or shallow furrow?
3. Have you ever used a sub-soiler to loosen soil to allow of better penetration?
4. How deep do you consider it necessary to have the soil saturated? How long is it necessary for the water to run in order to give thorough saturation? What is the nature of your soil and have you ever investigated as to how deep the water penetrates after the usual run?
5. What length should the furrows be on ordinarily level land to get best and most even depth of saturation?
6. If furrow system, how do you handle the waste water, or rather how do you prevent wasting of the water at the lower end and do you feel that your lower trees receive sufficient quantity compared with the upper end?
7. If a basin system is used how do you handle the soil? Do you find more difficulty in reducing to a perfect mulch than by furrows?
8. How soon after irrigation do you do your first cultivating, and what are the methods and implements employed?
9. Do you follow within a day or two with other cultivation or disking and do you finally leave the soil as cultivated, or do you "smooth?"
10. After the final cultivation, do you cultivate again before the next irrigation?
11. How long before the next irrigation, or how many times during the season do you irrigate?

In reply to the above questions we have the following:

Some of the writers reply by using the question number, and others treating it in a more conversational way. The answers are so plain and give methods in different sections of the state in a way which calls for no further comment.

* * *

Charles C. Chapman, Fullerton, Orange County.

1. By the furrow system.
2. In deep furrow.
3. I have.
4. Three or four feet. The length of time necessary for the water to run depends very largely upon the character of the soil. Light soil water will penetrate more quickly. I have various kinds of soil. As the season advances the water does not penetrate as deep as it does early in the season.
5. Four hundred to five hundred feet, although I use some over six hundred feet.
6. Some places I use the basins around the last three rows to hold waste water. Other places I am able to carry it on into the walnut orchard.
7. We use a lister to break down ridges followed by a spring tooth harrow. We are able to reduce these to a mulch as thoroughly as by the furrow system.
8. It depends upon the character of the soil. From two to four days. We first use a spring tooth harrow, afterwards a cultivator.
9. Follow with cultivator within a few days. We find the disk a valuable implement. We do not make any special effort to make the soil "smooth."
10. Yes.
11. From six to ten or eleven weeks. Three and four times.

* * *

A. G. Schulz, Porterville, Tulare County.

All of our irrigation here is done on the furrow system, and as a general thing I believe everyone here is in favor of deep furrowing, we want to get the water down to the roots.

A few years ago quite a few orchardists in this section used sub-soilers, but lately there has been no sub-soiling done here. Why the practice has been discontinued I do not know. Personally I have never used a sub-soiler, as I was afraid of injuring the root too much.

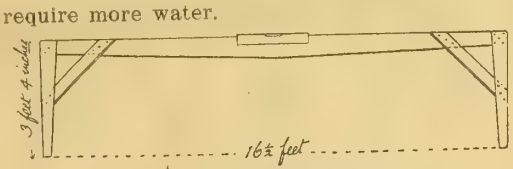
We try to furrow at different depths for each irrigation, using a shallow furrow earlier in the season, and working deeper as the season advances. In this way we think that we can prevent a plow-sole from forming, and get our water deeper into the soil when it is needed there.

The only soil that I have had any experience with is adobe, and the best results are obtained when water is run in furrows not over 300 feet in length, for the distance, if the land is comparatively level it will take about three days to saturate the soil in good shape. I have never investigated how deep the water will eventually penetrate, but it will reach quite a little below the bottom of the furrow by the time the water is shut off.

We generally use inch outlets for each furrow, and open them to about one-third at the beginning of the irrigation, as the water advances we increase the flow, until when the end of the furrow is reached we generally use the full flow of the opening, and hold it there for a short time by banking it back, but if the water has been handled carefully we find that this is not necessary, as by this time the land will all be quite well saturated.

It depends of course on the season of the year, how soon after the water is turned off before we begin to cultivate, on an average I should say about the third day, at any rate as soon as the soil can be worked without clodding. I generally first close the furrows with a revolving harrow, and then follow with a chisel-tooth cultivator, then follow this again with the revolving harrow in order to smooth the land better, and keep the water from evaporating.

In the older orchards we find that four irrigations are generally enough, but the younger trees require more water.



Homemade leveling device.

If the variation in a level constructed as above is ⅛ inch, that indicates 4 ft. fall per mile. ¼ inch indicates 6 ft.; 5-16 inch 8 ft. and ⅜ inch 10 ft. per mile. It is a handy tool for the irrigator.

* * *

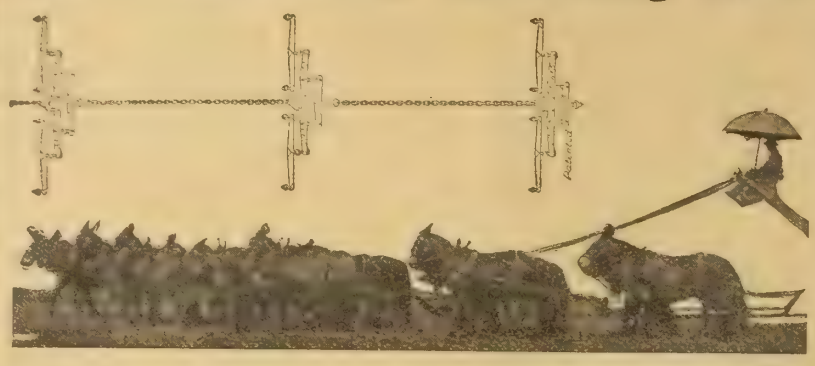
R. C. Allen Bonita, San Diego County.

I will take up the questions in order:

1. Furrow System.
2. Deep furrows.
3. Have used subsoiler at times to break up plow sole, but only as occasion seemed to require it—never as a regular part of irrigation system.
4. Soil should be saturated well below the root system of the trees—at least three or four feet. The length of time necessary to accomplish this will depend on kind of soil and the state of tilth. Our soil is mainly red mesa land with clay subsoil—part is black adobe mesa soil. There are great variations in soil and we have to adapt our methods to the differing conditions.
5. About 400 feet.
6. We irrigate from a pressure system with water always at command. We allow just such a stream to run as will reach the lower end of the furrow and block it off to hold it back. We keep this stream running for four or five days or until the soil appears to be thoroughly saturated. We feel, however, that the lower half of the furrow does not receive as satisfactory an irrigation as the upper.
8. As soon as the soil will cultivate into a mealy consistency. We use ordinarily a four horse Monarch cultivator, leaving the soil as cultivated. Our trees are planted in triangles and we go over the orchard three ways.
10. We cultivate again midway between irrigations.

(Continued on Page 536.)

The Schandoney Equalizing Hitch



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Supervisors of Glenn county have appointed M. Jenson live stock inspector.

With the Citrus Growers

DISPOSING OF OUR ORANGES.

THE Riverside People are always up-to-date in things pertaining to the orange and its growing and marketing. One of the steps of maintaining that position which they have taken during the past season has been a course of lectures given at the Y. M. C. A. rooms. At the last one of these meetings an address was delivered by Mr. C. C. Chapman of Fullerton and from it we quote:

"It is one thing to grow the orange, and another thing to market it profitably. The fruit must be presented in a shape to appeal to the buyer. With the transportation facilities that have been provided by the railroads, we ought to be able to do this.

"In Southern California we have some of the finest specimens of citrus fruit grown in the world. Ours is a hardy fruit, and it is plainly up to the shipper to market it properly. The solution of this problem lies in looking after all the details of the process of handling in a sensible manner. Not one step may be slighted without paying the penalty.

"We have reached a point in the system of packing adopted where we don't expect to see many more radical changes made. In fact, there is little that is new that is to be told the growers, and conferences of the kind such as we are enjoying tonight are valuable more particularly for the inspiration that is to be gained than anything else.

"About six years ago there was inaugurated an era of education in the art of handling oranges. As a result, the industry is on as safe, sound and permanent a basis as any other agricultural industry. The most important factor in this development has been the work conducted by Mr. Powell.

"One of his discoveries was the fact that the fruit we produce will, if not mechanically injured, keep for several weeks, enabling us to ship at any season of the year. The difficulty, however, is to prevent the injury of fruit and keep such fruit out of the pack. It is next to impossible to get the class of help that will see to this matter properly, regardless of the fact the growers would gladly pay adequately for it.

"One of the first important points in handling the crop is a familiarity with the orchard. Orchards have their weak spots and the grower should have knowledge of these. Although the best fruit produced in the world, the orange may easily be made a cull. It must have care all along the line. Picking is a trade by itself. The right kind of clippers must be used and they should have careful attention. As the result of the recent experiments, clipper cuts and long stems have practically disappeared.

"A good ladder is essential to good work. It must be light, one on which it is comfortable to work, and it should be long enough to reach above the tree, to guard against injuring the top. In Riverside, where nearly all of the fruit appliances have been invented, a well-nigh perfect ladder is manufactured.

"The picking bags should be of the proper size and kept in good condition. The method employed in emptying the bags into the picking boxes is an important point and should be carefully watched. A regularly prepared picking box only should be used in the field. It is an insult to the trade to offer fruit in a packing box that has been soiled in the orchard.

"With regard to loading and hauling only wagons with springs should be used, and only low wagons should be permitted in the orchard. The fruit should not be allowed to stand long in the sun, as the tendency to decay is thereby greatly augmented.

"The fruit should be watched most closely in the packing house. A cut, punctured or bruised orange is a serious detriment, and it is cheaper to throw it away here than to pay freight on it and have the disgusted buyer pick out the decayed fruit at the other end of the line. It is poor business policy to ship a bruised orange.

"As to shipping, navels should be sent out soon after picking. The Valencia, on the other hand, is in better condition to pack after standing for four or five days. If not damaged Valencias will not decay for months.

"If it is thought necessary to wash fruit, it should be done as soon as it is brought into the house. In my own case, I always use the brusher to brighten up the fruit, but it must be watched carefully to guard against any injury.

"Consistent grading is an important point. I endeavor to grade my fruit so that every car will be as nearly alike in quality as possible. A uniform size is also essential. We should furnish a pack in which the trade will not be disappointed. You can't build up a reputation for a brand unless you have a care with regard to these points.

"Endeavor to secure a good, sound, solid pack without crowding too much fruit into the box.

"Nothing so demoralizes the market as decayed fruit. The precooling of fruit is going to prove one of the most scientific methods of shipping that has ever been tried.

"Lastly, we should observe care in our methods of handling our fruit, not merely because of the returns, but for the satisfaction we can get out of it as well. It is a small man who does not enjoy doing an honest piece of work. It is our privilege to get out of our business, which is the most delightful occupation in the world, a degree of pleasure that is a far more satisfying recompense than the financial returns that follow as a matter of course."

TO MAKE A GOOD CITRUS GROVE.

A Valencia grove at Lindsay having made a wonderful record, inquiry was made of its owner as to methods of fertilization and culture. The owner, Mr. C. O. Cowles replied:

As to fertilizers, up to last year it has had a ton of commercial fertilizers, per acre each year. Last year this was changed to half ton of commercial fertilizer per acre and a dressing of barn yard manure in addition to a cover crop of vetch plowed in the spring. The grove has been plowed well each way, that is, plowed and cross-plowed each spring; irrigated about once a month during the dry season and well cultivated after each irrigation, and has never been fumigated or sprayed, there being no scale or red spider in this district, fumigation and spraying are unnecessary here.

There is likewise no secret in the

pruning this grove has received. Each spring I have removed the dead wood inside the heads of the trees as well as all suckers which may have appeared. I have sent men through the grove three times each summer and had them rub off the suckers which have started while they are still very soft and brittle, leaving very few to be removed at the regular spring pruning.

There is certainly no secret or other method of caring for an orange grove which can compensate for or take the place of the natural condition of the soil, climate and topography so essential to the highest degree of perfection in citrus, and it is to the natural conditions prevailing here to which the greater part of the success of this grove is to be attributed, as is evidenced by the fact that the returns from the grove under discussion are little, if any more than the average received from other Valencia groves of the same age in this district, the returns from some of which having been larger than I received from mine. Briefly the main thing is to locate your grove where the natural conditions are the most favorable, for it is there that care, cultivation, fertilization and judicial management may be made to count for the most, and no amount of these can compensate for the absence of these favorable natural conditions. Where nature has given us proper conditions and environments we can aid her by doing our part, but where these conditions are unfavorable we cannot expect the best results—no matter how hard or how carefully we may try.

BLACK SCALE.

At this season of the year we find on the citrus trees only young black scale. The last eggs were hatched out before November and only the hollow shell of the mothers remain. But on the roots of night-shade, (Solanum douglasii) we find a different state of affairs. This may furnish a ready and constant supply of scale in all orchards not free from this plant. Fumigation will not kill the scale because of their position beneath the surface of the soil, and in no case have I found a scale in the ground parasitized by the Scutellista. They apparently do not attack these root forms, so that control of the Black Scale by this insect is impossible so long as night-shade is allowed to grow under the orange and lemon trees. The farmers have evidently failed to realize the importance of this fact, for night-shade is plentiful in and about every orchard. Even in the best-kept orchards the plants are not uprooted, but cut off near the surface. In such cases new sprouts are continually appearing, furnishing a direct communication between the uninjured scale on the roots and the lower branches of the trees. Thus the scale propagates on the roots regardless of any amount of fumigation and supplies new broods for the orchards, due to the protection of the soil and the breeding continues throughout the winter as well as in the summer.

Not only is Black Scale found on the night-shade, but upon many other plants in the gardens, and especially in the rocky waste places or "washes" near many of the citrus groves. It is to the last condition which I wish to refer and particularly to the Rhus or Sumac which grows abundantly in all of these waste places. One need not examine closely to find Black Scale upon this plant at great distances from the citrus groves and often in great abundance. Sumac should not be allowed to grow near an orchard because it serves as constant breeding places for scale, and it is in one sense useless to fumigate an orchard so surrounded without also fumigating or destroying the Sumac growing near by.—E. O. Essig of Claremont in Journal of Entomology.

BLACK SCALE ON ROOTS OF NIGHT SHADE.

Or, as the bug specialist would say, "Saissetia olea on the roots of Solanum douglasii." Either way it is put the bug on that weed is a bad combination. The grower should get busy and uproot the night shade at once. Read Mr. Essig's article.

State wide crusade against the white fly should be instituted before our orange groves are devastated by this pest. A state commission should be appointed with power to enforce fumigation, and the use of the fungi that feed upon the larvae, and to cut down and utterly destroy every tree and plant in the state that is a source of infection.—Florida Fruit and Produce News.

Tulare county shipment of oranges to date aggregate 748,461 boxes, or about 1949 cars. Valencia and a very few of the navels are yet to go. Last year's total was 3150 cars up to November 1st.

The Riverside Groves & Water Co. has secured a deep well drilling outfit, which will go through granite, with which they hope to secure more satisfactory wells.

The Gregory Fruit Co. will build a raisin seeder at Colton.

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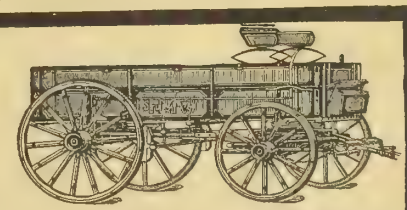

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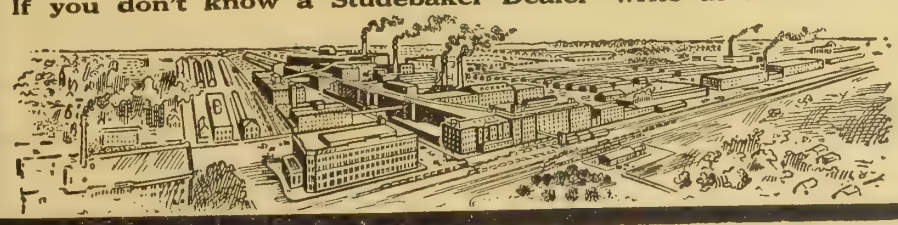

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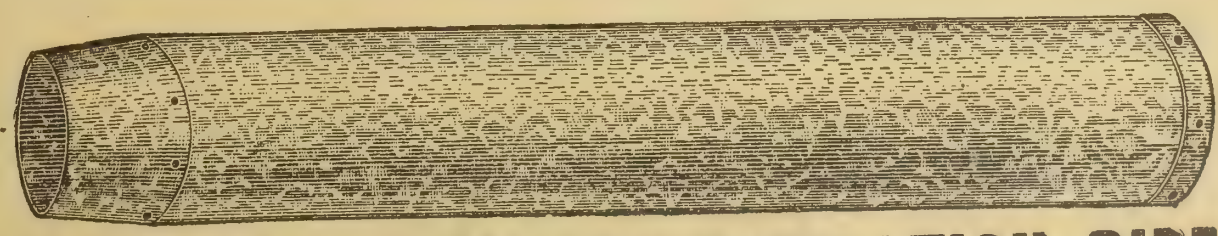

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The Ornamental Garden

THIS MONTH.

THE lawn is susceptible to wonderful improvements at this time of the year and a good dressing of bone dust or superphosphate will prove advantageous. At this time of the year the bermuda grass is doing its meanest and a thorough combing with a sharp garden rake helps to prevent its spread. The cool days of the last two weeks have been exceptionally favorable for starting a new lawn and a better time cannot be chosen. When weather as favorable as this can be had it is very satisfactory to start without mulch dressing which is often desirable, but where no mulch is used over the surface to protect the seeds from the direct rays of the sun, one must use great care to sprinkle lightly two or three times each day and in extra warm weather still oftener.

In the flower garden sow primula, calcoelaria or reset plants which have come from former sowings. Plant chrysanthemums which are now well rooted, also petunia, balsam, zenias, coleous and also plant the amaryllis, agapanthus, dahlia and hollyhock. Canna roots may be divided and reset. Manure the ground heavily and keep the garden thoroughly wet and cultivated.

SALVIAS.

These plants are the most showy bedding flowers in cultivation, a bed of them surpassing the finest scarlet geraniums in brilliancy and continuous bloom. From the time they first begin to flower the plants are never out of bloom until cut down by frost. They are easily grown by following a few simple instructions: Start the seed indoors or in a hotbed early in March. Keep the soil warm and moist until the plants appear, which sometimes requires three weeks. When the second leaves appear transplant so as to stand three inches apart each way set in rich soil three feet apart each way. Keep the soil fine and loose at all times during the growing period. The latter rule may well be applied to growing all varieties of flowers.

Be sure and put the home garden in good shape before planting.

Small Fruits and Vegetables

THIS MONTH.

THIS is one of the best months for pushing the garden and in fact later green stuff for the table depends much upon culture at this time. It must be borne in mind that vegetables growing as they are at this season of the year require a great deal of water. One of the best ways of supplying water for the use of the growing plant is to conserve it, that which is already in the soil, by thorough tillage. Mulching also is most valuable for as the days get longer and the sun stronger it robs much moisture.

Cut worms will be a factor or may be now. In fact some growers have already entered their protests against the work of this little pest. Spray with paris green or arsenic and if the garden is small it may be protected to a certain extent by having furrows with straight sides entirely around it. Use great care to destroy every one which may be found near the roots of the plants. Turn over clods and kill all you find.

For future sow peas, sweetcorn, squash, pumpkins, cucumbers, okra, beets, carrots, lettuce, raddish, turnips, parsley, beans, spinach and in fact nearly all things needed for the summer garden. Cabbage, and tomato plants may be reset, also onions, asparagus, horseradish and rhubarb. After setting the plants, be sure they have an abundance of water to settle the finer particles of soil around the roots. If the setting should be followed by warm weather it may be well to protect from the direct rays of the sun for a few days. If only a few are to be planted, one may well choose the evening or later afternoon. Many feel that this is the preferable time of the day for resetting plants.

TO GROW SWEET POTATO PLANTS.

Prepare a hotbed by using fresh manure from the horse barns. Add about one-third to one-half straw or bedding material and mix thoroughly. This mixture should be packed in the bed to a depth of twelve to eighteen inches. A convenient width for a hotbed is six feet; they can then be made as long as desired. The mixture should then be thoroughly moistened but not made wet; too much water will retard the heating process caused by the fermentation of the manure. Let this mixture stand in the bed for three or four days, by which time it will have reached its highest degree of heat.

At this time the bed should be carefully examined to see that there are no dry spots. The mixture should be kept well moistened. The frames that are to support the covering of the bed should then be placed on top of the bed of manure with the slope of the top to the south. Two or three inches of soil should be spread over the mixture and the sweet potatoes carefully placed on the surface and covered with an additional layer of soil to a depth of two or three inches. Sandy soil is best for this purpose. Keep this soil moist throughout the entire period of plant growth.

The potatoes should be carefully distributed over the bed and no two potatoes should lie against each other, but they need not be more than one-half inch apart.

Potatoes that are more than two and one-half or three inches in diameter should be split lengthwise, and the cut surface placed down in the bed; smaller potatoes may be placed in the bed whole.

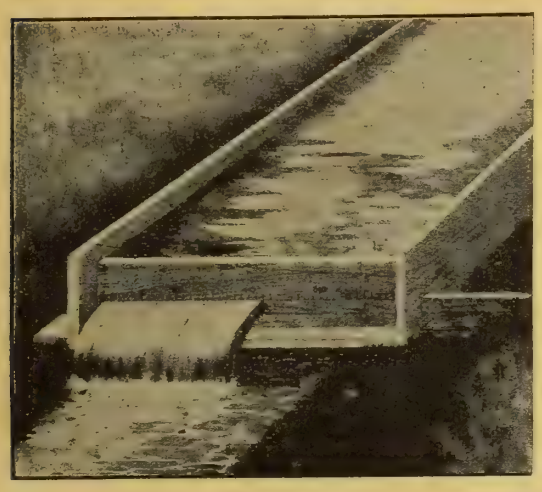
The plants should be placed in the bed about six weeks before the first plants are to be transplanted to the open field. If care is exercised in pulling the plants, a second crop of plants and a third and much lighter crop will be produced about two weeks later, during which time a good bed will produce from 100 to 150 plants per square foot.

The plants should not be placed in the open field until the soil is quite warm and all danger of frost is passed.

Measuring Water

To Measure an Inch.

For that measurement a box should be constructed, at more or less expense, with an opening made variable as to length, by a sliding stop, as shown in the cut of "A Miners' Inch Measuring Box." The lower edge of the aperture shown in the cut should be two inches above the bottom



A Miner's Inch Measuring Box.

of the measuring box and the plank five inches high above the aperture, thus making a six-inch head above the center of the stream. Each square inch of this opening represents a miner's inch, which is equal to a flow of one and one-half cubic feet per minute.

Wier Measurement.

This convenience, however, is seldom at hand, so we also give a cut illustrating the "Wier Dam Measurement," which is so simple that any one may construct and get at least a general idea of the amount of water flowing in a stream.

The miner's inch here is usually figured on the basis of four-inch pressure.

The wier should be so placed that the water passing over it should be in effect a discharge from the still water of a reservoir and shall not be in the least affected by the velocity of the current flowing into the reservoir or wier box. This velocity of an inflowing current, if noticeable at the wier, becomes a "velocity of approach," which will render inaccurate the desired measurement. This "velocity of approach" may be obviated by placing one or more lattice screens made of laths or other similar construction between the wier and the inlet.

The length of notch should be at least four times its depth for small quantities, and longer for large quantities. In addition to the above, for accurate measurements it is advisable, if possible, to also have the length of the notch about two-thirds of the width of the water on the up-stream side; it may be necessary to experiment somewhat in order to obtain this condition.

The overfall, or vertical distance, the water fall on the down-stream side, should be about twice its depth—that is, 12 inches if the notch is six inches deep, and so on.

In the pond not less than three feet, and preferably six feet from the wier and to one side so as to avoid any current, drive a stake, with its tops precisely level with the bottom of the notch in the wier; then measure carefully with a rule the depth of water over the top of the stake. This will give the theoretical depth of flow.

The two tables given on this page may be used to determine either the number of miner's inches or the number of cubic feet per minute.

The wier table is based on zero velocity of approach. Where the velocity of the stream is considerable, the following correction must be added to the measured depth in order to compensate for this velocity of approach:

½	ft. per second	1-16 inch
1	ft. per second	¼ inch
1½	ft. per second	⅝ inch
2	ft. per second	1⅛ inch

TABLE FOR WIER MEASUREMENT.

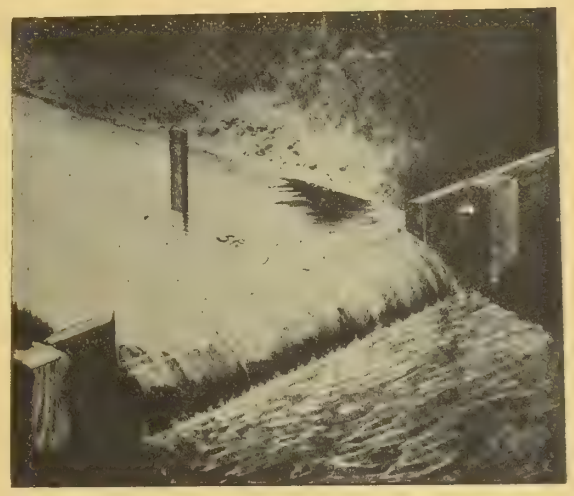
Giving Cubic Feet of Water per Minute, that will Flow Over a Wier One Inch Wide and From ⅛ to 18⅞ Inches Deep.

INCHES	⅛	¼	⅜	½	⅝	¾	⅞
0	.00	.01	.05	.09	.14	.19	.26	.32
1	.40	.47	.55	.64	.73	.82	.92	1.02
2	1.13	1.23	1.35	1.46	1.58	1.70	1.32	1.95
3	2.07	2.21	2.34	2.48	2.61	2.76	2.90	3.05
4	3.20	3.35	3.50	3.66	3.81	3.97	4.14	4.30
5	4.47	4.64	4.81	4.98	5.15	5.33	5.51	5.69
6	5.87	6.06	6.25	6.44	6.62	6.82	7.01	7.21
7	7.40	7.60	7.80	8.01	8.21	8.42	8.63	8.83
8	9.05	9.26	9.47	9.69	9.91	10.13	10.35	10.57
9	10.80	11.02	11.25	11.48	11.71	11.94	12.17	12.41
10	12.64	12.88	13.12	13.36	13.60	13.85	14.09	14.34
11	14.59	14.84	15.09	15.34	15.59	15.85	16.11	16.36
12	16.62	16.88	17.15	17.41	17.67	17.94	18.21	18.47
13	18.74	19.01	19.29	19.56	19.84	20.11	20.39	20.67
14	20.95	21.23	21.51	21.80	22.08	22.37	22.65	22.94
15	23.23	23.52	23.82	24.11	24.40	24.70	25.00	25.30
16	25.60	25.90	26.20	26.50	26.80	27.11	27.42	27.72
17	28.03	28.34	28.65	28.97	29.28	29.59	29.91	30.22
18	30.54	30.86	31.18	31.50	31.82	32.15	32.47	32.80

Suppose the wier to be 66 inches long, and the depth of water on it to be 11⅝ inches. Follow down the left hand column of these figures in the table until you come to 11 inches. Then run across the table on a line with the 11, until under ⅝ on top line, and you will find 15.85. This multiplied by 66, the length of the wier, gives 1046.10, the number of cubic feet of water passing per minute.

Table of wier measurement giving miner's inches:

1	2	1	2	1	2	1	2
⅛	.01	3⅞	2.56	7⅝	7.04	12¾	15.27
¼	.01	4	2.69	7¾	7.22	13	15.72
⅜	07	4⅛	2.81	7⅞	7.40	13¼	16.18
½	12	4¼	2.93	8	7.58	13½	16.64
⅝	.17	4⅜	3.07	8⅛	7.76	13¾	17.10
¾	.22	4½	3.19	8¼	7.93	14	17.57
⅞	.27	4⅝	3.33	8⅜	8.12	14¼	18.04
1	.33	4¾	3.47	8½	8.30	14½	18.52
1⅛	.39	4⅞	3.61	8⅝	8.48	14¾	19.00
1¼	.46	5	3.75	8¾	8.67	15	19.48
1⅜	.54	5⅛	3.89	8⅞	8.86	15¼	19.98
1½	.62	5¼	4.03	9	9.05	15½	20.47
1⅝	.69	5⅜	4.18	9⅛	9.23	15¾	20.97
1¾	.77	5½	4.32	9¼	9.42	16	21.47
1⅞	.86	5⅝	4.47	9⅜	9.62	15½	22.47
2	.95	5¾	4.62	9½	9.81	17	23.50
2⅛	1.04	5⅞	4.77	9⅝	10.00	17½	24.54
2¼	1.13	6	4.92	9¾	10.19	18	25.58
2⅜	1.22	6⅛	5.08	9⅞	10.39	18½	26.65
2½	1.32	6¼	5.24	10	10.59	19	27.74
2⅝	1.42	6⅜	5.39	10¼	10.99	19½	28.83
2¾	1.52	6½	5.54	10½	11.39	20	29.95
2⅞	1.63	6⅝	5.71	10¾	11.80	20½	31.07
3	1.74	6¾	5.87	11	12.22	21	31.21
3⅛	1.86	6⅞	6.04	11¼	12.65	21½	33.36
3¼	1.97	7	6.20	11½	13.06	22	34.52
3⅜	2.08	7⅛	6.37	11¾	13.50	22½	35.70
3½	2.19	7¼	6.53	12	13.94	23	36.90
3⅝	2.31	7⅜	6.70	12¼	14.38	23½	38.10
3¾	2.43	7½	6.87	12½	14.82	24	39.92



Wier Dam Measurement.

For instance: If the rule indicates a depth of three and one-eight inches of water, turn to column No. 1 for three and one-eight inches. Opposite it in column No. 2 is 1.86, which means that for every inch of the wier there is flowing 1.86 inches. If the wier is 36 inches long: 36x1.86—66.96 miners' inches over the wier.

An Ideal Sheep Pasture in the Mountains.

Deciduous Fruit Culture

By J. W. Mills

SHALL WE CONTINUE TO SPRAY FOR CODLING MOTH?

MR. W. P. HEADDEN, in Bulletin No. 131, of the Colorado Experiment Station, has given most conclusive evidence that many apple trees that have been heavily sprayed for years with arsenical poisons are in a sick and dying condition, or are already dead.

This malady has been going under the names, "collar rot," "crown rot," and "root rot," without any well founded assignable cause. There have been several theories as to the possible cause, such as seepage, alkali, and disease organisms. The first two of these troubles are probably one and the same, namely, too much water in the soil, and no one has been able to assign the trouble to a definite micro-organism. It should be remembered, also, that Doctor Headden's experiments have nothing to do with trees that died from drowning; and the writer knows, personally, that many, at least, of the samples of trees analyzed were from land where seepage conditions are absolutely unknown.

Doctor Headden's discovery of the real cause of this trouble has come, we believe, in time to prevent very extensive losses from the death of orchard trees in this manner. It will be folly, however, for any one hereafter to spray his orchard with arsenical preparations more times or in greater strength than is absolutely necessary to get good results.

Personally, I very much regret, as does Doctor Headden, that arsenical spraying is resulting disastriously to any of our orchard trees; but it is worse than useless to evade facts, and I am thoroughly convinced that Doctor Headden has been very conservative in his conclusions as to the extent of damage that has already been done to apple and pear trees where excessive arsenical spraying has been carried on.

Symptoms of Arsenical Poisoning.

The symptoms, in a rather advanced stage of this disease, as described by Doctor Headden and Mr. Whipple, are about as follows. Trees usually stunted in growth; bark very yellow; bark often dead and black just below the surface of the ground; the main roots in a similar condition; leaves yellow and maturing early; apples very abundant, but small and highly colored; the bark of the trunk and main limbs often with vertical cracks which may or may not give out an exudation. Trees strongly exhibiting the above condition one year are almost sure to be dead the next year.

This trouble usually appears first upon a few scattered trees, and from year to year seems to spread to others. In any orchard where a few trees are found in the above condition the utmost caution is necessary in spraying with arsenical mixtures for the codling moth or other insect pests.

How to Spray.

Since coming to Colorado, more than eighteen years ago, the writer has steadily urged the fruit growers of the State to depend chiefly upon a thorough treatment or two just after the blossoms fall, and has advised not more than one late treatment. While this has now become a very general rule among Colorado apple growers, there are still many who think if two or three sprayings are good, more will be better, and it is in the orchards that have been sprayed four or five times or more each season that most of the mischief has been done.

Now, instead of recommending two or three applications for the codling moth, I am fully persuaded that it is best to recommend one, or at most, two.

If an orchard has a few trees that show the characteristic symptoms of poisoning, as given above, or if the trees have been heavily sprayed for several years, I would recommend one spray only just as the blossoms are about ninety per cent off. If the trees have not been excessively sprayed, and if for any reason the first application was not very satisfactory, it might be advisable to make a second application, from four weeks to thirty days later, which will be the time for the eggs of the first brood to begin to hatch well.

Arsenate of lead is by odds the best poison to use, as it is least soluble in water.

We have been recommending from three to five pounds of the poison to each 100 gallons of water; but since Professor Melander has demonstrated that two pounds to 100 gallons are sufficient for the best results in Washington state, I believe it is advisable to recommend two, or not more than three pounds, to each 100 gallons of spray, for Colorado. Add no lime to the mixture.

Some Precautions.

Use a fine spray, with good force (150 to 200 pounds pressure), as a given quantity of spray material will go further in this way and give better results.

The amount of material used can also be economized by spraying the upper portion of the trees from a tower, so as to direct the spray downwards into the calyx cups.

Avoid spraying the trunks and large limbs, so as to cause the liquid to run down and collect about the crown of the tree.

If much of the spray does collect about the crown of the tree, or if the trees have received repeated heavy sprays in former years, it would be well to follow Doctor Headden's advice to remove the poisoned dirt from about the crowns and replace it with fresh dirt from between the rows.

Avoid using strong alkaline water for the spray tank, as it will dissolve some of the poison and increase the danger of arsenical poisoning.

In orchards already suffering severely from arsenical poisoning, it might be advisable to abandon the spray for a time and depend upon bands and the prompt destruction of all wormy fruit to keep the worms in check.—C. P. Gillette.

IRRIGATION PRACTICES.

(Continued from Page 531.)

11. We irrigate three or four times according to the season. Also in the winter if rains fail. As we irrigate from a pressure system we can allow the water to run as long as we choose and believe that by running small streams a long time we accomplish better penetration than would be possible with larger streams and more rapid work.

* * *

D. Frank Southworth, Banning, Riverside County.

1. Furrow system.
2. Deep furrows.
3. Never used sub-soiler.
4. To depth of tree roots at least. Length of run varies on different soils. Soil is light clay loam. Have not investigated depth of water thoroughly enough.
5. Don't know. Our land has heavy, fall and furrow are from 630 feet to 1250 feet long.
6. Run small streams so very little water run off. Lower trees seem to do fully as well as any.
7. Know nothing about it.
8. Fill furrows from 24 to 48 hours after water is shut off. Cultivator.
9. Follow in short time with cultivator or harrow. Usually smooth with harrow.
10. Usually run harrow between irrigations.
11. Usually irrigate three times during season.

* * *

Charles J. Dreher, Oroville, Butte County.

1. Furrow System.
2. Deep furrows.
3. We use sub-soiler during the later part of the summer, but only to a sufficient depth to break crust formed just below the mulch.
4. In the grove under my charge, we run the water from 48 to 72 hours to give thorough saturation. The nature of our soil is rather clayey which takes water rather slowly. We have never investigated as to how deep the water penetrates.
5. Length of furrow depends on the character of the soil. In our soil I should say from 500 to 1000 feet.
6. We cannot prevent waste water at lower end of furrows. With proper handling only a very small amount is lost. Our lower trees receive sufficient water.

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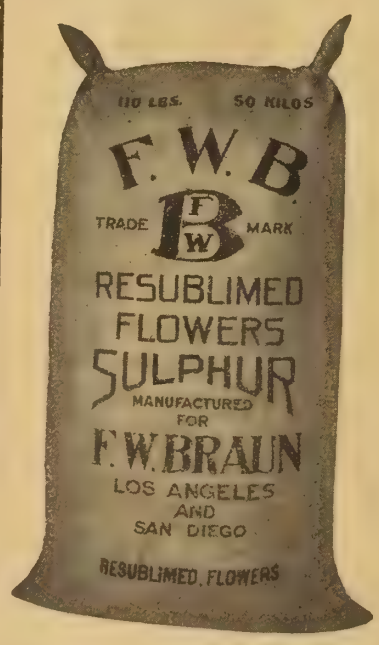

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8. We use disk harrow to go over ground after irrigation and do this as soon as the ground is dry enough to work. Usually 24 to 48 hours after irrigation.

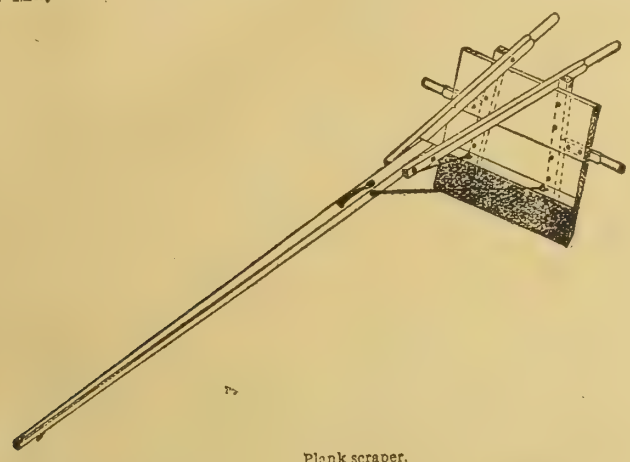
9. We follow in one or two days with deep cultivation and leave the soil as cultivated.

10. Usually cultivate again from two to three weeks after irrigation.

11. We irrigate every five or six weeks from May to October 1st. The

We made our basins large and deep by plowing two furrows together running east and west if the fall is to the south and west. We would irrigate as close to the trees as a team could walk without injuring the fruit. I prefer the plow to the ridger, however, we used the ridger twice in each row north and south to make the side of the basins and a ditch in which the water might run.

I find it a good plan to use strips



Plank scraper.

Used in closing openings in basin system of irrigating.

answers as given relate to handling groves planted in the red foothill soil carrying considerable iron and clay. Naturally the handling of this soil must differ from that of a sandy or granite loam.

* * *

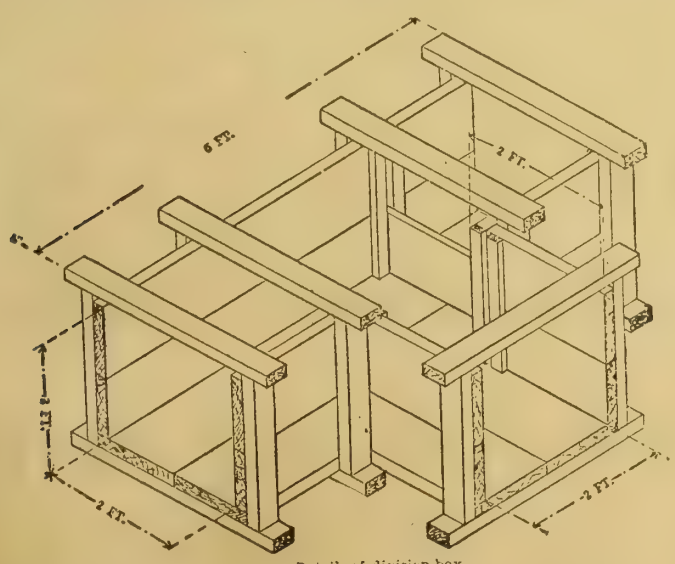
H. E. Gulvin, Hilmar Colony, Turlock, Stanislaus County.

My experience is largely in the southern end of the state where I spent fifteen years in the orange orchards. They still have a charm for me, but I now have learned to love the alfalfa fields of Turlock, also the peaches and apricots which grow to perfection. Now, as to irrigation, I give you the following from my fifteen years experience in Glendale, Los Angeles county, where water was scarce and we had to make every drop go where it would do the most good.

of canvas to lay in this ditch to save the water and save washing of the soil, that is about one-fourth of the way from the head ditch, or still better is canvas hose put together in 20 foot lengths then if trees are 20 feet apart sections may be taken off as each basin is filled.

I think head ditches should be at least 20 rods apart then run from the ditch to lower end and fill lower basin first, working back to head ditch and filling each basin from the upper side. The amount of water in each basin must be sufficient to soak down to reach former moisture.

Surface irrigation is useless or even worse, for water must go as deep as the roots or they will form on the surface, which is not the right place for them as they are destroyed by the cultivator. I cultivate the first day



Details of division box.

A division box like the above is well worth its cost especially in soft ground which washes badly.

I tried the furrow system, but found the soil was too porous, being a decomposed granite and taking the water so readily that it was no easy matter to give a uniform wetting. The upper part of the orchard would become saturated very deeply but the lower end would not be reached at all. On clay or heavy soil it would be entirely different. There I think the furrow system would be decidedly best, especially if the water supply is abundant. In the orchard with shortage of water, I find the loose granite soil is vastly better in the basin system of irrigation.

after irrigation or not later than two days and follow the cultivator with the harrow, working well under the trees. After three weeks cultivate again and that will give lots of mulch or loose soil to work up again in the basin at the next irrigation.

The next irrigation should be about five or six weeks after the first and must be done thoroughly each time. Little and often is a poor policy in irrigation.

Here in Turlock we have an abundance of water and so do not have to be so careful. When we prepare land to seed to alfalfa we ridge it up in

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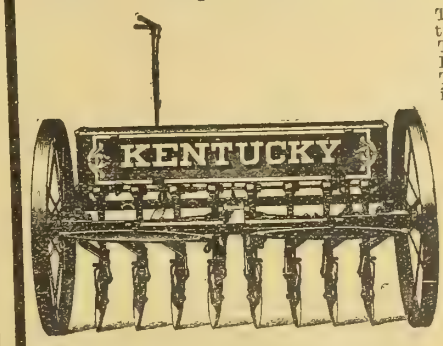

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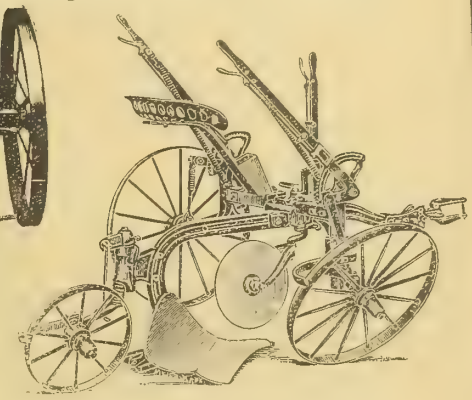

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Kerman Tract

Told it plainly and fully, setting forth facts—and facts only—that can readily be substantiated by anyone who will come here to investigate for themselves.

We have outlined the possibilities and touched the probabilities; we have explained the "whys and wherefores" so that any reasoning boy can understand them; we have dealt with the land hunger of the east, with which we are conversant, showing that a California landslide has set in and is gathering force, a landslide that will raise horizontally every acre of productive land in California in the very near future; we have called attention to the many opportunities that have been missed elsewhere by those who hunger for land but who have fiddled away their chances, not only for a self sustaining home but for a fortune. We have called attention to the fact that the door of opportunity is yet open in the "new California," that it is practically the last west, and that it is high time to act before the land hungry easterner comes here and squats on what might have been, and should be, your opportunity.

More particularly, we have told about what is to be found at Kerman; of the magnificently rich fruit and alfalfa lands; of the water right that cannot be duplicated anywhere in California, character, quantity and price considered, a water right thoroughly tried, fully litigated, firmly established and guaranteed, a water right that has become the measure of merit for all others.

We have told of the location, of the climate peculiarly fitted for the production of high priced semi-tropical fruits, of alfalfa, dairy and poultry products, of the natural freedom from insect pests, a condition brought about by a peculiarly favorable climate.

We have explained the home comforts available—an abundance of pure soft water, cheap electric light and power, telephones and rural delivery to the farms, the good roads, beautiful avenues, in short, the chance for securing every comfort and most luxuries, besides the opportunity for the making of money. We have called attention to the record made by this tract in the past few months and hinted at what is coming. But most important of all, we want to say that the people already on the tract are of a character to make the finest of neighbors—no undesirables being allowed. The character of the settlers already here and the class now coming is sufficient guarantee for the future of the colony. They are making substantial improvements, are turning the tract into a garden spot, building good homes and beautifying their surroundings. Schools are plenty and churches available. The town of Kerman, located in the center of the tract, is up to date in every particular with advantages seldom found outside of large cities. It is now a division point on the main line of the S. P.

Of these advantages we have spoken and many more can be mentioned. Take the last three numbers of the Cultivator and re-read very carefully what we have had to say. It will pay you big if you are interested either in securing a splendid home or the mere making of money. Now

It Is Up to You

We can do little more except to answer questions, which is always a pleasure. We cannot knock you down and force this opportunity onto you. We cannot compel you to make money unless you want to. We cannot bring you here to look this colony over and to verify or disprove our claims. We cannot force you in on the "ground floor" so that in the future when these chances are gone that you will not regret losing them. We cannot convince you of the truth of our claims unless you give us the chance. We cannot do any of these things, though we are dead anxious to. Shall we have the chance?

It Is Up to You

We are ready and anxious to do our part. We are glad to make any reasonable effort to help you in this matter. Now is the time. And there is no time like the present. Our eastern connections inform us that all over the people are becoming interested in the **Kerman Tract** and that they will come here in increased numbers beginning with May and June. Every buyer from the east lessens your chance just that much.

Investigate this now. You can risk only your time and a little for traveling expenses. Right now either write to

Thompson Seedless Grapes, for Which the Kerman Tract Has Become Famous

CARNINE & STORGAARD

General Sales Agents

Kerman, California

Or call at one of the following offices;

FRESNO IRRIGATED FARMS CO., 505 Kohl Bldg., San Francisco, Cal.
FRESNO IRRIGATED FARMS CO., 553 So. Spring St., Los Angeles, Cal.
DODD & NEU, 520 San Pablo Ave., Oakland, Cal.
H. J. YOUNG, 222 Globe Bldg., Seattle, Wash.

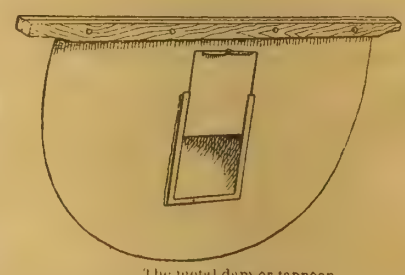
checks so that we can put about four inches of water over the field, that is, four inches deep in all sections. We irrigate twice a year.

In our peach orchards we have the furrow system, one irrigation is sufficient. Sweet potatoes irrigate twice in furrows.

* * *

C. C. Elkins., Fillmore, Ventura Co.

1. Furrow system.
2. Deep.
3. Yes. But abundant humus makes it unnecessary.
4. All of these things depend largely upon local conditions. (a) Ground should be saturated below the tap root. (b) From 24 to 48 hours in my soil. (c) Rich black soil, mixed more or less with gravel. (d) Yes, four to five feet.
5. The shorter the better. Probably the most practical, about 500 feet.
6. (a) By rigid regulation. (b) Yes.
7. No experience.
8. Largely owing to the weather, sometimes inside of 24 hours and



The metal dam or tappoon.

Unless one has almost perfect arrangements of gates and flumes the tappoon is almost a necessity. They are usually made without the little gate or opening indicated above.

sometimes three or four days. (b) We have a Planet Jr. two horse cultivator and a four horse one made at blacksmith shop. We use the one we consider necessary under the circumstances at the time.

9. In hot weather we smooth by dragging a chain behind the cultivator

10. Sometimes we do and sometimes we do not; owing to the condition of the ground.

11. We irrigate about once a month from May or June until September and later when necessary.

* * *

W. E. Wilsie, El Centro, Imperial Co.

Mr. Wilsie writes that for some reason he did not receive our first communication, but in response to another letter writes:

In a general way orchard irrigation will be the same in this valley as on the closer soils nearer the coast. I prefer furrow irrigation to any system I have tried, except that in winter if a green crop is growing I would flood the land. Our green crops can be put in early so they can be plowed under in time to get a good dry mulch before hot weather. Make the furrows deep and not too close together, three furrows between the rows and run small streams and let it run for a long time two or three days to fill the ground below with as little wetting of the surface as possible and your dry mulch will be preserved. As soon as the furrows are well settled (not dry) run over with a scraper made for the purpose filling the furrows with dry dirt. In a short time start a fine tooth cultivator and cultivate deep, but do not bring the moist dirt to the top, in this way the roots will be kept down. Irrigation will be required less frequently and it will be more effective.

Live Stock and Dairy

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

By Mrs. Minna E. Sherman

SEVERE CASES OF GARGET.

WHEN milk comes from the teats as curds and whey the trouble has passed into a severe form. When this occurs and clogs the opening of the gland into the milk ducts the case is likely to prove troublesome. When the tube can be inserted it may be used to put aside the curded mass. Now, I hesitate always to tell others about this form of treatment as many do not realize what complete sterilization of tubes and material used means. One quart of warm boiled water and a teaspoonful of baking soda added is injected through the milking tube and the finger held on the end of tube for at least a minute, before the tube is gently withdrawn. The milking tube should be boiled before using and lifted by a thread previously tied on the ring and dropped into a bottle of carbolized vaseline. It is only withdrawn from the vaseline at the cows side and handled by the lower end slipped in quickly and the rubber end of the garget syringe inserted and the soda water gently forced into the udder. Rolling and moving the udder a little, if it is not too tender, will help to bring the water into contact with more of the curds. After half an hour, milk out all that will come from the affected quarter. If more than one quarter is affected the milking tube should be sterilized again before being used, or two tubes should be sterilized. Now, do not put the tube after using back into the carbolized vaseline, but into the pan that has the soiled things in it. Repeat these injections of warm soda water until the curd is reduced to a fluid condition and milked out.

Garget Outfit.

The regular garget outfit, in mild cases, can be used to force air into the udder and this will expand the glands and relieve the inflammation in many cases. I have heard the air going into the udder make a sound like the small pops and gurgles of a full bottle turned upside down. The garget outfit costs about $4.00 and, if many cows are handled, pay well to own. Unless one has some experience, it is well to send for a veterinarian to attend the cow. There was a time when these men were quacks and one had to tend to the animals themselves. I, personally, gained an insight by having a father and a husband who both practiced medicine for many years, on the human family. These cow troubles are much the same as those of the human mother and the family doctor can give good advice in their treatment.

Bad Cases.

If curds have formed and been neglected the cow may become stiff in her hind quarters and lame in the back. Her appetite will be entirely gone, eyes will show fever and the nose become harsh and dry, breathing heavy and pulse quickened. Pus forms in the udder and, while cows rarely die from blood poisoning from this pus, they suffer greatly and should be helped along by poultices of flax seed meal and hot bran. As soon as the abscess has formed, have it lanced and dress it with whatever the doctor prescribes. We have used the following for some years. One dram of carbolic acid, two drams of camphor gum and five ounces of linseed oil. Dress the part with sterilized gauze soaked in this mixture. When the pus stops forming and the wound looks healthy, a dusting of powdered charcoal is all that is necessary. Now, one would think that this would ruin a cow as a milk producer, but it is surprising how many will soon give a full flow of milk again. The portion of the udder having had the abscess, may not give a full flow of milk, but the rest of the udder will take on greater activity and the cow give her full normal amount of milk. The cow seems to have just so much milk to secrete and nature is determined that she shall have a chance to do it.

Gangrene.

Sometimes things happen on a dairy ranch that are dreadfully wrong. At one time, when I had only a few cows and a poor milker, I took a vacation myself and when I returned the foreman reported a sick cow. I went down to the barn and found the daughter of Romeo Aaggie's Acme had an udder swollen to great size and already it had the appearance of gangrene. I immediately bathed the udder with formalin and then soaked a piece of gauze in a five per cent solution and put it over the bad portion. Then a simple tonic was given her and, so far had she gone, it was necessary to drench her with a gallon of warm milk to help her keep alive until morning and then a good veterinary would come. When he came he looked sorrry and advised that she be put to an end. I said: "No! she shall have her chance." So we took her out and intended to operate, but, as she staggered along, the diseased portion of the udder consisting of three teats and three quarters of the udder dropped off, leaving a clean fresh surface. This was promptly sterilized by a spray and dressed with iodoform powder. The cow made a quick recovery. She has raised some fine calves and has paid her way in the herd with a quarter of an udder. She milks from thirty to thirty-six pounds, when fresh, of 4.1 per cent milk. I think, barring this accident, her mother's record would not have been the best of the Romeo Aaggies. I believe, even, that of other cows here on the ranch, Puliana de Kol would have stepped down from her world's record as a heifer before this one.

Simple Cow Tonic.

The simple cow tonic referred to in the above paragraph is a harmless one and helps the cows. Two ounces of gentian, two ounces of ginger, sweet spirits of nitre. Give as one dose in a bowl of oil cake gruel.

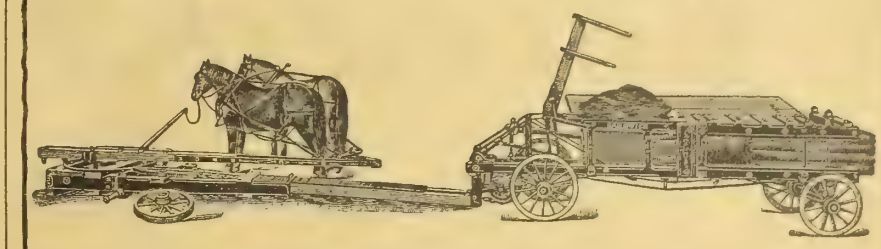
Of course, a few other things are often found wrong with a cow's udder and one of these is bloody milk. Congested condition of the udder will sometimes produce this trouble, and again the teats may have abrasions

FAST-WORKING

SOUTHWICK

TWO-HORSE SELF-FEED

HAY PRESS



No question about it, its the best horse power press made. Note its good points—great capacity, perfect bales, ease of operation, durability, full 40-inch feed opening, long bale chamber, low bridge, self-feed, stands on the wheels when in use,—a perfect press—and a money maker.

Get your order in to us quickly, as it will soon be too late to secure them in time for this season's baling.

We also have the Sandwich Engine-power Belt Presses—splendid machines of wonderful capacity. Also smaller presses—all-steel, self-feed.

We have many testimonials—here is one of the latest:

Colegrove, Cal., April 17, 1909

Hawley, King & Co.
Los Angeles, Cal.

Gentlemen:

I have worked on a Southwick horse-power press for twelve consecutive seasons, and now own one which I bought from you two years ago. I have baled as high as 40 tons in one day. On one occasion we baled 20 tons before noon, and last season—1908—I averaged 32 tons per day for the entire season's run, during which time I baled 2060 tons of all kinds of hay. I would not have any other kind of Hay Press.

Yours very truly
P. Bergon

See us or write us today

Hawley, King & Co., Gen'l Agents

224-228 South Los Angeles, St., Los Angeles

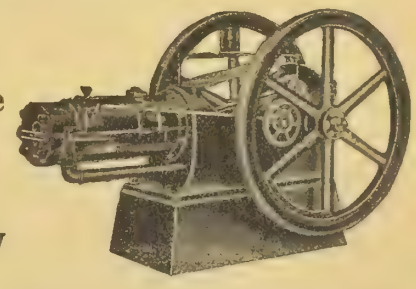
Farm Wagons, Implements, Carriages, Harness, etc.

Commercial Gas Engines

are Better Engines than you have been using.

See One Buy One

So will your neighbors.
Send for Bulletin No. 12



Commercial Engine Company

953-955 No. Main St., Los Angeles, Cal.

FREE TRIP TO SEE THIS HAY PRESS AT WORK

LOS ANGELES AND RETURN AT OUR EXPENSE

WE PAY YOU TO INSPECT THESE HAY PRESSES.

Instead of paying a salesman's fare to show you a small model of a hay press, we will pay your fare to Los Angeles and return, not exceeding $15.00, to examine our California Special New Century, full circle, all steel, self feed Hay Press and all others on sale there. It makes no difference which hay press you buy, we pay your railroad fare just the same.

When you see for yourself how this machine has been built expressly for heavy baling on the coast, how strong it is, how easy it is on horses, what smooth bales it turns out, you will understand why we make such an offer. It has 7-in step-over, pull power, high baling chamber, positive plunger rebound; it stands up to its work, no taking off of wheels. Has record of 39 tons per day. We will ship you one to try. If you don't want it we will pay freight both ways. Write now.

ARNOTT & CO., 118 South Los Angeles St., LOS ANGELES, CALIF.

Second Hand Irrigating Plants

Pipe, Pumps, Steam and Gasoline Engines. We have the largest A. I. stock of second hand machinery on this coast, and at the right prices. Tell us what you want and we will give you our best figures. Mention this paper.

Western Machinery Company

230 Main Street, San Francisco, Cal.

The Most Perfect

Cream Separator

That Money Can Buy.

The United States 1909 Models

Nos. 14 and 15, like all other sizes, are absolutely unequaled.

They are **the standard** Separators of the world.

They are entitled to this claim of being **Standard** because they won out in the greatest contest of Cream Separators ever held at any National or International Exposition in 50 consecutive runs, lasting through one month, on the milk of 10 different breeds of cows. The ***De Laval Disc Separators*** and the ***Sharples Tubular Separators*** were entered in this contest and **were beaten.**

The United States Separators are used by a very large percentage of the leading breeders in all the 10 leading dairy breeds of cows.

The United States Separators are used by progressive dairymen and creamerymen everywhere.

The United States Separators have **handsome frames,** cast in **one solid piece.** They have **waist low supply cans.** The **gears** are all **enclosed, dust proof** and **self oiling.** The **bowls** are **most simple** in construction and **easily washed** thoroughly in all parts in from two to five minutes. No long goose neck pipe in the United States to get foul and difficult to clean.

Dairy women as well as **experts consider** that the **United States** is now the **easiest cleaned, turns easiest, skims cleanest** and **wears longest.**

The United States was the originator of the enclosed, dust proof, self oiling gears. All others using this feature are imitators.

Send for illustrated catalogue and circular, No. 20

VERMONT FARM MACHINE CO.

BELLOWS FALLS, VERMONT

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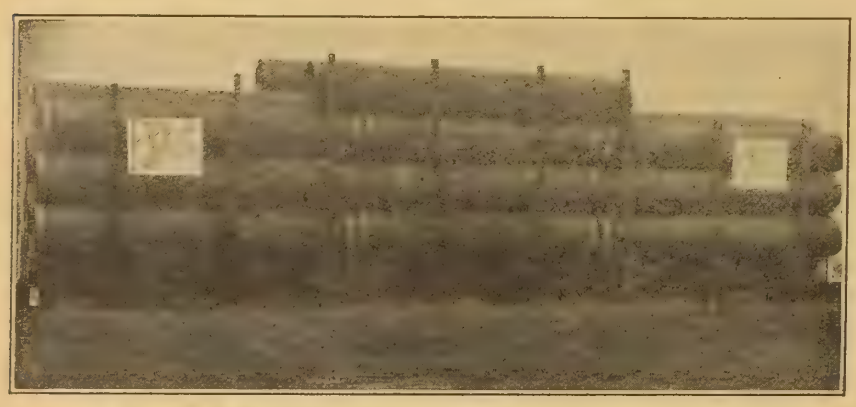
Prompt Delivery Assured California Customers from Stockton warehouse. No delays. Address all letters to Bellows Falls, Vt.



WOOD PIPE

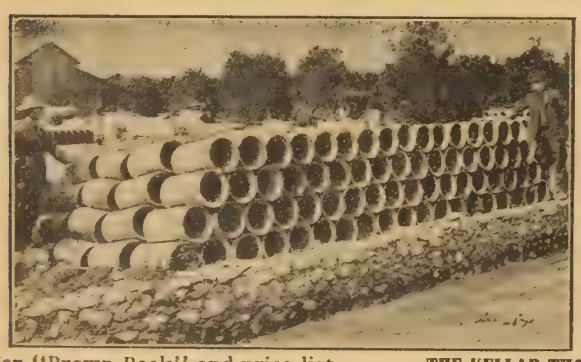
Made from California Redwood or Selected Washington Douglas Fir

NATIONAL WOOD PIPE CO.

Stave Pipe 2 inches to 10 feet Diameter up to 400 feet Head

LOS ANGELES OFFICE, 404 EQUITABLE BANK BUILDING
SAN FRANCISCO OFFICE 318 MARKET ST.
SALT LAKE CITY, UTAH. PORTLAND, ORE., 210 WELLS FARGO BLDG.

Prices, specifications, hydraulic data, and general information furnished upon request.



From photograph showing amount of

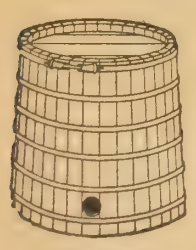
Ten-Inch Pipe

made by four men from 10 bbls. of cement in 9 hours — 280 two-foot joints, or 560 feet. This pipe was made with the

"K T" Moulds

An equal amount can not be made with any other tools in the same period of time. Write for "Brown Book" and price list.

THE KELLAR-THOMASON MFG. CO., Covina, Cal



Tanks Tanks

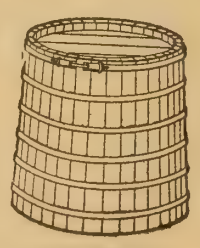
WINDELER'S PLANING MILL AND COOPERAGE

GEO. WINDELER, Prop

Water Tanks, Wine Tanks made from carefully selected stock by careful and experienced workmen. "Tanks that are well made last a long time." It will pay you to get my prices before buying.

Geo. Windeler

Wine Tank **144-154 Berry St. San Francisco, Cal.** *Water Tank*



When writing advertisers, mention Cultivator.

on the inner sides that give out a few drops of blood on being pressed. Bathe for ten or fifteen minutes in cold water and rub the udder with camphorated oil. The old remedy was a teaspoonful of sulphate of iron every morning, but, in these days, the fact is that very little iron will be taken up by the system and it is doubted if it does the good it is considered to do.

As the years go by, the world is learning slowly that more and more of the medicines that were thought infallable chiefly produced their curative effect on the mind of the patient. —M. E. Sherman.

EDUCATIONAL BUTTER SCORING CONTEST.

The call for the second entry to the California Educational Butter Scoring Contest brought response from twenty-four creameries.

With one or two exceptions all butter arrived in good condition and there was a marked improvement in the appearance of the packages and the care taken in preparing them for shipment. In several instances the interior and exterior boxes were wrapped with burlap and in one case the inner box was packed with ice. We mention this to show that there is a determined interest in this contest, which we hope will be maintained. The excellent body and firmness noted in most entries should encourage those who took pains to cool and pack carefully before shipment. Two or three who competed before failed to send entries this time, while several new ones appeared. We have noticed a little carelessness in filling out the report blanks accompanying each entry. The buttermaker should fill these out each time as completely as possible for it helps us in rendering a proper criticism. The criticisms should be the "meat" of the contest, hence a full report with each entry is essential.

The scores, as placed by Mr. C. L. Mitchell and members of the Dairy Department, are as follows:

	Score.
Gridley Creamery, Gridley	96
University Farm Creamery (not competing)	95¾
Western Yolo Creamery, Winters	95
San Pasquel Creamery, Escondido	94¾
Bay Views Creamery, Napa	94½
Ceres Creamery, Ceres	94¼
Pozzi Creamery, Tomales	94
Edence Creamery, Petaluma	94
Colusa Butter Co., Colusa	94
Suisun Creamery, Suisun	93½
Pozzi Creamery, Marysville	93
Rose City Creamery, Chico	92½
Laton Co-Op. Creamery, Laton	92
Silva's Creamery, Santa Rosa	92½
Homestead Creamery Co., Nicasio	92
United Creameries, Arcata	92
Crystal Cream & Butter Co., Sacramento	91½
Denman Creamery Petaluma	91½
Elito Creamery, Nicasio	90½
Antelope Creamery, Topaz	90

Four scored below 90 making a total of 24 entries. One or two creameries reported unavoidable embarrasments, such as a sick buttermaker, or a delayed notice of date when entry was due. Consequently in the rush to hold their places, a lower grade of butter was sent to the contest, which explains some of the apparent declines in quality.

The judges were greatly encouraged with the quality of butter sent to this contest. It averages considerably better than the butter of the previous one, though somewhat better quality should obtain at this and the succeeding contest because of more favorable food and weather conditions. Again we call attention to the use of starters and scrupulous cleanliness in the creamery. There is evidently some trouble from old cream and perhaps some carelessness in getting cream delivered promptly and putting it as quickly as possible under control. Get the starter can in place as soon as possible. From the reports there is no apparent increase among the contestants of those using starter. Under favorable conditions some have done well without starter, but it's a mistake to continue trusting to chance fermentation. If a creamery cannot secure skim milk for starter making, the directors had better provide the buttermaker with a cow.—Herbert A. Hopper.

THE SCORE-CARD SYSTEM OF DAIRY INSPECTION.

Modern investigations in dairy sanitation have shown the importance of producing and handling milk under clean conditions, and a significant factor in attaining that result is the score-card system of dairy inspection, according to Messrs. Clarence B. Lane and George M. Whitaker in a report just published by the Bureau of Animal Industry of the United States Department of Agriculture. The main advantage that they attribute to the score-card system is that it deals with itemized conditions. City milk inspection a few years ago was merely a matter of detecting added water or preservatives. With recent progress in sanitary science the work has broadened, and boards of health are now investigating the sanitary phases of milk production, transportation, and distribution.

In the smaller cities most of the milk consumed is retailed by the producer, and even in places of considerable size many producers are also retailers. In cases where the functions of producer and retailer are merged in one person an inspection of the dairy farm discloses the methods of distribution as well as production, and the dairy farm score card answers all purposes under such conditions.

As cities grow, middlemen become a necessity and their places of business are more familiarly known as "plants." These plants have wide range of capacity, equipment, and methods. One extreme is a building 300 to 400 feet long on a spur of a railroad where milk is received by the train load, cooled, mixed, filtered, perhaps pasteurized, canned or bottled, and held in cold storage until retailed in the city. The other extreme is the dealer retailing only a few gallons who may have no plant and his equipment consist of only a carrier can and a quart measure which were washed in the kitchen sink with the family dishes; or he may have fitted up the dark, illy ventilated basement of his residence as a "milk plant," with a wooden tank for cooling the milk, a few dozen bottles, a washtub in which to cleanse them, a dipper for filling, and a brush to agitate lukewarm water inside the bottles. It does not necessarily follow that all small dealers adopt improper practices, but the chances are that the ordinary milkman with small capital and only a little at stake will not take as much care as a person differently situated.

For the past two years the Bureau of Animal Industry through its Dairy Division has been making a study of dairy inspection with a view to developing a system that would be practical and comprehensive, and has assisted the authorities of a number of cities in different sections of the

LAMENESS from a Bone Spavin, Ring Bone, Splint, Curb, Side Bone or similar trouble can be stopped with

ABSORBINE

Full directions in pamphlet with each bottle. $2.00 a bottle at dealers or delivered. **Horse Book 9 D free.**

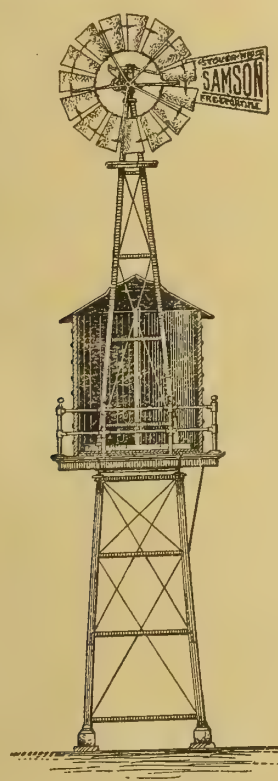
ABSORBINE, JR., for mankind, $1 a bottle, removes Painful Swellings, Enlarged Glands, Goitre, Wens, Bruises, Varicose Veins, Varicosities, Old Sores, Allays Pain.

W. F. YOUNG, P. D. F., 244 Temple St., Springfield, Mass.

For Sale by Langley & Michaels, San Francisco, Cal.; Woodward, Clark & Co., Portland, Ore.; F. W. Braun Co., Los Angeles, Cal.; Western Wholesale Drug Co., Los Angeles, Cal.; Kirk, Ceary & Co., Sacramento, Cal.; Pacific Drug Co., Seattle, Wash.; Spokane Drug Co., Spokane, Wash

SAMSON WIND MILLS

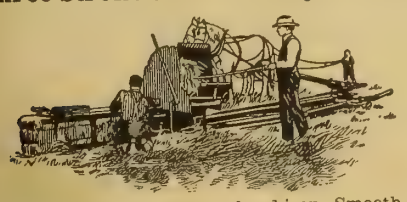
Have double gears, removable bearings and center lift, which double the life of the mill. They will last longer, pump more water and give better satisfaction than any other WIND MILL.



This is an up-to-date Sub-structure, Tank and Wind Mill outfit complete, substantial, economical and attractive. We build all kinds. Write us or our general agents for full information and prices, description &c., before purchasing.

The STOVER MFG. CO.
FREEPORT - ILLINOIS
California Avenue
CRANE CO., LOS ANGELES and SAN FRANCISCO
General Agents for California

Three Stroke Self Feed Hay Press



Two men can run it. All steel and iron. Smooth bales. Easy draft. Satisfaction guaranteed. Free trial. Ask for Catalogue 28.

The Auto-Fedan Hay Press Co.
1521 West 12th St., Kansas City, Mo.
Agents—John Schilling, Jr., Los Angeles, Cal.
J. C. Gordon, Box 167, Sacramento, Cal.

HOLSTEINS

We Have For Sale a Number of Registered Young Bulls and Heifers **$100**

All our stock comes from the celebrated herd formerly owned by the Pierce Land and Stock Co., the premium herd of Holstein Friesians in California. **Oakwoods Stock Farm Co., Lathrop, Cal**

The Whiting Jersey Stock Farm Company
Is making the very best strains of blood fresh from the island of Jersey a specialty.
Whiting Jersey Stock Farm Co. Heber, Imperial Co., Cal

Hay For Sale. Buy your hay in car lots. Special attention given to supplying alfalfa to dairies.
E. R. LONG
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Thoroughbred Poland China Swine
Black Minorca and Barred Rock Poultry
High Grade Stock of Best Strains.
Young Stock For Sale
W Bassett Hanford, Cal

John Lynch Breeder of Registered **Shorthorns**
MILK STRAIN
Box 321 Petaluma, Cal.

When writing advertisers, mention Cultivator.

country in applying such methods for the improvement of their milk supplies. Some results of this work, together with instructions for using the score-card system, are given in the publication referred to, which may be had by addressing a request to the Bureau at Washington, D. C., for Circular 139.

A striking example of the possibility of improving dairy conditions through the score-card system is shown in the report of 20 dairies at Richmond, Va., which made the greatest percentage of grain from the first score to the last during a period of six months. The lowest score was 20 points on a scale of 100. "This place," said the health officer, "was indescribably bad. Seventeen cows were huddled into two dark, foul sheds, with about 200 cubic feet of air space to each cow. The water supply was grossly contaminated. The milk was poured from dirty milk pails into cans which stood in manure in a dirty stable yard. Everything was in keeping with this partial picture." This dairyman immediately took steps to meet the requirements of the scoring system in use, and his scores showed steady improvement visit by visit, the last score showing 62.5, which was above the average. The same health officer further states:

"Common justice demands that full credit should be given to the milk producers and to the city dairymen for their share in what has been accomplished. To anyone who was familiar with the conditions under which milk was produced and sold in this city a year ago, a visit to the dairy farms supplying us with milk at the present time would prove little short of astonishing. On every hand new stables have been erected and old ones improved, milk houses have gone up, stable yards improved, and most important of all, better methods of milking, handling, and transporting milk."

Many large dealers employ an inspector to give dairies supplying them with milk a rating on the basis of the score card, requiring them to reach a certain standard or stop shipping milk. To illustrate: One large milk company added the following note to the list of prices: "These prices apply only to those dairymen whose premises are scored 60 per cent or higher by the department of health. Those who score less than this will have a reduced price paid, and milk from dairies scoring less than 50 per cent is not desired and will not be accepted."

Unless public sentiment demands a good quality of milk and consumers are ready to meet the increased cost, improvement must necessarily be slow.

RID SOWS OF WORMS.

Few realize what inroads into swine herds worms make every year, and what a menace they are to successful hog raising, says a writer in Farm Stock and Home. A hog cannot thrive when irritated by these parasites, which are many times present in great numbers without producing very noticeable symptoms. The farmer goes on, feeding his hogs, and wonders why they are so unthrifty and ungrowthy. In many cases the trouble can justly be assigned to the presence of worms. There are probably few herds in which they do not exist.

Large feeders rarely start in to feed a new bunch of hogs, without first treating them for worms, for they have learned to their sorrow the futility of feeding an infected animal. Worms reproduce by means of eggs. These pass out of the animal's body with the manure and lie about in yards or barns or on the grass, waiting to be taken up into some other hog's system, there to develop and reproduce themselves. One hog with a single worm may be the cause of infesting a whole herd. Damp filthy places are most favorable to the egg or embryo, and if one is anxious to be free of worms, he should take care to keep surrounding conditions clean and sanitary.

Now is the proper time for worms. Whether one knows it or not, their intestines may be practically teeming with long, pinkish worms, and unless he gets these out of the systems, and things cleaned up before the young pigs arrive, they in turn will become wormy. It may take a little time and trouble to treat the sows now, but it will pay a dozen times over.

Sows troubled with worms should be kept off feed twelve hours or so, then given a dose in the morning of turpentine or gasoline. This should be given in milk, one teaspoon to every 80 or 100 lbs. of live weight. This amount may even be increased, after the hogs have taken it a few times. This dosing should be kept up for a week, the hogs being fed their regular ration only once a day. Much better results are secured by dividing the sows up into bunches of four and five, as each one then gets his exact share of the dose.

When sows are once freed of worms, place constantly before them a mixture of equal parts of powdered copperas and salt. This should be kept in a box out of the weather and where the hogs can get it at will. Another good tonic is made up of charcoal, salt, ashes, copperas and air slaked lime, mixed in varying proportions according to one's own idea. All of these substances are obnoxious to worms, and tend to keep the system free of them. If one gets his sows cleaned up and keeps them so, the pigs will stand an even chance when they appear. If they, too, are given these tonics from the start, and kept thrifty and strong, they will not likely be troubled with worms.

TO PREVENT ABORTION.

Give two drams of pure carbolic acid, well diluted with water and mixed in the cow's feed every other night, each alternate fortnight commencing at end of second month of pregnancy and continuing until the end of the seventh month. If the cow will not take the carbolic acid in feed mix it with a pint of skim milk or of flaxseed tea and administer it as a drench. At the same time the stable should be cleaned, disinfected and whitewashed and every day the rear parts of the cow should be sponged or sprayed with a 2 per cent solution of coal tar disinfectant.

SHOATS ON SHORT FEED.

It takes a lot of good feed to fill out the lines of a shoat that has long been on such short feed and get him back to the form of thrift that he showed when he left his mother to shift for himself. No man ever saw a pig making profitable growth or doing a fraction of what he is capable when his hair is dry and standing every way, his belly girth double that of heart or flank, as many a shoat shows today, and all because of lack of a little more feed.

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Thoroughbred Holstein Bulls and Heifers
Thoroughbred Berkshire Boars and Sows

Dairymen of Humboldt county will test over 5000 dairy cows this year.

California Cultivator

ESTABLISHED 1889

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Contents

OUR FRIENDS THE TREES, Cover.

PRACTICAL IRRIGATION BY PRACTICAL MEN, 531.

WITH THE CITRUS GROWER.—Disposing of Our Oranges; To Make A Good Citrus Grove; Black Scale, 532, 533.

ORNAMENTAL GARDEN.—This Month; Salvias, 534.

VEGETABLE GARDEN.—This Month; To Grow Sweet Potato Plants, 534.

MEASURING WATER. 535.

DECIDUOUS FRUIT CULTURE.—Shall we Spray for Codling Moth, 536, 537.

LIVE STOCK AND DAIRY.—Garget; Educational Butter Scoring Contest; The Score Card System of Dairy Inspection; Rid Sows of Worms; To Prevent Abortion; Shoats on Short Feed, 539, 540, 541.

EDITORIAL.—Citrus Tariff; Higher Prices; Registering Farm Names; Raisin Day; Cherry Day; Mission Architecture; Lumber Tariff, 542.

AGRICULTURAL NOTES OF THE PACIFIC COAST. Northern, Central, Southern, the Coast, 543.

POULTRY.—A Few Words; Diarrhoea; Fits; How to Use Hen Manure; How to Pluck Chickens; Eggs in Incubator Need Air; How to Secure Fertile Eggs; Keeping Eggs or Hatching, 544, 545, 546.

CALIFORNIA FARM NAMES, 547.

IRRIGATION.—Selecting The Farm Gasoline Engine; Desert Watering Places, 548.

LEGAL QUERIES.—Irrigation Ditch Right; Storm Water Damage; Drainage District; Right of Way, 550.

QUERIES AND REPLIES.—Motor Velocipede; Cut Worms; Red Spider; Fertilizer for Beans; Aphis, Perris; Beer Seed; Renting Land on Shares; Beans on Alkali; Green Manure; Swine Questions; Sulphuring Grapes; Green Manure Crops, 550, 551, 552.

VETERINARY.—Scours; Worms, 552.

GENERAL AGRICULTURE.—Mosquitoes; Dodder; Seeding Alfalfa, 553, 554.

HOUSEHOLD.—From Day to Day; A Chance Acquaintance; About The House; Home Maker's Note Book; Sweeping; Puzzled; Opportunity, 555, 556, 557.

PRODUCE MARKET.—Los Angeles, Markets; San Francisco Markets; Citrus Markets, 558, 559.

CITRUS TARIFF.

One of the most conclusive proofs of the value of co-operation is shown by the magnificient fight put up by the California Citrus Protective League. That league is a voluntary association, embracing practically all of the citrus producers of the state. When the importers made an onslaught on the orange and lemon tariff, this association sent several of its strongest men to Washington to place before the Ways and Means Committee information as to the citrus industry of this country.

From unique booklet issued by the league which is placed in the hands of each member of the committee we note:

While the production of California lemons has increased during the past ten years, the percentage of home grown fruit consumed in the United States has not materially increased. In 1901 67 per cent of the consumption was imported; in 1907 64 per cent; in 1908, 2,231,125 boxes of lemons were imported into the United States, which was the heaviest importation in the history of the business and was an increase of over 400,000 boxes in excess of the importation of 1901.

"Experience has demonstrated that California possesses the requisite soil and climatic conditions to produce lemons equal to any grown in Italy.

"Lemons are a household necessity in all portions of our country, necessary to health and a comfortable existence.

"The 2,000,000 boxes annually imported from Italy if grown in California would furnish continuous employment at good wages to 5,000 people and would comfortably support 5,000 families in the United States.

"All of the lemons required for consumption in the United States could and would be grown in California if the tariff duty was sufficient to equalize the cost of labor and transportation between Italy and the United States."

These and other facts have brought forcefully to the mind of Congress the importance of protecting this industry in this country. We trust other fruit growers of the state will observe the important lesson and secure as strong an organization to protect their interests.

HIGHER PRICES.

The recent gambling plunge in wheat by which its price was boosted beyond that which is ligitimate, or at least beyond that which production and demand require, has called attention more than ever before to the great injury which gamblers inflict upon this country. Naturally as a friend of the producer, the Cultivator has no wish to bear a price in any production of the farm. In fact, but few farmers will derive any advantage from this recent flury. It is often to the benefit of the gambler to depress the price instead of increasing it and that is the time when the farmer receives greatest injury. Notwithstanding this position in which the farmer is, the mails have been flooded with "news items" in support of the gambling in futures, all presumably "in the interest of the farmer." For instance, in one of these we note the following clipped from the Manufacturer's Record.

"When farm products were low and farmers were literally bankrupt, when agriculture was at its lowest ebb and the people of the country were rushing to the cities in order to find some means of making a bare living, the mouthing orators, and, to their shame be it said, some ministers, densely ignorant of what they were talking about, preached the gospel of hate to the so-called "money power," claiming that this great money power, whatever it may be, was crushing the life out of farmers. The bankers, gamblers and speculators, all classed as the money power, were said to be in collusion with Europe in order to destroy the value of American farm products."

When the "money power" uses its power ligitimately, all hail to it. As an aid to the gambler it is only a curse.

Now, the farmer wants living prices, he also wants fair treatment at the hands of the country and demands that the gambler shall cease to command the market and that honest prices may prevail. If this can be done, we believe that the prices which are just will be secured and that when the farmer is ready to market his crop he will receive fairer treatment than he does now when every inducement is offered to speculators to control the market.

REGISTERING FARM NAMES.

As will be seen on another page in a letter from the Secretary of State that office is now ready to receive applications for "claim to trade mark." The act which was passed by the recent legislature amending section 3196 provides that any farm owner may secure a trade mark priviledge for the name of his farm under practically the same regulation that the tradesman may register a trademark to protect the name of any make of his merchandise or manufactures. The same application for the farm name registery will be used as for the regular trade mark and the fee will be $5. This fee will be a small matter to the man who wishes to protect the name that he may mark his fruits and who has a large traffic in his own products. But for those who wish simply to protect their name the $5 fee will be somewhat of an objection. We think possibly the Missouri plan where the fee is only nominal and where the name is protected for each county in the state, that is, the same name may obtain on a dozen ranches located over the state providing no two ranches in the some county have the same name is a better plan.

There is one good point in this law and that is that it places the farmer on the same basis as the manufacturer or merchant in that they may protect the trade mark. The act is purely for commercial purposes and not of so much value for those who for largely sentimental reasons wish to protect their farm name.

RAISIN DAY.

Raisin Day was entered into with a hearty spirit which should please all concerned with the growing and marketing of the raisin. We do not know how general the observation was in the East, but in towns of this coast surely the good will expressed, and the raisins eaten, will reduce the stock of hold-overs. In Los Angeles, hotels made raisin pies, cakes, bread, doughnuts, salads and even soups. For this latter dish we believe the Alexandria Hotel held the unique distinction of having the exclusive formula. But the raisins eaten on this day is a small factor in the good done. The actual good is in calling attention of those who eat to the fact that the raisin is not only a most agreeable food, but a most nourishing and healthful one. The state seems to be looking to the prune men to take up the next campaign and instruct us as to whether the prune is used as a food for humans, then perhaps we will reduce the surplus prune output.

CHERRY DAY.

San Leandro is planning for a great celebration in July to commemorate the fact that it is a great factor in the production of cherries. We believe it has no expectation of equalling the wide spread popularity which was secured by the Raisin Day Committee, but will simply have a jolly neighborhood celebration.

Saratoga had her Prune Blossom Day, Pasadena her Rose Carnival, Hollywood her May Day Flower Show, Sacramento her Camellia Day, Santa Rosa her Rose Day and so on over the state. Let each community have a celebration on its birthday or other occasion which advertises it and brings it citizens together in a closer bond.

MISSION ARCHITECTURE.

We are informed that the supervising architect of the Treasury has decided that hereafter Government buildings erected in California shall be built in the Mission style of architecture. The belfry towers, red tiles and characteristic arches are supposed to enter into the style of architecture and it is most gratifying to Californians to note that the Department has accepted this characteristic style of architecture and hope its use will become popular with all public buildings. We understand Riverside is to be given the first building in this style.

LUMBER TARIFF.

The country over has taken it for granted that the revision in the tariff assured free lumber; but, from present indications, lumber interests are great enough to prevent the consumation of this desired end. Even the Pacific Coast with its vast lumber industries is, we believe, almost unanimous in its desire for this step which it is believed will result in extending the life of that industry in this country. If Congress wants to make a real revision, let it give us free lumber.

According to information received by the Department of Agriculture through the Department of State, the Belgian Government has issued a decree, effective May 1, removing the restrictions previously imposed against the importation of cattle from the United States because of the existence of foot-and-mouth disease.

Automobiles in Hawaii are held responsible for the rapid deterioration of the public roads, which is now causing considerable concern. New methods of road making will be tried, including the petrolithic tamped system which it is hoped will prove more serviceable than the present macadam surface.

Agricultural Notes of the Pacific Coast

Northern California

Red Bluff, Tehama county has a wool scouring plant now in operation.

Placer county is discussing the advisibility of a good roads campaign.

One firm at Willows has planted this season 11,000 Symnra fig trees.

A meeting of wine and raisin growers is to be held in San Francisco, May 18.

Spud growers are tickled over the price to which good potatoes are now soaring.

The Geyserville prune growers have recently been shipping a quantity of last fall's crop.

Two horses were recently killed in Glenn county because of being affected with glanders.

The State Fair proposes to have an ostrich race as one of the features of the coming fair.

The Central Milk Co. of San Francisco was recently fined $200 for selling adulterated milk.

Two farmers near Suisun will furnish a San Francisco crockery firm 100 tons of tule grass.

Farmers and especially grain growers would have appreciated more rain during the month of April.

Much butter is going into storage in San Francisco and it is thought bottom prices have been reached.

A co-operative dried fruit company composed of growers about Winters will soon build a big storage ware house.

Hayward's Poultry Producers Association recently entertained the San Francisco's Grocers Association at a banquet.

The first box of California cherries to go East was from Vacaville, Solano county. On April 22nd it was sent to Philadelphia.

Wholesale killing of horses has been going on at a large ranch near Gridley in the hope of stopping the epidemic of glanders.

The Alfalfa Farms Co. of Jacinto, Glenn couny, has completed a half dozen wells which will be used for irrigating alfalfa land.

The Sacramento Valley Sugar Co., has contracted for the growing of several thousand tons of beets in Butte valley, Siskiyou county.

Placerville, Eldorado county, occupies the unique position of having a barn wrecked by a stroke of lightning during a recent storm.

The San Francisco Wholesale Dairy Exchange is protesting against the advance in icing charges in car loads of butter and eggs from Eastern points.

One Red Bluff wool producer reports a sale of wool at 24½ cents, which, so far as known, is the highest price secured by a California wool grower this season.

Owners of sheep which are to be grazed in the National Forests must comply with the rules and have all sheep dipped and show certificate that they have passed inspection.

A big unfermented grape juice plant of the East seems to have a strong hold in the Eastern market so that California grape juice producers have found difficulty in securing a market for their output.

Central California

The Rasin Day Committee are elated over the success of the Rasin Day observation.

Alfalfa hay at Hanford is now selling at $7 per ton and is somewhat mixed with foxtail.

The Turkestan alfalfa at Tulare station is proving a better winter grower than the common variety.

King's county has purchased a dipping plant to be used to eradicate cattle tick from cattle of that county.

About half of the Tulare Indian Reservation near Porterville has been placed in the Sequoia National forest.

Selma sent 40,000 quarter pound cartoons of raisins to extreme Eastern points for distribution on Raisin Day.

Local berries from San Joaquin valley are now replacing the southern varieties which earlier filled the market.

The Monterey Mule Co., is now incorporated with a capital stock of $50,000. Its principal place of business will be Salinas.

The two sugar factories at Corcoran and Vasilia will consume about 30 car loads of beets per day. The season will last about 100 days.

More intensive planting is urged for the lands west of Hanford. It is pronounced to be an exceedingly good location for tomatoes and vegetables.

Tulare county stock men joined in extensive dipping operation to more perfectly eradicate the Texas fever tick.

A prospective colony of Germans inspected lands about Exeter recently with the expectation of making a home in that section.

Farmers who were fortunate enough to have early cutting of hay have rushed their product to market as rapidly as possible so as to secure the high prices.

The old California Rasin Grower's Association is not allowed to die a peaceful death, but is still disturbed with litigation which it is hoped will soon be settled.

The Melon Growers' Association of the Alta district, Tulare county, shipped 141 cars of melons last year. It is hoped to handle a still larger output the coming year.

The Foothills Citrus Farms Co., having large holdings on mesa near Bakersfield are enabled through development of wells to make extension of the orange plantings.

Owing to the loss of a weir in the King's river, irrigationists near Hanford have been inconvenienced by a shortage of water for a time. This weir originally cost about $20,000.

The Corcoran Sugar Co., is now employing a number of men fitting up the factory for the coming season which will begin about June 1st. When in full swing the factory will need about 100 skilled men.

A hot time has been experienced in Tulare county over the refusal of the Horticultural Commission to allow a car of trees from the Southern end of the state infested with scale to be sold. It was maintained that the infestation was exceedingly light and that no injury would have come from the planting of the trees.

Southern California

Indio reports large numbers of turkeys hatched and doing well.

Over 8,000 acres of sugar beets have been planted about Alamitos.

A full car load of eucalyptus trees was recently sent from Redlands to Banning.

Orange County Board of Supervisors have elected Dr. H. J. Stevens, county veterinarian.

The Florida Orange Growers have been shown California methods of fruit packing during the last week.

J. H. Reed, the veteran tree warden of Riverside who recently resigned, has been prevailed upon to withdraw his resignation.

Imperial Valley hopes to market barley during the month of May and that means the probable securing of the present high price.

Large numbers of seed bed orange trees have been planted this year. It is thought that a lower price will prevail within the next few years.

Japanese celery growers of Orange county have decided to join the Celery Growers' Association and unite with white men in marketing their output.

The marketing of the regular onion crop of the Coachella Valley is now in full blast. They are selling for approximately three cents per pound.

The Reclamation Service is still making surveys to determine the advisability of a canal to the Coachella and Imperial valleys from Laguna dam.

The Santa Fe cut off which is planned through Southeastern California and a part of Arizona will open up a large quantity of magnificent land in both California and Arizona.

It is rumored that Jap and Chinese gardners have formed a big vegetable trust and are endeavoring to secure possession of the Los Angeles market and control the entire vegetable output of Southern California.

Some walnut growers of Ventura county are now turning under a rank growth of foenugreek and other green manure crops. It is also reported the Limoniera Company has an apparatus for cutting up the finer prunings from the trees and plowing under.

The Texas horticultural commission has served notice on the commission of California that oranges shipped to that section, infested with a scale, will be confiscated and burned and if it should come in any quantity, a rigid quarantine will be established preventing its entering the state.

The members of the Tri-Counties Reforestration Committee which recently held its quarterly meeting at Riverside, reported progress in the matter of spreading of storm waters of the Santa Ana river over waste land so that the water has been conserved in the lower strata of gravel.

We have often seen reference to northern fruit, especially oranges, being shipped under the Los Angeles brand, also recently large shipments of asparagus were shipped under the brand of a Los Angeles shipping concern. This always causes adverse comment on the part of the northern growers. Now, we note Southern Californians are up in arms because Southern California raisins are shipped as Fresno raisins.

The Coast

Spokane, Wash., is eating Florida grapefruit.

Many apple trees were set out during the past season at Chelan, Wash.

The Walla Walla, Wash., county bee keepers have formed beekeepers association.

Farmers at Ferry, Wash., are finding the use of blue stone valuable in keeping down weeds.

A ten acre apple orchard in the Hood River section, Oregon, recently sold for $1000 per acre.

The interior department has thrown 200,000 acres of land along the Green River, Colorado, open to entry.

The price of export flour at Seattle, Wash., has advanced 25 cents per barrel and is now reported at $5.65.

Squirrels are destroying the winter wheat and other grain crops through Columbia and Umatilla counties, Oregon.

Farmers about Pueblo, Colo., have secured control of the city market, and are marketing their own produce direct.

Colorado apple growers have planned for a National Apple Exposition to be held in Denver next December.

Garfield, Wash., ranchers recently bought an entire train load of cows to be fattened on Whitman county pastures.

The orange groves near Yuma have been cleaned of all fruit and no more shipments will be made until November.

Vast numbers of sheds have been erected on the Alaska Yukon ground for the cattle display which will open on Sept. 27.

A sharp rivalry exists between creameries at Marshall, Wash., for the milk of that section and good prices are paid to growers.

The demand for heavy draft horses at Pullman, Wash., is in excess of the supply and a fairly good span commands $450 to $600.

A lumber company at Marshfield, Oregon, has succeeded in making paper pulp from stumps and waste material from the mills.

The Douglas county creamery at Gardnersville, Nev., report a successful season. During the last six months the patrons were paid $36,000.

The third annual fair of the Woodburn, Oregon, Horse Association recently closed after a most successful run, 6,000 people attending.

Washington State College has a large increase of the live stock belonging to that institution. High bred cattle, sheep and hogs make up the recent large purchases.

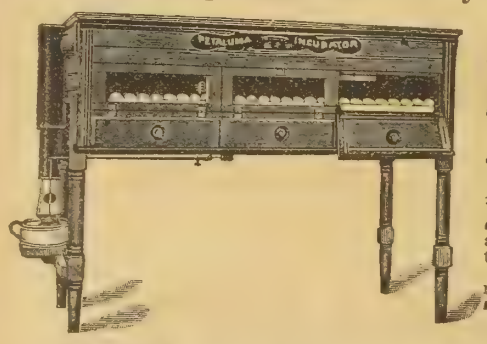
A new tract of land will be opened up and improved near the city of Denver by which 12,000 acres will be brought under irrigation and made a vegetable and fruit producing centre.

Preparations have been under way since last fall for holding the second annual Colorado Inter-State Fair and Exposition, which will take place at Overland Park, Denver, September 12 to 18, inclusive. Mr. G. C. Fuller, the secretary of the Exposition, advises there will be complete classification with liberal prizes offered. The premium list will be ready for distribution the latter part of May.

Don't Forget Quality

MIDLAND Poultry Food

Is based on ***quality*** and it is quality in Poultry Food that produces eggs. ***Cheap filler*** and ***cheap grain*** will ***not*** make eggs. ***Midland Poultry Food*** contains only the ***choicest*** cereals and animal food the market affords. You ***can't*** afford to try and be successful and not get results. ***Midland Poultry Food*** will produce results. Try it and see. $1.95 per sack



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Are still here, after others are gone. ***The Standard of the World Machine.*** Winners of ***more prizes*** awarded by ***World's Fair Judges*** than any other make.

Remember, we make a hot water machine. One of the ***best hot water machines*** on the market.

Send for our Illustrated Catalogue.

Petaluma Incubator Company

Petaluma, California

Our General Agents for Incubators and Brooders and Midland Poultry Food:
Petaluma Incubator Co., Petaluma, Cal.
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When the chicks are hatched don't feed them anything for 24 hours, then feed them the best dry Chick Feed you can get. We say that is

West Coast Chick Feed

SAMUEL R. KELLAM, former president of the L. A. Co. Poultry Association, says: "West Coast Chick Feed is the best feed for young chicks I have ever used. I have given this feed a thorough test, and have always found that it produced fine, large, healthy chicks."

MRS. A. BASLEY, the celebrated poultry authority, says. "I want some more of your West Coast Chick Feed, for it is excellent. It is purer, cleaner and appears better balanced than other feed I had been using, and to tell the truth, I have been experimenting, feeding both together, and they always eat yours in preference."

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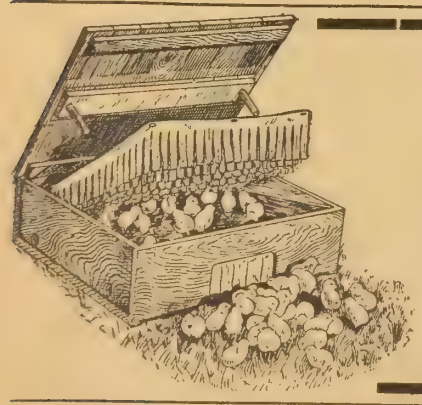

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Profit in the Poultry Yard

By Mrs. Frank Metcalf

We solicit short articles of a practical nature from the fancier and utility breeder, giving their experience with poultry. All inquiries pertaining to feed, management, disease and its prevention will be answered through these columns.

A FEW WORDS.

THERE is a great deal of controversy regarding the balanced ration and the fact remains that the perfect one has not yet been found. Scientific investigations prove that such and such foods, contain such and such elements, but, true it is, that these elements change during the process of digestion, and in different individuals produce entirely different effects. So with breeds, what one breed will thrive and lay well upon is not sufficient to keep another breed in health.

We can only study our flocks and try to find which food combinations "agree" best with our particular kind of fowl. Then when we are sure that we have discovered the ideal diet, along comes a condition of weather or a state of health in the fowls themselves that knock all our theories skyhigh, and we have to go hunting and experimenting all over again.

Diet.

To me, it seems that fowls relish a change of diet as much as we do and that to stick to one food, or combination of foods, for any length of time, is to invite trouble. Therefore, I believe it is well to change the grain often.

Wheat, we know, contains nearly all the elements necessary to sustain life, yet, a continued diet of wheat will induce leg-weakness because of its hardness and the tax upon the digestive apparatus. Corn contains heat-producing elements and fat forming material and is indispensable, yet cannot be fed alone. Milk is excellent, but is best fed in moist mash, which should not be used more than every other day. Fowls do not as a rule, take readily to milk as a drink, and it does not take the place of water and if left standing long in the drinking vessels becomes so sour as to be a menace to the health of the flock. Oats and barley are good foods, oats especially so, but do not make a perfect food. Meat they must have, and the ideal way is to give green cut bone with some meat adhering to it, fed fresh. One-half ounce to a fowl is sufficient, once a day, and if diarrhoea should result, every other day. Grit and shell they need "in their business" and they must be kept constantly before them, or, first we know, soft shelled eggs provoke us to wrath at our shortsightedness.

Green food must be provided all the year around, and, anyone who has a flock of hens to see after, has duties which must be done, and done every day and to the genuine chicken crank, these duties become pleasures, but to the busy man or woman, who has enough to do without bothering with chickens, these essentials are often sadly neglected, and the fowls kept in a hap-hazard fashion which does not result in satisfaction to any one concerned. Neglected fowls do not pay because they cannot maintain health and vigor unless given the wherewithal to secure it.

Over-pampered fowls, on the other hand, become useless from over-indulgence just as pet poodles become wheezy and asthmatic from the same cause. It takes study and time to find out just where over-feeding begins, and those who have not the requisite patience better not attempt the chicken business. Examine the birds for fat, at times, and if you can feel great layers of it around the egg organs, you must let up on the food.

Over-fat hens will not produce fertile eggs and are prone to drop off the roost with apoplexy any night.

Exercise.

Exercise is good for fowls at all times and the old woman's method of "chasing them up and down a greased plank" had wisdom back of it, though mythical. Litter is not always available, but one can spade a place in the ground and bury the grain in that, so they will have to scratch for every grain in this country where the ground never freezes. If they miss a few grains, they will sprout and make all the better food, and if the ground is sprinkled so as to keep it moist, so much the better.

Make 'Em Scratch.

A very good way, where the ground is mellow, is to have a garden hand plow, turn over a furrow the length of the yard, put in the grain and plow it under. The fresh ground attracts the birds, who soon find the grain, and look for it every morning. Then what glorious wallows these furrows soon make and a new place may be turned over thus keeping the ground sweet by contact with sun and air. "Keep your fowls, and by and by they will keep you."

The properly balanced ration consists of one part protein to four parts of carbonaceous food. This ratio is all right for only part of the year as changes in the weather and the hens condition make different rations necessary. Take the spring time, when the hen is in natures condition to reproduce her kind, less of protein is really needed than at any other time of year, yet that is the very time when most people feed more.

During the summer months this ratio may be kept up until towards the moulting season, and then, as the hen is required to renew her coat of feathers, and lay too, the protein may be gradually increased until nearly 33 per cent is used, at the height of the moult, when the ratio may be as gradually reduced to the 20 per cent for winter again. Those who have tested this way of increasing the protein during the moult, claim that a good egg yield is possible, as well as a glossy coat of feathers.

To continue the protein too far into the spring months, invites early moult. That is, to continue more than the 20 per cent ratio demanded by nature, and if protein is to be with-held at any time of year, spring is that time.

A correspondent claims to study the seasons in this way and to be able to keep his flock up to the limit of profitable egg production all the year around, as well as to maintain a high fertility during the late fall months, and, in fact, the whole year.—Mrs. Metcalf.

Riverside has declared war on the English sparrow.

POULTRY QUERIES.

Diarrhoea.

Will you kindly give me some information regarding a disease among my chickens. They seem to have a diarrhoea, and become stupid and in a few days they die.

Your chickens seem to suffer from indigestion in some form, but unless we know more about the food and care we cannot advise definitely. Baking soda in the drinking water sometimes helps in cases of this sort, but a dose of castor oil or a pill would be more effective in the earlier stages, also a change of diet. Sometimes parched corn helps wonderfully. Too steady a diet on one kind of grain will cause this trouble, and too rich food will also cause it. Stimulating mashes are a prolific cause of it, and lack of grit and shell may be a cause. If lice or mites abound, the weakness resulting from the annoyance would cause it, so it is difficult to assign the reason without further facts.

Fits.

Will you kindly tell me what is the matter with my little chicks. They droop for a day perhaps, then seem to have fits. Their heads draw back and when touched seem to be in great pain and only live a short time. They have large range, plenty of green grass also alfalfa. I feed chick food, Egyptian corn; keep charcoal, grit and shells before them.—Mrs. L. A. B., Selma.

Musty food will cause symptoms of this kind, as would improper incubation, or injudiciously inbred parent stock, in rare cases. Poison may also be suspected very strongly, where chicks have large range, so if any spraying has been done to kill insects and the grass wet with it, they may have eaten some of that.

HOW TO USE HEN MANURE.

Hen manure, like Peruvian guano and all other fertilizers rich in ammonia, should not in its fresh undiluted state be permitted to come in immediate contact with the roots of plants, nor with the seed. The floor of the poultry house should be strewn with powdered muck, or woods earth, or land plaster to fix the ammonia and purify the atmosphere. Subsequently the manure should be composted before being applied to the field. Usually for vegetables it should be broadcasted nearly always applied in liquid form, and raked in. For greenhouse use, it has the tendency to "burn" if used to excess, and like all other nitrogenous manures produces leafage rather than bloom.

The dung of all domestic fowls and of birds generally has marked manurial properties on account of the large amounts of ammonia and phosphate contained. Hen manure could be successfully used for any greenhouse crop if composted with five times its amount of soil (or better, sods), and to every barrel of manure fifteen pounds of pure ground bone and five pounds of sulphate of potash, the whole to be cut down and well fined and mixed before using. The same could be used for vegetable growing in the hills, or could be simply mixed with enough dry earth plaster or rock phosphate to dry earth plaster or rock phosphate to dry it and be spread on the garden and harrowed in.

All greenhouse crops thrive equally well with the use of hen manure. For the purpose of watering plants the proportion of manure that may be mixed with water varies according to the sort of plant. About one ounce to two gallons of water may generally be used with safety; some plants will, however, bear a stronger solution.

An excellent plan of applying hen manure is to mix a portion with (in any case) several times its bulk of soil or garden refuse, and so form a fertilizing compost which may be applied to almost any garden crop with excellent results. Composts thus prepared become useful in two ways. The powerful properties of the manure become, when mixed with soil, partly absorbed by the latter and are thus rendered less harmful, and at the same time the decomposition of all the vegetable matter is hastened.

The quality of poultry manure to apply also depends somewhat on the nature of the soil. If broadcasted on the land and well worked in with harrow or rake, as much as 1,000 pounds per acre may be used. Damage from its use occurs mostly when applied to crops in hill or from lack of rain. We have never seen too much used. The difficulty has been that farmers use too little of that duplicate guano.

If the poultry droppings are collected daily, mixed with an equal bulk of dry dirt and stored in barrels, they will be in excellent condition for use in the garden when required. But the frequent admonition to keep them dry should not be followed. If allowed to become dry in the poultry house, portions soon reach an insoluble condition. If collected daily and kept somewhat damp, not wet, they will not lose ammonia, and will give better results when applied to the soil.—Rural Farmer.

HOW TO PLUCK CHICKENS.

Of course any housewife knows how to pluck chickens, but do they know how to prepare the birds so that they will be attractive to the eye (which counts much to the purchaser)? When a bird is plucked dry the poultryman will receive more per pound for the fowl than when it is scalded.

In picking dry, the breast should be plucked first, starting near the crop. After the breast the thighs, then the back near the base of the tail, and last the wings. As soon as the feathers have been removed the wings should be twisted over the back and the feet washed, after which the thighs and legs should be pressed to the body either by placing a brick on the bird's breast or by tying the bird, the object of this being to give the bird a plump or blocky appearance.

Any aged bird may be scalded without seriously injuring its quality if it is properly handled; but owing to the large number of poorly dressed scalded fowls the marketmen place a premium of from 1 to 2 cents a pound on dry-plucked stock. Boiling water may be used, but care must be taken not to leave young birds in the water too long, or the skin will cook, while with old fowl a little more time may not do any harm. The head and shanks should be kept out of the water, as the scalding will discolor them and make them unsightly.

Immediately after the bird is taken from the scalding water it should be dipped into cold water to stop the cooking, and, as poultrymen say, to "plump the bird." The bird should then be hung to a line with feet tied together, as no bird plucked on the lap or a table will have so good an appearance.

If a scalded bird is exposed to a draught when being plucked or when cooling, the skin is likely to harden and become tough. It is because of these possibilities that dry plucking is recommended by large raisers of poultry, as the condition of the skin to a great extent accounts for the high or low returns received.—The Farmer.

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Throw it out in the Litter and Make them Work

COULSON'S SPECIAL DRY CHICK FOOD, during the five years it has been on the market has justly earned for itself its great reputation as a life-saver for little chicks by its special adaptation to their needs.

THE UTMOST CARE is observed in the selection of each of the dozen or more articles composing this unequaled feed; tender seeds, cracked grains blown free from dust, steel-cut oats, tiny pieces of dried meat and bone, willow and pure bone charcoal, are combined with other very necessary ingredients; every article being selected with special reference to its quality, strength and desirability for the needs of the young chick.

FOR YOU TO BUY the many different articles composing Coulson's Special Dry Chick Food is quite impracticable; you could not be certain as to their quality for one thing, and the high cost of certain of them when purchased in small lots might lead to their being left out to the detriment of the chick.

TO MAINTAIN the present high reputation of COULSON'S SPECIAL DRY CHICK FOOD, nothing is left undone to make it absolutely the best feed that can be made for the little chicks.

COULSON'S SPECIAL DRY CHICK FOOD can be fed exclusively to your little chicks for the first six weeks, at a cost of about four cents (4c) each; and what is of still greater importance, it will do all that can be done in the way of feed, to bring them through that critical period of their lives in full health and vigor.

TO RAISE EVERY CHICK you hatch; to have fine, large, healthy chicks; to have chicks that will stand up and crow when eight weeks old; to raise chicks that you will be proud of, FEED COULSON'S SPECIAL DRY CHICK FOOD, THE LIFE-SAVER. Write us for free samples and prices.

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EGGS IN INCUBATOR NEED AIR.

One of our neighbors, who was hatching hen eggs in an incubator, took them out to air in a moderately warm room when they had been in the incubator 15 days. She got busy with her work and gorgot all about the eggs for over an hour. When she remembered them she thought of course they were all spoiled—chilled to death. But as they were so near hatching time she put them back into the incubator and got an extra good hatch of extra strong chicks.

Another woman had to move when the incubator had been running 14 days. She thought, of course, she would lose the eggs, but as it would not cost much, decided to move them. She lined two buckets with cloth, put the eggs into them and carried them half a mile. She put the incubator into a spring wagon, had it hauled to the new egg house, lighted it and put the eggs into it. She got an extra good hatch of extra strong chicks.

Give eggs from an incubator a good airing in a warm room from the fourteenth to the seventeenth day. I do so with good results.

Another woman had the usual instructions to keep the thermometer at 103, but happened to have a thermometer that had a long mark at 104. Without looking closely she thought that was meant for the right place. She kept the thermometer at 104 and above the first week before she discovered the mistake, but as the eggs seemed to be doing well she kept it there during the rest of the hatch. The result, an extra good hatch of extra strong chicks. She secured 93 chicks from 94 fertile eggs and raised 92 of them.

We only raise a few hundred chicks a year. We hatch in an incubator and raise in brooder in a brooder house. Feed mostly cracked corn and wet or damp bran, all they will eat. We used to feed dry bran, but one day I accidentally dropped some bran into the water pan. Awkwardness, of course. But the chicks seemed to think it was done on purpose. They gathered around it and ate it up in a hurry. I then gave them a dish of wet bran and they seemed to like it as well as a child likes candy. That settled the bran question. We now give them all the wet bran they will eat. And that means lots of it. They do well on it with what corn, ground pretty fine, or rather cracked fine, they will eat. But don't give them cornmeal unless it is baked, or the chicks will bake it in their crops. They must also have plenty of water all the time.—New England Homestead.

HOW TO SECURE FERTILE EGGS.

In order to secure a high per cent of fertility in the eggs that are to be hatched it is necessary that the stock be properly bred, reared, housed, fed, and mated.

One cannot expect eggs to hatch well from stock whose parents' eggs lacked in fertility for this trait is apt to be inherited. The ancestors of one's flock must have been strong vigorous birds whose vitality was never weakened by incessant laying or by colds or disease of any kind. They must have been well fed, well cared for, and kept in healthy surroundings.

The chickens must be properly reared to insure a high per cent of fertility in the eggs. Give each mother hen a dozen chicks and coop by herself. Have the coop with as much of the front open as possible for ventilation. Feed the chicks regularly five times daily on corn meal mash mixed with skimmed milk, cracked wheat, fine cracked corn, or any reliable chick feed on the market. Keep a supply of fresh water, grit, and charcoal where they can get it. Give plenty of free range and keep them growing.

When eight weeks old remove to open front colony houses, feed three times daily, wheat, barley, and cracked corn. Supply fresh water, grit, charcoal as before. Provide plenty of free range, and shade to protect them from the sun.

In the latter part of October move pullets and cockerels into winter quarters, allowing five to eight square feet of floor space to each fowl. The larger breeds require more room than the smaller varieties. Provide open front scratching sheds or remove windows during sunny days from closed houses. Supply an abundance of litter and make the hens work for nearly everything they get. Feed regularly wheat, oats, and corn, respectively at sunrise, noon, and an hour before sunset. Water, grit, charcoal, oyster shells should be always before them. Beef scraps, or fresh cut bone, and alfalfa or cut clover (the second crop is preferable) must be supplied once a day for meat and green foods respectively. Do not get the pullets to laying before they are fully developed or crowd them when they get to laying. Let the conditions be normal and the egg production will come as the natural evolution of the pullets' development. In February or March the breeding pens should be mated up. Select the male that is the champion over all the other males if you would be sure of his vigor. Select active females with plenty of vitality. Medium sized birds are preferable to small or large overgrown ones, other things being equal. Allow no more than a dozen females with a male, if the breed is of the American or Asiatic class and no more than twenty-five females to a male, if the breed is of the Mediteranean class. Health, life, constitution, and hardiness, must be taken into account in selection of the breeding pens.

Feed all hard grain, as much as they will pick up clean. With plenty of exercise, fresh air, oats, wheat, and corn, green and animal food, the eggs will be strongly fertilized and are bound to hatch well and produce strong rugged chicks.

So the secret of fertile eggs lies in approaching Nature as near as possible: First, in mating the breeding stock by selecting birds that are superior to their mates, thus following out the theory of evolution, "the survival of the fittest," second, in the rearing of the stock by natural methods, by having free range, using mother hens and open front coops and houses that approach out door conditions; third, in winter quarters by using houses and sheds that allow the largest amount of exercise and fresh air without impairing the health of the flock; fourth, in taking into consideration the natural laws of heredity in the selection of breeding stock whose progenitors have been productive in the matter of fertility.—Successful Poultry Journal.

KEEPING EGGS FOR HATCHING.

The claim that if an egg contains a very strong germ it may be held over two or three weeks before setting without deterioration is a poor rule to cling to. In the first place there is no known way to determine the vigor of a germ; some eggs in every clutch always being weak. Highly vital hens with vigorous mates ought to produce strong germs, but all hens have their off days and so it is not safe to assume that the germ is strong. Again the hatchability of an egg depends as much on where and how it is kept on its original quality. If kept at a temperature of about 50 with atmosphere not too dry and if turned regularly twice a day to prevent the germ sticking to the shell the deterioration will be slow but as eggs are usually kept in the temperature of an ordinary dwelling house in which artificial heat has made the air hungry for moisture the drying out process is rapid; and in such an egg when incubation commences the chick will grow too fast, will crowd the shell and probably be unable to make the necessary muscular exertions at birth for want of space. Many fully feathered chicks are found in shells that do not pip and almost without exception is it found that the moisture had evaporated too rapidly, causing them to overgrow.—Farm Stock and Home.

The feed and drinking vessels of poultry should be frequently washed out with scalding water. One advantage of using hot water for disinfecting purposes is that it is non-poisonous and does not produce any bad after effects. Cleanliness is one of the secrets of success with poultry.

One of the most important details in building a poultry house is to arrange the doors and windows in relation to the perches in such a manner as to prevent the least draught

AN ADVERTISING ANNIVERSARY.

The firm of N. W. Ayer & Son, of Philadelphia, the largest advertising agency in the country, celebrated yesterday by a dinner at the Bellevue-Stratford the fortieth anniversary of the founding of the firm on April 1, 1869. Ayer & Son state that they have more faith in advertising today than ever before. Looking backward, they see hundreds of business men who a few years ago said, "Advertising would do me no good," but who today are using it regularly and profitably. Looking forward, they see hundreds more who will either have to adopt this modern trade-building method or see their business go to more enterprising and progressive competitors.

California Farm Names

As promised our readers, we give herewith instructions received from Secretary of State Curry through his deputy, Mr. H. C. Waring, regarding the securing of trade mark privilege for farm names. From Mr. Waring's letter we quote:

"In accordance with your request, I enclose blank form for filing Claim to Trade Mark under Sections 3196 and 3196b of the Political Code of Cal. (In effect May 7, 1909). This office will not have a special form for this class of Trade Mark, but will have the general form made to fit this new kind of Trade Mark as well as the others. The enclosed will show what facts should be stated. Those desiring to file need not get blanks printed by this office, but should follow the enclosed in drawing up their Claims to Trade Mark.

"As to the purpose of these new sections, it appears that they were enacted to make farms and their products the objects of trade mark the same as goods imported, manufactured, produced, compounded or sold by any mechanic, manufacturer, druggist, merchant, or tradesman is made the objects of trade mark by Sec. 3196 of Pol. Code. In other words Sec. 3196 seems to specifically mention the particular callings that are entitled to have their goods protected by trade mark without mentioning farming. These two new sections are no doubt added for this purpose. Hon. L. H. Wilson, of Winters, Cal., introduced this measure in the Assembly and he could likely tell you the exact object it is intended to cover, if this reason given be not the correct one. Fee for filing a Trade Mark is $5.00."

We fear this plan will dissappoint many of our subscribers, that is, the fee of $5 required is more than many will wish to pay for simply protecting the farm name when it is largely for sentimental reasons, however, there is no harm done in the act and nothing prevents those who still wish to select a name for their farm from fixing upon such a name.

From farm names received this week we have the following:

"Alberta Orange Grove," owner, A. E. Rudell, Rialto, San Bernardino county. In writing in his farm name, Mr. Rudell wishes to know the address of proper party to file application with for farm names. This is given above.

"Moen Ranch," owner, E. O. Eggin, Hemet, Riverside county. Mr. Eggin says that he has made application to the Secretary of State for the registration of this name and adds "Moen is a very common farm name in Norway where every farm has a name and is recorded and taxed under such name. "Moen" means a piece of flat or level land. My farm or ranch is situated 2¾ miles southeast of Hemet and is covered by Lake Hemet water certificates."

"The Oaks," owner, F. M. Leasure, Tulare county. Mr. Leasure writes: "Our place is one mile west of Tulare on the Hanford road. I will mention a freak which we have which will probably be of interest to your readers. I have an 8½ months Jersey calf which is now giving three-quarters of a pint of milk each day."

Mr. Joseph Thorndike of Pasadena writes that he is much interested in the farm names and the registration of these and wishes information as to action to take to secure the protection. That is given above.

"Myrtlehurst," owner, Mrs. Alfred J. McClatchie, Montebello, Los Angeles county. Mrs. McClatchie is the widow of the late Prof. Alfred J. McClatchie who wrote "Eucalypts Cultivated in United States," issued by the Bureau of Forrestry, Department of Agriculture in 1902. Prof. McClatchie was also the author of many bulletins issued by the Arizona Experiment Station with which he was connected several years. The bulletin on Eucalypts, known as number 35, is unfortunately now out of print, but it is the most complete work which has yet been issued on this popular tree.

When Prof. McClatchie died, Mrs. McClatchie bravely took up the work of preserving the little ranch at Montebello, which is just without the outskirts of the city of Los Angeles. Prior to moving to Montebello, the family had a small ranch at Gardena which it was anticipated would be planted almost entirely to Eucalyptus, the work amongst which the Professor had spent much of his life. Naturally, the Professor wished a name which would honor his loved tree, so he chose Myrtlewood. Mrs. McClatchie now wishes to honor the Montebello home with a similar name so chooses Myrtlehurst. The eucalyptus belong to the myrtle family.

THE COUNTRY IS BETTER.

Replying to a request of the Spokesman Review for his sentiment as to the opportunities of country life as compared with city life, ex-Governor Geo. C. Pardee wrote:

"In reply to your request for a word of encouragement to the Country Life Booster club, that, in my judgement, the fact that almost every city dweller wants to live in the country, is proof that the country is better than the city as a dwelling place.

"Nowadays, with the telephone, the free rural mail delivery and the ability, by means of irrigation, to make a comfortable living from a few acres of land, the country is not isolated as it formerly was from all the activities of life which the young so ardently crave. Schoolhouses are becoming so plentiful in the country that it is only in exceptional cases that the children have to make long journeys to attend them.

"Small farms make compact communities, so that the country dwellers are able to hold easy communication with each other, and the results of intensive curtivation are becoming so remunerative that it is no longer necessary to go to the city to gain a comfortable livelihood.

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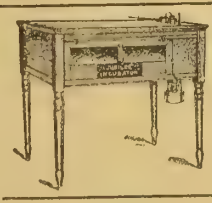

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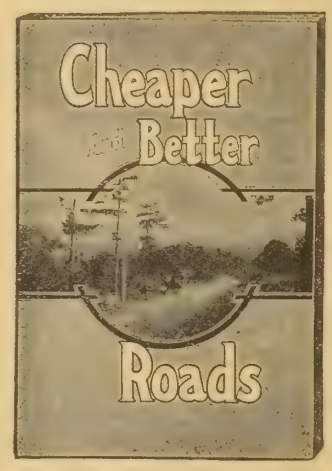

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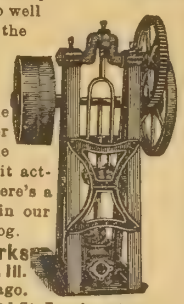

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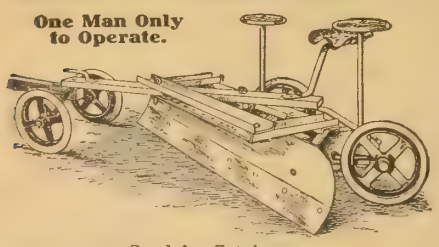

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At present there is a great demand for the gasoline engine on the farm. There are many things that can profitably be done with it. It is the most desirable type of engine now found on the market for the farmer's use.

The farmer who is about to buy a gasoline engine does not always know exactly what he wants. Many questions naturally arise in his mind as to the make of engine to buy, the size, type, kind of cooling device, and the various other points of selection. He has probably read the catalogs and advertising matter of from one to twenty different engine companies, and knows less about what he wants after reading this matter than he did before. The prospective purchaser cannot depend too much on some of this advertising matter, as many of the claims are extravagant and unreliable. It is true that the advertising put out by the standard companies can usually be depended upon; but it is not always just what the farmer wants to aid him in making an intelligent selection of his engine.

The buyer should have some ideas of his own, and should select his engine according to requirements and conditions. He should not correspond too much with unreliable firms, and especially with those companies that put out cheap engines. The engine that is bought by correspondence usually does not have a representative in the same state as that in which the engine may be placed, and consequently there is no one to show the buyer how to operate the new engine. He must depend entirely upon the printed directions, or perhaps upon a catalog for his information.

The engine should be secured from some reliable firm that has a representative in a nearby town. Then, in case an expert is needed, or repairs must be secured, either may be easily obtained on short notice. The recommended type of engine is one which is well constructed from good material and is manufactured by a company that stands responsible for its success.

The engine of standard and reliable make may be somewhat more expensive in first cost than some of the other makes, but it will give better satisfaction and is cheaper in the end.

The gasoline engine should not be a complicated machine, but rather of simple design, with as few parts as possible. It should be so constructed as to be easily adjusted and kept in repair. The wearing parts, bearings, and small parts should be well constructed. Select the engine for simplicity, reliability, durability, and, lastly, but not least, for economy of fuel consumed.

A good farm engine should be able to run on not over one pint of gasoline per horse power for each hour. According to this, a two horsepower engine would require one quart of gasoline for each hour of work. An engine must have good compression in order to be economical in fuel. The mixer should require no regulating for the air. When the gasoline has been turned on and the engine is started, the air should feed without regulation.

Of all the methods of cooling the gasoline engine cylinder, the water-cooling method must be considered superior.

Select an engine with a good sparking device and then always use a good battery with it, and one of the greatest sources of difficult operation will have been largely overcome. The small dynamo or magneto is very successfully used in the place of a battery. The dynamo is more expensive than the battery in first cost, but it lasts very much longer and always insures a good spark.—H. M. Bainer, Colorado Agricultural College.

An Injury to Irrigation Interests.
Lands which have been over grazed, encouraged washing and injury. to land as well as to orchard interests below.

DESERT WATERING PLACES.

THE southwestern part of the Great Basin—that portion of it including the arid areas of southeastern California and those of Nevada that are most easily reached from California points—is known generally to the dwellers in the less arid districts west of the Sierra as "the desert," but local names are applied to its various subdivisions. The most important of the subdivisions are the Colorado and Mohave deserts and the Death Valley region. The Colorado Desert extends from San Gorgonio Pass southward to the Gulf of California and includes the depression known as the "Salton Sink." The Mohave Desert lies farther north and its boundaries are not so definite, but it includes much the greater part of San Bernardino county and the eastern portions of Los Angeles and Kern counties, Cal. The Death Valley region, which lies north of Mohave Desert, stretches eastward from the Sierra Nevada, covering a large part of Inyo county, Cal., and extending into Nevada. It is named from its central feature, Death Valley, the lowest point on the continent.

Resources of the Desert.

At the present time public interest in this desert region, which comprises an area of about 68,000 square miles, is intense, largely because of the discovery and development within it of mines that are heavy producers of gold. The resources of the desert, however, are not confined to the precious metals but include a wide range of products of economic value, among which may be mentioned several valuable salts, including borax, soda, gypsum, and common salt; building material, including marble, onyx, brick clays, and cements; baser metals, like copper, iron, and lead; and gems, among which are turquoise and opal. These products are widely distributed throughout the desert counties, and although the existence of some of them in commercial quantities and available form is as yet problematic, others already form the basis of important industries.

Wells and Springs.

The wells and springs of the desert region are few in number and very irregularly distributed—so irregularly, indeed, that while in some districts watering places occur in groups, in others they are 30 to 50 miles apart. Unusual activity in railroad work has so stimulated prospecting that there is a large influx of strangers, many of whom do not fully realize the danger of traveling through an arid region, and it is highly important that the springs and other watering places should be located as definitely as possible and described for the benefit of prospectors and other travelers. It is believed that this urgent need for the dissemination of information in regard to the location of known watering places and the possibility of locating and developing water at other favorable points will be met in part by a report by Gilbert E. Bailey, which has just been issued by the United States Geological Survey as Water-Supply Paper 224.

For many years Mr. Bailey was obliged to travel repeatedly many of the main desert roads and trails, and the information presented in his report was in the beginning intended for his personal use. The author's acquaintance with some of the desert districts is necessarily more intimate than with others, and the records are therefore by no means complete nor are they of uniform value, but it is believed that on the whole fairly adequate and accurate descriptions are given of most of the better known and more accessible springs and wells, and that many of those that are less well known are included. More than 300 watering places are described and mapped, and the map shows also a number of the principal roads through the desert. These roads have not been surveyed and only approximate locations are possible, but the map at least indicates the usual routes of travel.

A copy of Mr. Bailey's report can be obtained on application to the Director, Geological Survey, Washington, D. C.

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Return Limit—For May, June and July sales, three months after day of sale. For August and September sales, October 31, 1909.

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ST. LOUIS, MO.—Royal Arcanum Supreme Council. Sell May 15, 16, 20, 21, 22. Rate, $67.50.

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Legal Queries

Edw. L. Payne, attorney, 301-304 Douglas Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Payne is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Irrigating Ditch Right.

An irrigating ditch has run across my land for something like twenty years or more. No right was granted or shows on record in any manner. Please tell me what right they have to maintain the ditch. How much land can they claim on each side of the ditch. Can they clear the ditch, or dig it deeper and throw the material on my crops?—Subscriber, Arroyo Grande.

If the party who placed the ditch upon the land, or his successors, has claimed the right to have it there adversely to the owner of the land, the time has certainly been long enough to vest the title in such person or persons. They have no right to any land on either side of the ditch, but would have the right to enter upon your land to maintain the ditch in proper repair, but not to damage your crops by throwing material from the ditch upon them, or in any other way. They have no right to make the ditch larger or deeper than is necessary to carry the quantity of water that has ordinarily been carried.—E. L. P.

Storm Water Damage.

My land is bottom land. My neighbors above, this winter, made ditches to drain some land, in place of letting the water seep through the grass. Because of these ditches the water rushed on to my land, and damaged me by washing a ditch clear across my bottom land about eight feet deep and thirty feet wide when the heavy rains came on. What can I do?

You have a right of action for damages against those who caused the trouble, for, as I have repeatedly said, one may not turn waste water onto his neighbor's land to his neighbor's damage.—E. L. P.

Drainage District.

In case we organize a drainage district, do we pay on the land we hold or the land drained?

Section 9 of an act to promote drainage, as amended February 19th, 1909, provides as follows: "Such commissioners must view and assess upon the lands situated in the district a charge proportionate to the whole expense, and to the benefit which will result from such work, which charges must be collected and paid into the county treasury, either in cash or in regularly issued warrants of the district as hereinafter provided, and must be placed by the treasurer to the credit of the district and paid out for the work of drainage upon the warrants of the trustees approved by the Board of Supervisors of the county."—E. L. P.

Right of Way.

1. A sells one-half of farm to B; B buys water stock. The ditch right of water company was to the beginning of A's place. Can the company cut a ditch through A's place for B to irrigate? 2. Can A make B or company pay for right of way? 3. C is at the other side of A's place. Can C irrigate by that same ditch by cuttng holes through fence, when C has box gate so that water can go onto his farm; also other ways of irrigation. 4. Can the company build the ditch higher than it is necessary for A and B, so that C can irrigate? 5. If the company has no right to use the ditch, what can A do to stop it? 6. Can A open C's gate to let water in so as to get water out of ditch?—Subscriber.

1. The Water Company might condemn a right of way for a ditch, but could not make the ditch without A's consent or legal proceedings. 2. A has a right to compensation for the land taken in making the ditch, and for the damage done, in constructing the ditch, to the balance of A's land. 3. C has no right to damage A's fence in order to obtain water from the ditch, nor to go onto A's land for that purpose. 4. The ditch being on A's land, A might recover damage if any were caused by building the ditch higher than necessary for his own use, or possibly, if the injury caused was of sufficient gravity, the raising of the ditch might be enjoined; so far as B is concerned so long as he could conveniently obtain the water necessary his rights would not be involved in the raising of the ditch. 5. Remove the ditch or enjoin its use, provided the other circumstance warrant an injunction. 6. If the gate is on C's land, A has no right to trespass upon the land to open the gate.—E. L. P.

Clean-up day has become popular in nearly all the towns in Eastern Washington in what is known as the Inland Empire.

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Motor Velocipede.

Where can I get such a thing as a motor velocipede? I think there must be a great many others who want what I want, for I notice that even women with husbands and horses often can't get the team when they would like to go some place.

And it practically makes the difference in the choice of a location, forcing us to crowd in nearer town than we wish to be, if we have to do all our going on foot and carry our parcels.

Can you or any of your readers suggest something?

Perhaps it is needless to state that our roads are far from good. A harmless little toy automobile that would go about as fast as a horse and carry 200 pounds or so would appeal to us.—A. R., Arroyo Grande.

It is possible the suggestion may be a good one, but we fear many of our fair readers would find difficulty in keeping the velocipede or motorcycles in good condition. The mechanicism requires understanding of such things and they are most perplexing however. Perhaps other farm readers may have some suggestions. To us it appears that a pony cart would be less complicated and require less attention to the "sparker" than will the ordinary "horseless." The pony would have this advantage that

would be of no value in farm work so that the head of the ranch would not be tempted to use with the larger team, besides the pony has the advantage of costing but little for feed. A motorcycle can be bought from any automobile firm. We take it however that A. R. wishes something which will stand alone.

Cut Worms.

Cut worms are infesting my potato patch, how may I control them?—J. W. H., Los Angeles.

Probably the best method of handling the worms is by placing near the plants wisps of green alfalfa over which paris green has been scattered or the alfalfa may be dipped in liquid poisons. If the poison plan is used a little sweetened water may be used with bran to form a mash and in it stir a small quantity of paris green or arsenic. A small quantity of this should be left near the base of each hill of potatoes. If worms are marching in from the outside, then a furrow laid around the potatoes will protect them from further encroachments. If the field is small, scattering of ashes or slaked lime or of even dry road dust around the hill is very distasteful to the worms. A formula sometimes used for cut worms is made as follows: 40 pounds bran, 2 gallons cheap molasses and 5 pounds arsenic. Stir all thoroughly. Its effectiveness is continued longer if cheap glycerine is added to hold in a moist form. A spoonful of this is placed near the base of each plant.

Red Spider.

What is the best remedy for Red Spider on almond trees?—F. G., Lancaster.

A good remedy for red spider is the ordinary dry flowers of sulphur thrown or sprayed in a dust through the trees. This is usually sufficient. Some prefer, however, the sulphide of potash spray. The following is taken from "California Fruits" and is made as follows: Granulated or powdered concentrated lye—15 pounds, sulphur—18 pounds, add water to make 20 gallons. Stir sulphur and lye together in a vessel which will allow plenty of room for boiling. When well mixed, add about a pint of water and stir slowly. This mixture will soon melt and boil, forming a red liquid. Stir until boiling ceases, then add water to make 20 gallons.

However, any treatment of red spider should be made before the work of the spider is visible to the eye.

Fertilizer for Beans.

What is the best commercial fertilizer for string beans? How many pounds should be used to a acre?—Subscriber, Orange.

The best treatment to give ground for growing string beans would be to apply anywhere up to 25 tons of stable manure per acre the season before planting. This worked in the soil at that time would have it in excellent condition by the time the beans were planted. This may be had for about $3 per ton. However, as Subscriber asked as to commercial fertilizer, we imagine that application of, say, 100 pounds per acre of nitrate of soda would give the quickest results. This would cost $3 or $4 per acre. The application of stable manure would be much more expensive, but would put the ground in much better condition.

Aphis.

I am sending you specimens of leaves from apple trees. They are infested with bugs or lice which causes them to curl and look unhealthy. What will destroy these insects?—Subscriber, Capay.

There were no live insects on the leaves when they arrived and, in fact, the dead ones had been more or less mashed in the letter, but indications were that the leaves had been infested with apis or plant lice, a small green bug which attacks the more tender growth of nearly all plant life. They are easily destroyed, but so wonderfully productive that a new crop comes on soon and infects the plant again. Knocking the lice from the growth with water under strong pressure is sufficient to kill most of them. However, the usual remedy is kerosene, emulsion or whale oil soap spray.

Perris.

What kind of a country is it about Perris, Riverside county? What is good land worth there? What crops do well? How many miles is it to Los Angeles? How many acres will keep a family?—J. D. O., Arroyo Grande.

Perris is located on a level body of land east of Riverside, a few miles, and has a general elevation of about 1500 feet. The soil is generally good and where water may be obtained for it will produce most of the crops which will do well in California. There are some excellent orange groves in the section. The country is, as a rule, given to grain growing. It is 85 miles from Los Angeles. The number of acres to support the family depends upon the size and requirements of the family, the amount of water secured, on the intelligence of the man who is doing the farming and on so many other factors that it is impossible to give a satisfactory answer to this question.

Beer Seed.

I noticed in your issue of the 8th that a subscriber wishes to know the name of a plant that is used to make beer. I do not know the plant, but I have seen a plant which was used to make "cider." I presume it is the same plant. I think if the enquirer

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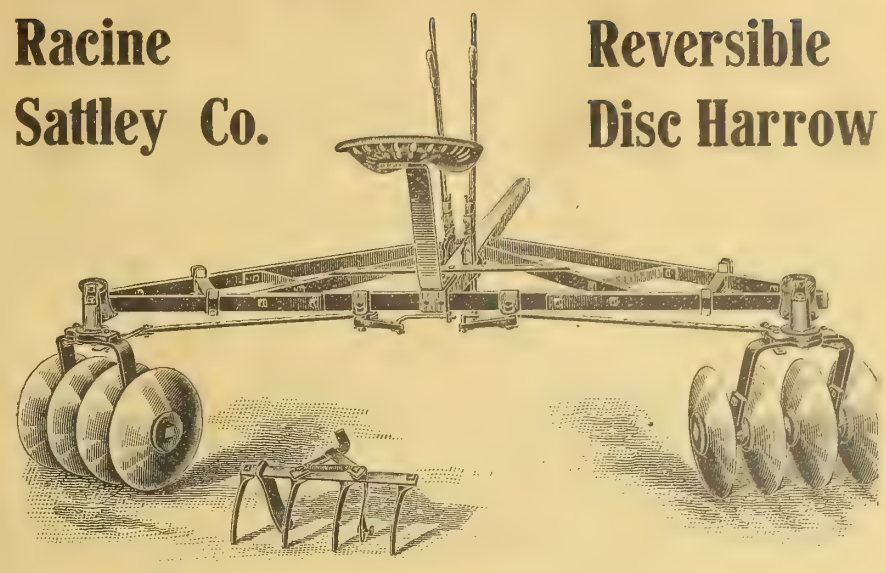

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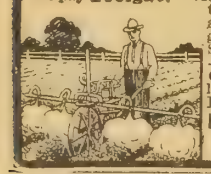

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Mutual Savings Bank Building, San Francisco

Saticoy, Ventura County Walnut Growers Association held a meeting April 16, to appoint Brokers to handle this year's crop.

will write to Mrs. Daniel Kull, or Oscar Kull, Michigan City ,Indiana, he may be able to learn the name of the plant and where to get it.—Fred Schray, San Martin, Calif.

Renting Land on Shares.

"In renting a peach orchard on shares, what percentage of the collections does the owner receive. What are some of the more important stipulations usually used in a lease of this description?"—"ABC"

It is impossible to get information on this line which will be of any value as there is so much diversity of practice in the matter, made necessary by differing conditions, that without knowing fullest particulars it would be impossible for one to give any advice and even then local surroundings, distance to market, condition of the trees and so many other points would control, that definite information would be impossible. Shares usually vary from one-quarter to one-half.

Beans on Alkali.

Would you advise planting pink beans on land that is partly alkali spotted and will they grow as fast as white Egyptian corn? I have a piece of land planted to peach trees this spring and would also like to plant it to some kind of beans. Please tell me a good market for black eye beans and do you know of a commission house, or any concern that makes contract for crops on the vine or trees.—F. R., Visalia, Cal.

The pink bean will do as well as the black eye. They are practically the same as to tolerance of alkali and probably will do as well as the peach trees.

We know of no commission house which will contract for a crop in advance. They prefer, as a rule, to wait until the crop is ready for marketing and then play the producer as best then can to get the best end of the bargain.

Green Manure.

Would it be profitable to try to raise a green manure crop in my orchard, where I have no irrigation and the rains do not come generally before December? If so, what would be the best to raise. It would have but about three months to grow if I plowed the first of March. The rainfall is about twenty-five inches and comes in December, January, February and March.—C. A. S., Chico, Cal.

Yes, we believe it would pay under these conditions to grow a cover crop, probably the best under these circumstances would be the ordinary Canadian field pea. If in the ground so as to take advantage of the first rains they will probably be ready for plowing under by the first of March.

Swine Questions.

1. Is it practicable to silo alfalfa in this country? 2. Does it keep well? 3. Will stock hogs eat it and keep up? 4. Or is it better to grind the dry alfalfa hay in to meal and feed? 5. Will hogs do as well to cut the alfalfa green in summer and feed it say twice a day in close pens as they will to pasture it? In my neighborhood we can only pasture hogs about 5 or 6 months in the year as it dries up in fall. 6. Is there any way to keep the hogs on the alfalfa the remaining part of the year?—S. S. B.

1. Yes. 2. Perfectly, if made moist by addition of abundant amount of water. 3. Yes, it is good hog feed, but we give them alfalfa hay or pumpkins at the same time. 4. The expense of grinding alfalfa hay is needless. The pigs will eat it fully as well unground. The process of grinding in the machine consists of drying out the hay until brittle, then putting it into a perforated drum that revolves rapidly; the ground up portions are forced out and sacked up. The other form of making the meal consists of chopping and chopping until it is fine enough to drop through a small mesh and be carried away on a traveling draper to the sacking machine. This makes the machine too expensive to be operated on the farm without a large amount should be made to sell to others. 5. Certainly, only give them a small lot or else keep the pens clean by white washing them every two weeks and cleaning up the floors every other day. Sand thrown in will become valuable fertilizing material to put on the land. The cheapest way to feed the stock hogs in the winter is to use good leafy alfalfa hay with either pumpkins or pig melons during the season the pastures are too dry to be grazed.—M. E. S.

Sulphuring Grapes.

I have a couple of acres of grape vines, Thompson Seedless, Muscats and Red Emperor. Part set out last spring and part this spring (rootings). Will it be advisable for me to sulphur them; if so, how?—W. D. R.

A little dusting over of sulphur would not be amiss for mildew. When it once starts enough to show its work it has completed its mischief. On a small plot the sulphuring may be done by shaking the sulphur through a piece of gunny sack or a Vilomorin or Julian knapsack sulphur machine may be bought at a cost of $12.00 to $15.00. Sulphur is put on in the morning while the vines are damp from the moisture of the night time. Buy sulphur that is smooth and velvety to the touch when rubbed into the palm of the hand.—M. E. S.

Green Manure Crop.

Your advice on cover crop is O. K. providing it gets plowed under early and before it becomes woody, but may Heaven pity the man who does not get it under early, especially if it is heavy. I speak from experience.—C. L. G., San Diego, Cal.

This experience will cause a responsive cord to throb in the breasts of many who have been caught the same way. Moral—plow under early.

Veterinary

Answers in this column by Dr. R. T. Whittlesey, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Scours—Worms.

I have a yearling colt that has the scours almost continually for several months, even before green feed came on. Is there any treatment useful or needed?—S. G., Inglewood, Cal.

It is quite likely the colt has worms. At least I would give the following:

Aloin ½ ounce.
Raw Linseed Oil 1 pint.
Turpentine 30 ounces.

Mix and give in one dose.—R. T. W.

DR. WHITTLESEY'S VETERINARY REMEDIES.

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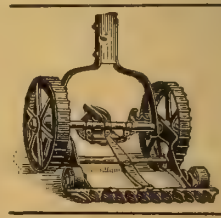

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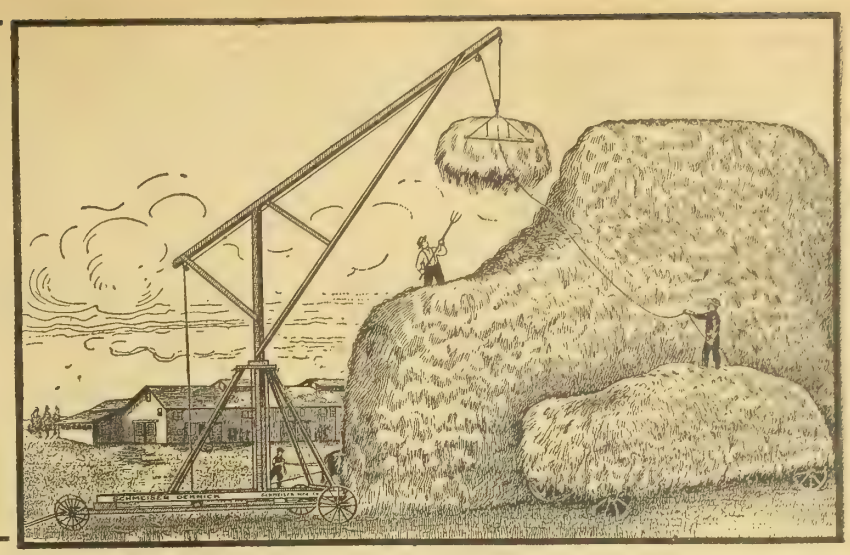

General Agriculture

MOSQUITOES.

LATITUDE does not seem to be an important factor in influencing the numbers of the pest, for they may be found in the cold latitudes of the North equally as well as in the tropics.

The wonderfully economic bearing that certain species of mosquitoes possess was brought to light a few years ago when it was discovered that certain diseases of the human system were not possible unless inoculation of the patient with the organisms causing the disease first took place by the bite of a mosquito. It was known that malaria, a disease so much dreaded in the South, bore a certain relation to the swamps, and it was at first supposed to be the result of a certain miasma arising from them. When it was determined, beyond the shadow of a doubt, that malaria could not possibly be contracted in the human system without first an Anopholes mosquito biting the patient, the medical world was somewhat relieved of one of its many problems, and the problem of stamping out malaria became more the problem of the entomologist. The most vulnerable point of attack was the swamp. By killing the mosquitoes that bred therein much good could be done toward relieving the distress caused by malaria.

It was also found that yellow fever is contracted after inoculation from the bite of a certain species of mosquito, and a way was opened for lessening the ravages of that disease.

The female mosquitoes live over as adults and in the spring lay their eggs, on stagnant water, in little boat-shaped masses. The little larvae, commonly called wrigglers, in a few days hatch from the eggs and feed upon small organisms in the water for a period of two weeks, sometimes more and sometimes less, depending upon the food supply. While living in the water it is necessary for the little wrigglers to breathe. This is accomplished by means of a little tube-like organ on the anal extremity of the body, which is pushed above the surface film of the water. When the larvae become full grown they change into the pupal stage. During this stage they are still active, but do not partake of any food. In a few days the skin splits down the back and the winged adult emerges, uses the shed skin as a raft upon the water until its wings are strong enough so that it may fly away. It is only the female mosquitoes that need concern us, for the males do not bite. Upon emerging from the water the females hunt some animal, and if none is found they may partake of vegetable juices for a time. The life of the female mosquito is quite short, probably not more than two weeks on an average.

The fact that three stages of the life of the mosquito are spent in the water is favorable to their destruction. Oil poured on the surface of an infested pool will kill the larvae and pupae as they come to the surface to breathe. The egg masses will also be penetrated by the oil and killed. If a neighborhood is infested with mosquitoes, it is well to make an investigation and determine, if possible, where they are breeding. Often the water in a rain barrel, or even water in tin cans will serve as a breeding place to such an extent that a whole neighborhood may be infested. The emptying of such vessels, or the covering of them so that the adults cannot get in to deposit their eggs will result in great good. The drainage of pools and swampy places is an effective means of control. In the state of New Jersey the salt marshes along the coast were found to be breeding places for an abundance of mosquitoes which infested the region for some distance inland. A state appropriation was made to be used in draining these marshes, with the result that the salt marsh species of mosquito is no longer abundant.

The point to bear in mind in mosquito control is that they breed in water, the fouler the better, and that by destroying all such breeding places great good may be accomplished.—Geo. P. Weldon, Field Entomologist, Colorado Agricultural Experiment Station.

DODDER.

This annual parasite is easily recognised by its slender, twining, yellowish-green, practically leafless stems attached by minute suckers to the host plant, and bearing clusters of whitish or pinkish flowers. It is as great a pest to agriculture as the Mistletoe is to forestry. Two native species (Cuscuta tasmanicia, Engel, and C. australis, R. Br.) are known and have played some part in keeping down native and introduced weeds (St. John's Wort). The most injurious Dodders appear to be the introduced ones (Cuscuta epithymum, Murr., C. europaea, L., C. trifolia, Bab., etc.) which are continually imported and spread by seed. These parasites will destroy any leguminous crop if unchecked. Where a whole field is infested the entire crop should be plowed under, and if this is done before much seed has been formed, after a years' allowing (bare or green), followed by wheat, oats, maize or a similar crop, it will be safe to use the land for clover, lucerne or leguminous crops. If allowed to seed freely the seed in the soil may not be exhausted for five or six years.

When small infested patches are found, a trench should be dug round the patch over which straw or long chaff sprinkled with kerosene has been spread. After firing and burning off, the soil can be thrown over the quarantined area, covering and burning any parts that have escaped destruction. It is wise not to remove the infested plants for burning as pieces left on the field or dropped in fresh places re-establish themselves and spread the evil. To attempt to tear out the dodder with a rake is even more foolish. Spraying with copper sulphate or iron sulphate solutions have been recommended, but a badly infested crop cannot be saved in this or any other way. It is better to lose completely a small area of the crop by burning than to risk a

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A small boy can slide faster down a smooth, greased board than he can down an ungreased board full of slivers.

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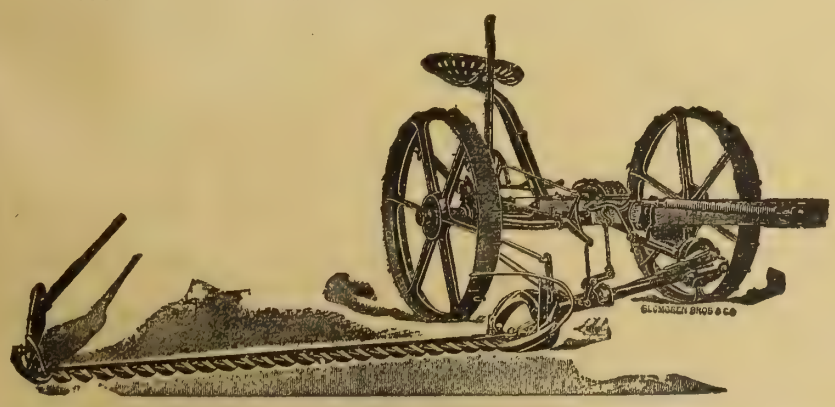

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BUFF PLYMOUTH ROCKS, BRED TO lay, win and pay. My birds have won more prizes than all competitors combined. Eggs and stock. Circular, DR. W. H. HOLMES, Slavin Block, Pasadena, Cal.

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WHITE MINORCAS (EXCLUSIVELY), standard bred, prolific layers, large white eggs. Eggs (after April 1st) $1.25 for 15; $3.00 for 45; $5.00 for 100. L. V. PETERSON, Guerneville, Cal.

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PRIZE - WINNING WHITE MINORCAS. Eggs for setting, $2 for 15; $3 for 30; $6 per hundred, f.o.b. express. C. S. LANE, Santa Barbara, Cal.

S. C. BROWN LEGHORN EGGS $1.50, $2.50 and $5.00 per setting, $5.00 and $7.00 per 100. MRS. C. H. VARY, Pomona, Los Angeles Co., Cal.

O. L. CRANE, BREEDER OF PIT AND Cornish Indian Games. Rural No. 3, Santa Rosa, Cal.

TREES.

FOR SALE—300 FIRST CLASS NAVEL orange trees, ½ to ¾ inches in diameter at $1.25 each and 1,000 Eureka lemon, ¾ to 1⅛ inches in diameter at $1.10 each, if taken soon. Balled and sacked at nursery. Shipping expenses paid by purchaser. SANTIAGO FROSTLESS NURSERY, Santa Ana, Cal. R. D. 1, Telephone Sunset, Orange 354.

FOR SALE—A NICE LOT OF 2 YEAR Late Valencia trees, 150 Washington Navels, 80 lemon trees. Must apply at once as they will be sold at once, being an extra lot of trees. RIMPAU BROS., Anaheim, Cal.

DAIRY FOR SALE.

FOR SALE—A DAIRY. THE ONLY first class, modern, up to date dairy and milk route in the city of Los Angeles. This milk is sold at a premium, sixty head of A 1 young dairy cows, the cream of 15 years of careful choosing and retail route. 2 horses, 2 mules, 2 wagons, and other appurtenances necessary to make up a modern dairy. Here is your chance. This stock, if not sold at private sale by the 20th day of May, 1909, will be sold at public auction. Address, COLUMBIA FARM DAIRY, 2900 Hollenbeck Ave., Los Angeles, Cal. Dairy located at the end of Euclid avenue.

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much more serious infestation next year. Care should also be taken to use only clean seed. Indeed, the sale of seed containing dodder should be a severely punishable offence.

Infested clover or lucerne should not be fed to stock, as seeds may be voided unaffected in the manure, and reinfect new ground. Above all, good cultivation in the widest sense should prevail, and all fields, hedges and ditches should be kept clean and free from weeds, especially leguminous ones. Dodder also grows on St. John's Wort and other weeds, but usually not on compositae.—Journal of Agriculture of Victoria.

SEEDING ALFALFA.

Hardly a mail comes to the Colorado Agricultural College writes P. K. Blinn that does not contain an inquiry in regard to the sowing of alfalfa, the varieties best adapted to particular localities, the quantity of seed required per acre, and the conditions and methods necessary for good results.

The Colorado Experiment Station has been testing the different varieties and endeavoring, by the systematic selection of the best individual plants, to develop a superior type of alfalfa for hay and seed production. The results of the work have been very promising, indeed; but at present there is no seed available for distribution, although efforts to produce seed sufficient for wider tests are being put forth. The varieties that have given the best results in nearly all the tests have been the northern grown types. Some of the Turkestan strains, the Grimm alfalfa, and the varieties that have been introduced under the name of Sand Lucerne, are the most hardy and vigorous types. The Arabian variety has not been hardy, even in southern Colorado and the same has been found to be true of all the seed from the hot countries. [It is proving most satisfactory in California and will probably be planted extensively this fall.—Ed.] Nearly all our native alfalfa, especially that from California and the southwestern states, has reached us by what might be called the southern route, i. e., it was brought over by the Spaniards into South America; then across into Chili, and thence north into the southern and southwestern part of the United States.

While it has been a great acquisition to our western agriculture, it has lacked hardiness to some extent, and this probably accounts for the extravagant recommendation for planting twenty to thirty pounds of seed per acre.

Usually it is the lack of proper conditions, rather than the lack of quantity of seed, that is responsible for a failure in getting a stand of alfalfa. A pound of alfalfa seed contains about 225,000 seeds, and ten pounds of seed per acre would give fifty or more seeds to a square foot of ground. If the seed is vigorous and hardy and the conditions favorable, ten pounds of seed should insure a stand of from three to five good stools per foot, which is sufficient.

A fatal error is often made by sowing the alfalfa seed too deep in the drills with grain three to four inches deep; alfalfa will seldom reach the surface under such conditions. The usual method is to broadcast the seed just ahead of the grain drill, either with an attachment on the drill or by hand; in this way some of the seed is covered about the right depth, by harrowing after the drill. But much of it is so near the surface that it will not survive; therefore, much seed is wasted. The ideal method would be to have a drill that would accurately regulate the amount of seed and sow uniformly by drills not much over three-fourths of an inch in depth. We are sadly in need of a drill especially designed for sowing alfalfa seed. If one has only a small area of two or three acres to sow, it might pay to take the pains to sow with a common garden drill, so as to insure a uniform depth of planting.

All the tests the writer has made with the drilling of alfalfa in rows have shown encouraging results in both hay yield and in the production of seed, as it allows better chances to cultivate and regulate and control moisture. It also economizes seed, for in drills eighteen to twenty inches apart, four to five pounds of seed per acre will give a good stand of alfalfa.

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FOR SALE — COMPLETE PUMPING plant 6 H.P. gasoline engine and No. 3 centrifugal pump, also fittings. MACHINERY EXCHANGE, N.W. cor. Main and Bruno Sts., Los Angeles, Cal.

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FOR SALE—BELT DRIVEN AIR COMpressor 10x10, practically new. Will sell at a snap. BAILIE & BRANDT CO., 943 N. Main St., Los Angeles, Cal.

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The experience of the Rhode Island Experiment Station shows in a positive manner the special advantage in its use where the soil is sour.

The nitrogen of legume crops is too slow to be of very much use since it requires a year before it becomes available, and then not rapidly enough for the demands of rapid growth; thus the early markets would be lost. In California in particular, where the cereals are so largely used for hay, their growth in the cold part of the year imperatively demands nitrate of soda since the process of nitration is very much hindered by our winter temperature.

On nursery stock and on bearing trees the influence of nitrate of soda is extremely beneficial as it insures rapid, vigorous growth; and it is plain that the larger the tree the greater its capacity for fruit-bearing. The failure of fruit trees to set fruit is largely due to lack of plant food, and more particularly nitrate of soda.

It has been applied with much advantage to various kinds of berries, bush fruits, vineyards, orchards, and small fruits generally.

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

Household Department

FROM DAY TO DAY.

If the world seems cold to you,
Kindle fires to warm it!
Let their comfort hide from view
Winters that deform it.
Hearts as frozen as your own
To that radiance gather;
You will soon forget to moan,
"Ah! the cheerless weather!"

If the world's a wilderness,
Go build houses in it!
Will it help your loneliness
On the winds to din it?
Raise a hut, however slight!
Weeds and brambles smother;
And to roof and meal invite
Some forlorner brother.

If the world's a vale of tears,
Smile till rainbows span it!
Breathe the love that life endears,
Clear from clouds to fan it.
Of your gladness lend a gleam
Unto souls that shiver;
Show them how dark sorrow's stream
Blends with hope's bright river!
—Lucy Larcom in the Independent, 1868.

A CHANCE ACQUAINTANCE.

HAWLEY walked the length of the car, but the only vacant seat was beside a young lady reading a magazine. He hesitated a moment, then, with the usual "Is this seat engaged?" to which he received a faint smile and a negative reply, he dropped into it. The young lady immediately resumed her reading and Hawley cast several side glances in her direction which finally convinced him that she was a charming young person.

Small of stature, with a wealth of chestnut-brown hair, large eyes of the same hue, a clear pink-and-white complexion and a charming little mouth.

He noticed the article she was so engrossed in was "A Chance Acquaintance." He had read the same story, and as the train rumbled along he settled down deeper into his seat and fell to dreaming of the similarity between the man in the story and himself, for there was, to be sure, up to a certain point.

Hawley got no further. A faint sigh, coming from somewhere near his right shoulder, interrupted him. The girl must have realized what she had done, for she glanced up quickly and their eyes met. Then they both smiled at the humor of the situation.

"Rather an interesting story," ventured Hawley, nodding at the magazine.

"Y-e-s," she murmured, the pink in her cheeks deepening.

There was a moment of silence. "I was just thinking," Hawley continued, "of the similarity between that man and myself—that is, up to a certain point."

"Yes."

This time the tone was more encouraging.

"Yes," he went on. "You see, I, too, am on my way to my old home, the first time I've been back since I went away 15 years ago. Quite a long time; don't suppose I will know any one there now, unless others, like myself, go back to see the old town, and I guess that's what Old Home week is for."

"But it was something besides Old Home week that brought the other man, the one in the story, back," murmured the girl, as she paused.

Hawley smiled, nodding.

"Yes, that's so," he replied, "and perhaps it's something else that brings me back."

"Oh," she murmured, and again the pink deepened.

"You see," he explained, "I was only 10 when I went away; went to live with an uncle in the city, and there was a little girl of seven and we were playmates. We often played we were married and often promised each other we would be some day; just a lot of childish nonsense to look back at now, and still I've often wondered what became of her. Married, probably, to some hard-working farmer, the mother of a family, and her childhood lover forgotten."

"Was she pretty?" asked the girl, glancing out of the window. Hawley laughed.

"Well, as I remember her, she had rather an abundance of freckles, hair inclined toward what we now call auburn, and—"

"As straight as a string," broke in the girl. "The usual type."

"Something like that," assented Hawley.

For a few moments neither spoke. The girl kept her eyes glued on the passing landscape and Hawley felt that the subject had been exhausted, and was at a loss for another. But just then the brakeman called out the name of the next station and the girl began gathering up her things.

"Oh, do you get off here?" Hawley asked.

"Yes. That is, change."

"Not to the Winson branch?"

"Yes."

"How fortunate! I am going that way, too; may I help you?"

She allowed him to take her suitcase and soon they were again seated together on the Winson branch train. And as there were but four stations on this road Hawley was curious to know where she was going. She was a charming young person and he—well, he would like to know who she was and where she lived. He was wondering if she would take offense if he asked, when she again took up the former subject, saying:

"But the man in the story returned and married his childhood sweetheart. Judging from your description of yours you probably would not care to. That's what you meant by 'up to a certain point,' wasn't it?"

"Why, no, not exactly," he replied, then added: "But probably she has changed since then—I doubt if I would even know her now."

He glanced at the girl. They had passed one station and were nearing the second, and she made no motion to leave. He glanced at her ticket as she passed it to the conductor, but it was face side down.

Again she took up the subject, discussing it until they had passed the third station.

"You must be going to Winson, too?" Hawley ventured at a break in the conversation.

"Why, yes," she returned. "Old Home week, you know."

At that moment a heavy hand fell on Hawley's shoulder, and a gruff voice cried: "Well, Jed Hawley as I'm

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At the Close of Business April 28th, 1909

RESOURCES

Loans and Discounts		$10,169,628.88
Overdrafts, secured and unsecured		16,716.23
U. S. Bonds to secure circulation		1,250,000.00
Bonds to secure U. S. Deposits		355,000.00
U. S. Bonds on hand		5,000.00
Premiums on U. S. Bonds		None
Bonds, Securities, etc. (bonds only)		844,930.00
Due from National Banks (not reserve agents)	$1,034,622.82	
Due from State Banks and Bankers	251,530.74	
Due from Approved Reserve Agents	975,232.52	
Checks and Other Cash Items	99,928.50	
Exchange for Clearing house	246,249.37	
Notes of Other National Banks	51,284.00	
Fractional Paper Currency, Nickels and Cents	6,773.08	
Lawful Money Reserve in Bank, viz.:		
Specie $2,141,482.00		
Legal Tender Notes 469,400.00		
	2,610,882.00	
Cash and Sight Exchange		5,276,503.03
Redemption Fund with U. S. Treasurer		62,500.00
Total		$17,980,278.14

LIABILITIES

Capital Stock Paid In		$ 1,250,000.00
Surplus Fund		250,000.00
Undivided Profits, Less Expenses and Taxes Paid		1,373,769.21
Circulating Notes Secured by U. S. Bonds	$1,250,000.00	
Less Amount on Hand and in Treasury for Redemption or in Transit	488,300.00	
		761,700.00
Due to Other National Banks	$1,329,620.50	
Due to State Banks and Bankers	873,272.02	
Due to Trust and Savings Banks	978,176.87,	
Dividends Unpaid	2,545.00	
Individual Deposits subject to check	9,995,606.24	
Demand Certificates of Deposit	159,914.64	
Certified Checks	33,141.98	
Cashier's Checks Outstanding	614,162.90	
U. S. Deposits	350,187.78	
Letters of Credit	8,181.00	
Total Deposits		14,344.808.93
Total		$17,980,278.14

No Real Estate. No Furniture and Fixtures. No Premium on U. S. Bonds.

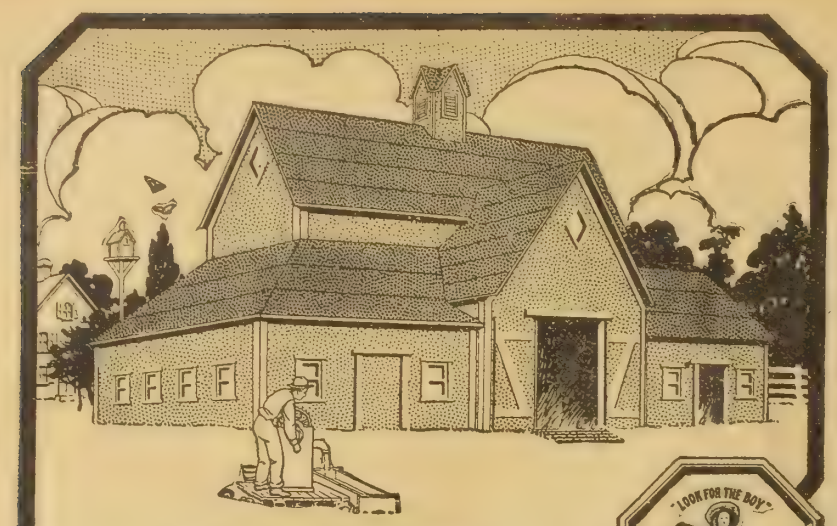
STATE OF CALIFORNIA, County of Los Angeles. ss.

I, W. T. S. Hammond, Cashier of the above named bank, do solemnly swear that the above statement is true to the best of my knowledge and belief.

W. T. S. HAMMOND, Cashier.

Subscribed and sworn to before me this 29th day of April, 1909.
W. N. HAMAKER, Notary Public.

Correct—Attest:
STODDARD JESS,
W. C. PATTERSON,
G. E. BITTINGER,
JOHN S. CRAVENS,
J. C. DRAKE,
M. H. FLINT,
Directors.



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alive, and—" here the man paused, looking curiously at the girl, who was intensely interested in the passing scenery, her cheeks now a flaming crimson, which extended back to her shell-like ears—"did you and Elsie hitch up after all?" he added in a hoarse whisper.

The true situation burst suddenly upon Hawley, and for a moment left him speechless. He gazed at the old man, then at the girl, who was trembling with suppressed merriment.

"—I—well—you see—not—not—yet ——" then he paused in confusion, and the girl's ringing laugh, as she turned to him, only added to it.

"Jed Hawley," she cried, "you ought to be ashamed! I knew you the minute you spoke. Freckles—red hair! Indeed! I'll never forgive you—never!"

But her sparkling eyes belied her words, and when Old Home week was over——

But why tell the rest?—Exchange.

About the House

THE fruit season is almost here and these general rules for canning, published by a domestic science instructor of an eastern agricultural college, may be of value to the Cultivator readers:

The addition of sufficient sugar to agreeably sweeten fruits has no effect upon the keeping qualities of the food, but is advantageous inasmuch as the sugar thus used penetrates into the substance of the fruit and increases its palatibility.

One-half cup of sugar to each quart of fruit is a good general rule, but one which will require some modification where excessively sour fruit is used. The time at which the sugar is added, whether when fruit is put on to cook or later, will depend upon the texture of the fruit itself. Where the fruit is tender and inclined to break during cooking the sugar should be added before the material is heated. The sugar will slightly toughen the fruit and it will retain its shape better. If the fruit is tough it should first be softened by boiling and the sugar added after the fruit has become tender, for, as above stated, the sugar toughens fruit when added before cooking.

Not more than four quarts of fruit should be boiled at one time in a kettle, because when there is a large amount portions will be mashed and overcooked and other portions insufficiently cooked, and the quality of the canned article is injured.

No tin or iron utensils should be used in cooking fruit or vegetables for canning.

The filled jars should not be placed in a draft of air while hot, as there is danger of their breaking.

It is desirable, though not absolutely necessary, to store canned fruit in a cool, dark place.

The same general care is required in the preparation of fruit preserves as in canning.

Three-fourths of one pounds of sugar is added to each pound of pared fruit, the fruit and sugar being long and carefully cooked together.

Preserved fruit will not ferment because the sugar added makes it too solid for yeast organisms to grow in it, though mold will grow upon it, if it is not protected from these.

Jams, butters and marmalades are modifications of preserved fruits in which the fibre of the fruit has been broken and mashed by forcing through a colander or sieve.

Sweet pickles are fruits preserved in a syrup of vinegar and sugar to which has been added cinnamon, cloves and other spices.

Jellies are prepared from fruit juices and sugar. The fruit should be fresh and slightly underripe. It should have only sufficient water added to keep it from burning. When tender, the fruit should be strained through a bag of double cheesecloth or a single thickness of flour-sacking or cheap flannel. The fruit juice, after draining, should be measured. Four cups of the juice should be placed in a large-bottomed kettle and boiled rapidly until reduced to three cups. Three cups of sugar should be added and the mixture boiled up once and skimmed, after which it is ready for the jelly glasses. One spoonful of melted paraffin should be poured over each glassful of jelly before the cover is put on. The rapid boiling and preparation of but a small amount at each cooking, are the two things that will insure success.

Vegetables may be canned successfully, but to do this it is necessary to place the cleaned, prepared vegetables in clean jars, place the rubber and lid in position without screwing down, arrange the jars on a support in a kettle or wash-boiler, surround the jars with cold water and bring to a boil. After they have boiled fifteen minutes screw lids down tight and continue to boil from two to four hours. The long boiling does not injure.—Elbepe.

A HOME MAKER'S NOTE BOOK.

If I were blessed with the gift of oratory, and had sufficient magnetism to hold an audience, I'd write a lecture entitled "Don't Fret," and deliver it all over the civilized world. I believe such a lecture might do a great deal of good. I know such admonition is greatly needed.

There is no real use in this world for fretful people, unless they are sent to stimulate patience in those who cannot avoid them. Things were never made any better or more easily borne because of fretfulness, and the atmosphere around a fretful person is so blue that it cannot be otherwise than extremely unhealthy. Fretful people are always regarded by others with a sort of good natured contempt. If they are very fretful, people keep out of their way as much as possible because it is pleasanter to do so. For the same reason a fretful person's mandates are sometimes obeyed. "Any thing, any thing so as to have a little peace in the family," is the feeling that prompts the obedience, rather than a conviction of the wisdom of such a proceeding.

A fretful person could never become a successful commander, preacher or teacher. People have too little respect for them for that. They are certainly not desirable as members of a family either as father, mother, sister, brother, aunt, uncle or cousin.

How nice it would be if it were possible to segregate the fretful! Did you ever notice how easily annoyed fretful people are by the fretfulness of others? Perhaps, if forced to bear, as they force others to bear, they might become cured. If fretfulness were a disease and there were no cure for it, the poor victim would be then pitied and endured, but as it is simply a state of peevishness and ill humor, of allowing one's self to grumble about everything and anything, it does seem

hard that every one else must be made so uncomfortable by it.

It seems strange, when fretfulness is always so easily discovered in others that it is so hard for one to see it in one's self. That one does not realize how inveterate the habit has become with him, must be the only reason why it is so prevalent, for I cannot believe that so large a portion of humanity would willingly make themselves so obnoxious to every one who is forced to associate with them.

For my part, I believe I would prefer that my friends should tell me when they saw me becoming unnecessarily fretful, than that they should feel like avoiding me. I know the information would not be pleasant to hear, but it seems to me I should thank them, and try to control myself.—St. Jo., Fruit Grower.

WHEN SWEEPING.

To prevent making a great dust when sweeping use moist sawdust on bare floors. When the room is carpeted moisten a newspaper and tear it in small scraps and scatter on the carpet when you begin sweeping.

As you sweep brush the papers along in front of you. They will catch most of the dust and hold it fast just as sawdust does on the bare floors.

In dusting a room do not use a duster, for this does not remove the dust from the room; it merely sends it into the air and it will then settle on some other part of the room. Use soft dry cloths that will not leave any lint and shake them frequently out of the window, or use slightly moistened cloths and rinse them out in water when you have finished.

EXTENDING ZONE.

"Teacher says," exclaimed the precocious child, "that we live in the temperate zone."

"Yes," answered Colonel Stilwell, "and if these Prohibitionists keep going it'll be worse than that."—Washington Star.

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PUZZLED.

You ask me whether I'm High Church,
You ask me whether I'm Low;
I wish you'd tell the difference,
For I'm sure that I don't know.
I'm just a plain, old body,
And my brain works pretty slow;
So I don't know whether I'm High Church,
And I don't know whether I'm Low.

I'm trying to be a Christian,
In the plain, old-fashioned way
Laid down in my mother's Bible,
And I read it every day;
Our blessed Lord's life in the Gospels,
Or a comforting Psalm of old,
Or a bit from the Revelation
Of the city whose streets are gold.

Then I pray; why, I'm generally praying
Though I don't always kneel or speak out.
But I ask the dear Lord, and keep asking
Till I fear He is all tired out;
A piece of the Litany sometimes,
The Collect, perhaps, for the day,
Or a scrap of a prayer that my mother
So long ago learned me to say.

But now my poor memory's failing,
And often and often I find
That never a prayer from the Prayer-Book
Will seem to come into my mind.
But I know what I want, and I ask it,
And I make up the words as I go.
Do you think now that shows I ain't High Church?
Do you think that it means I am Low?

My blessed old husband has left me;
'Tis years since God took him away;
I know he is safe, well, and happy,
And yet, when I kneel down to pray,
Perhaps it is wrong, but I never
Leave the old man's name out of my prayer,
But I ask the dear Lord to do for him
What I would do if I was there.

Of course He can do it much better;
But He knows, and He surely won't mind
The worry about her old husband
Of the old woman left here behind.
So I pray, and I pray, for the old man,
And I'm sure that I shall till I die;
So maybe that proves I ain't Low Church,
And maybe it shows I am High.

My old father was never a Churchman,
But a Scotch Presbyterian saint.
Still, his white head is shining in Heaven,
I don't care who says that it ain't.
To one of our blessed Lord's mansions
That old man was certain to go.
And now do you think I am High Church?
Are you sure that I ain't pretty Low?

I tell you, it's all just a muddle,
Too much for a body like me;
I'll wait till I join my old husband,
And then we shall see what we'll see.
Don't ask me again, if you please, sir,
For really it worries me so,
And I don't know whether I'm High Church,
And I don't know whether I'm Low.
—Annie Trumbull Slosson.

OPPORTUNITY.

Master of human destinies am I!
Fame, love and fortune on my footsteps wait.
Cities and fields I walk. I penetrate
Deserts and fields remote, and passing by
Hovel and mart and palace soon or late,
I knock unbidden once at every gate.
If sleeping, wake; if feasting, rise before
I turn away. It is the hour of fate.
And they who follow me reach every state
Mortals desire and conquer every foe
Save death, but those who doubt or hesitate,
Condemned to failure, penury and woe,
Seek me in vain, uselessly implore—
I answer not, and I return no more.
—John J. Ingalls.

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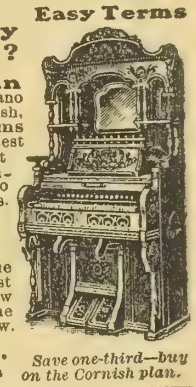

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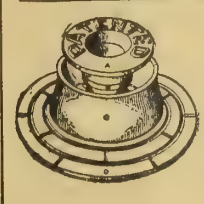

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San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, May 5, 1909.

Butter.

Butter is arriving in large quantities, but the surplus is being placed in storage so that price is held firm at a 2½ cent advance on former quotations.

Produce Exchange wholesale quotations are as follows with actual selling price to the trade 2½c advance on Extras.

Creamery ex per roll	.50
Firsts	47½
Cooking	.20
"Butterine"	16@20

Cheese.

Southern California Anchor	.18
Northern fresh	.17
Anchor Young America	.19
Longhorn	.21
Eastern singles	.20
Cheddars	.19
Swiss	16@17
Imported Swiss	.30
Daisy	20@21
Limburger	.21
Oregon triplets	.18
Twin	18½

Eggs and Poultry.

Eggs remain as formerly quoted and market is exceptionally strong at this writing. Arrivals are very heavy.

Eggs case count buying price	23½
Eggs local candled	.26
Eggs extra selected	.28
Eggs case count buying price	.24

Dealers pay for live stock

Hens per pound	16@17
Young roosters	.16
Fryers per lb	.25
Broilers per lb	25@30
Roasters	.20
Old roosters	.8
Turkeys	20@24
Geese	.16
Ducks	.18
Squabs	1.25@1.75

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs from 175 to 200 pounds	6½@6¾
Prime steers	4¾@5
Heifers	4@4½
Calves per pound	5
Sheep ewes per head	3.75@4.00
Lambs per head	3.25@3.50
Wethers	4.50@5.00

Potatoes.

Wholesale prices are:

Sweets per ctl	1.50@1.85
Sweets choice	1.15@1.25
Sweets Red	1.50
New per box	1.35@1.45
Early Rose local	2.50@2.75
Early Rose northern	2.50@2.75
Burbanks local	2.75
Lompocs	2.75
Highland fancy	2.75
Salinas	2.50
Oregons Burbanks	3.00
White Rose	2.25

Onions.

Wholesale quotations:

Australian Brown	3.50
Danvers	1.75@2.00
Red Globe	1.75@2.00
Imperial Bermudas per crate	1.75
Texas Bermudas per crate	1.15@1.25
Coachellas	1.15@1.25
White wax per crate	1.25@1.40
Garlic	10@12

Vegetables.

Artichokes per doz northern	90
Artichokes locals	50@75
Asparagus green	2½@6
Asparagus per lb common	4@7
Beets per sk	1.00@1.10
Bell peppers per lb	20@40
Beans string	15@25
Brussels sprouts per lb	9@10
Cabbage per sk	1.00@1.25
Cabbage red per lb	3
Celery per crate	5.00@6.00
Chili per lb	20@25
Chili dried	9@10
Chicory per doz	50
Cucumbers per doz hot house	1.25@2.25
Cauliflower per crate	2.25@2.50
Carrots per sk	1.00@1.25
Chives per doz	1.60
Endive per doz	25
Egg plant	25
Green onions per doz bunches	15@25
Horseradish per lb	12@15
Lettuce per crate	75@1.00
Lettuce choice	75
Mushrooms per basket	3.00
Oyster plant	50
Okra per lb	40
Peas per lb	1@3
Parsley doz	20@40
Parsnips	20@25
Rhubarb Northern per box	1.65@1.85
Rhubarb C. W.	85@1.00
Radishes per doz	15@20
Spinach per doz	20@25
Turnips sk	1.00
Tomatoes crate	1.35@1.50
Water cress	15@20

Citrus Fruits.

Navels fy	1.50@2.75
Navels ch	1.25@1.50
Tangerines halves	1.60@1.75
Grapefruit seedless	3.00@3.50
Grapefruit seedlings	1.50@2.00
Lemons fy	1.75@2.25
Lemons ch	1.00@1.50
Limes half box	1.50@2.00

Fresh Fruits.

Wholesale prices on the market are:

Baldwins 4 tier	1.35
Bellflowers	2.00
Newton Pippins	1.50@2.00
W W Pearmains	2.00
Spitzenberg	2.25@2.50
Jonathans	1.75
Cherries white	1.75@2.00
Cherries black	1.50
Aligator Pears per doz	3.50@4.00
Custard apples per lb	10@15
Guavas	4@6
Loquats per lb	4@8
Pears box	1.75@2.00
Raspberries	8½@12½
Strawberries	6
Strawberries ch	3
Blackberries	8@10

Dried Fruits.

Wholesale prices are:

Apricots	8@10
Evap apples fy per lb	8½
Figs loose white	5
Figs blk	5
Peaches in boxes	6@8
Peaches sacks	6@7
Pears	9
Plums pitted	8@9
Nectarines	7½@9
Prunes 30's to 40's boxed	8
Prunes 40's to 50's	7½
Prunes 50's to 60's	

RAISINS—Muscatels, 2-crown, loose, 50-lb. boxes, lb., 3½c; do., 3-crown, 4c; do., 4-crown 5c; sultanas, bleached, lb., 9c; do., unbleached, 3½@4c; new seeded raisins, 16-oz. packages, 6c; do., 12-oz. packages, 5c.

Beans Dried.

Wholesale prices are:

Limas per ctl	4.50
Pink No. 1	3.75@3.85
Lady Washington	5.15@5.25
Small White	6.15@6.25
Black eyes	3.75@4.00
Garvanzas	4.00
Lentils California	7.00
Lentils German	8.00
Bayou	3.50

Nuts.

Almonds IXL per lb	14@15
Ne Plus Uutra	14
Pecans polished	15
Peanuts Virginia	6½@7
Peanuts California	5
Peanuts Jap	6@6½
Walnuts No 1	11@12
Chestnuts	13@14

Honey.

Wholesale quotations:

Extracted water white	8
Extracted Light Amber	6½@7
Comb W W	16
Comb white	15
Beeswax	30

Hay.

Prices paid to producers f. o. b. Los Angeles are as follows:

Barley No 1	21.00@23.00
Barley No 2	18.00@20.00
Alfalfa northern per ton	14.00@15.00
Alfalfa local	15.00@18.00
Tame Oat No 1	22.00@24.00
Wheat No 1	19.00@21.00
Wheat No 2	18.00@20.00
New barley hay	13.00
New alfalfa	12.50

Grains.

Wholesale selling price f. o. b., Los Angeles.

Wheat new per ctl	2.30@2.35
Kaffir corn	1.85
Corn Eastern bulk	1.65@1.68
Egyptain corn	1.85
White oats	1.90
Seed Rye	1.80

Feed Stuff.

Wholesale selling price f. o. b., Los Angeles:

Cracked corn	1.85
Shorts	1.80
Bran	1.70
Cocoanut cake meal	1.85
Cottonseed meal	1.25
Oil cake meal	2.50
Feed meal	1.85
Rolled Barley	1.70

San Francisco Markets

SAN FRANCISCO, May 4, 1909.

Butter.

Butter is slightly higher on the lower grades, and a most firm condition prevails.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras per lb	24
California firsts	23½
California seconds	22½

Cheese.

California flats fy	15½
Firsts	14½
Seconds	12
Cal Young America fy	17
Firsts	16½
Young American Oregon fy	16½
Eastern N. Y. Cheddars fy	17½
Oregon flat fy	16

Eggs and Poultry.

Eggs advanced a couple of cents and later declined one cent during the week, at present the market is firm at one cent high than last quotation.

Official quotations of the S. F. Wholesale Dairy & Produce Ex. are:

Fresh ranch extras	26
Eggs first per doz	25
Eggs second	22½
Eggs thirds	21½
Hens per doz	5.00@7.00
Hens extra	7.00@9.00
Young roosters	9.00@11.00
Old Roosters	4.00@5.00
Fryers per doz	6.00@8.00
Broilers per doz	3.00@5.50
Geese per pair	1.50@1.75
Goslings per pair	1.75@2.00
Ducks young	6.00@7.50
Live Turkeys	17@19
Dressed Turkeys	18@22
Pigeons young	2.00@2.50

Live Stock.

San Francisco prices gross weight:

Steers No 1	4½@4¾
Do second quality	4¼
No 1 cows and heifers	3¾@4
Second quality	3¼@3½
Hogs 100 to 140	7@7¼
Hogs 140 to 250	7¼@7½
Rough heavy	4½@5
Calves per lb	4@5¼
Lambs yearlings	5¼
Milk lambs	5½
Wethers No 1 unshorn	4¾
Ewes No 1	4¼

Potatoes.

Wholesale market quotations:

River white fy sacks	2.00@2.40
Early Rose	1.85@2.00
River Burbanks	1.35@1.50
Salinas Burbanks	2.40@2.47½
Lompoc Burbank	1.75@1.90
Sweets per crate	1.50@1.65
Oregons	2.25@2.50
New potatoes	2@2¾

Vegetables.

Wholesale quotations:

Asparagus per lb	2@2¼
Bell peppers per lb	25
Brussels sprouts per lb	3@5
Cabbage per box	2.00@2.25
Cauliflower doz	75@1.00
Carrots per sk	65@75
Celery per doz	40@60
Cucumbers per doz	75@1.00
Chili peppers per lb	20@25
Egg plant per lb	20@25
Green peas per sk	1.25@1.50
Mushrooms per lb	12½@25
Squash cream per box	50@65
Onions green per box	60@75
Rhubarb per box for bay	1.25@2.00
String beans	12½@15
Tomatoes box Mexicans	75@1.25
Wax Beans	10@12½
Garlic new	7@9

Onions.

Onions Oregons	2.35@2.40
Australian Brown	4.00@4.25
Texas Bermudas per crate	1.35@1.50
New green per box	40@65

Citrus Fruits.

Navels fy	2.00@2.50
Choice	1.75@2.25
Tangerines per crate	75@1.25
Mandarins	75@1.00
Grapefruit seedless	1.50@2.75
Grapefruit seedlings	1.00@1.75
Lemons ch	1.25@1.75
Lemons fy	2.00@2.75
Limes	4.00@5.00
Limes Cal sm box	1.00@1.25

Fresh Fruits.

Bellflowers	1.00@1.35
Bellflowers No 2	60@1.00
Cherries purple Guigne	1.50@1.75
Cherries white	1.25@1.50
Spitzenberg	1.25@2.00
Newton Pippins	1.35@1.50
Ben Davis	1.25@1.65
Winter Nellis	1.25@1.50
Other Kinds	75@1.00
Strawberries L. A. per crate	75@1.25
Strawberries Florin per crate	1.00@1.25
Malindas per chest	5.00@7.00
Longworths per chest	9.00@11.00
Pineapples per doz	2.00@4.00

Dried Fruits.

Prunes 4-size basis	2½
Santa Clara	2¾

½c premium for larger sizes

Apricots per lb; Choice	8½; fancy 7@10.
Peaches—Choice	4¾; fancy 6@7½
Apples evap	5@7½
Pears	5@8½
Figs	2½@4
Nectarines	5@6
Pitted Plums	7@8

RAISINS—1908 crop, f. o. b.: Fancy Seeded No. 16, cartons, 4½c; do, No. 12, 3¾c; do, Choice, No. 16, 4c; do, Choice, No. 12, 3¾c. 50-lb. bxs: Loose Muscatels, Standard, 4-crown, 4c; 3-crown, 3c; 2-crown 2½c; Seedless Thompson, unbleached, 3½c; Seedless Sultanas, unbleached, 2¾c; Dried Grapes, 2c; London Layers, clusters, 6-crown, $3; 2-crown, 90c; 3-crown, $1; 4-crown, $1.50; 5-crown, $2.50.

Nuts.

Walnuts S S No 1	9½
Walnuts No 2	6
No 1 Standard	8½
No 2 Standard	4½@5
Almonds Nonp	11½
Almonds IXL	10½@11
Ne Plus Ultra	10½
Drakes	9½
Chestnuts	9½@14
Peanuts Cal	5½@6

Beans Dried.

Limas	1.10@1.15
Pink	3.20@3.35
Small white	5.45@5.50
Large white	4.40@4.60
Black eyes	3.40@3.60
Red kidneys	3.60@3.85
Garvanzas	3.00@3.50
Bayo	5.25@3.35
Horse beans	2.00@2.10
Cranberry	4.75@5.00

Hops.

Hops 1908 crop	4@7½
Old crop	2½@3½
1909 crop contracted for at	9½@11

Honey.

White comb	11@12½
Light Amber	9@10
Exracted W W	7@8
Extracted light amber	6@7
Beeswax No 1 per lb	28@30
Beeswax No 2 per lb	23@25

Hay.

Scott & Magner say: Arrivals during the past six days have amounted to 1,908 tons, being still a dropping off in receipts from the hay which came in during the previous week. Notwithstanding the light arrivals, the market has been droping, and the feeling is considerably weaker by reason of the dropping off in the demand. All of the purchasers are looking for the arrival of new hay, and as a result, are only buying in small quantities, anticipating a drop in the market.

A little new hay has been coming in during the week, but not in any quantity sufficient to affect the market. It will probably be a couple of weeks before any appreciable amount of new hay is in the market here. Reports from the country indicate that warehouses are practically cleaned up, and there will be very little carryover stock this year.

Reports of the new crop are encouraging, and indicate a plentiful supply in every direction. This will be greatly increased by a little rain within the next two or three weeks, which some sections badly need. General crop conditions are most encouraging.

Better grades of hay sell readily; poor alfalfa and stock hay have practically no demand, and must be disposed of at great sacrifice in order to effect a sale. New alfalfa has been coming in here sparingly, with practically no demand. The prospect of new crop alfalfa of good quality is holding down the sale and the price of what little is left of the old crop.

Choice wheat hay	23.00@25.00
No 1 wheat or wheat & oat	20.00@23.00
No 2 wheat or wheat & oat	17.00@20.00
Choice tame oat	21.00@23.00
Other tame oat	18.00@21.00
Wild oat	15.00@19.00
Stock hay	7.00@10.00
Alaflfa	13.00@17.00
Straw	60@80

Grains.

Wheat No 1	2.15@2.25
Barley	1.52½@1.62½
Barley common to fair	1.45@1.55
Oats white	2.15@2.25
Oats gray	2.05@2.15
Rye new crop	1.80@1.85
Corn Egyptain	1.60@1.65
Corn Cal sm round	1.80@1.85
Alfalfa seed, Cal	16@19
Alfalfa seed, Utah	18@19
Mustard yellow	5¾@6
Mustard brown	3¾@4½
Millet	2½@3
Broom corn seed per ton	23.50

Feed Stuff.

Bran per ton	29.00@30.00
Feed cornmeal per ton	37.00@38.00
Cracked corn per ton	38.00@39.00
Rolled barley per ton	32.00@33.00
Rolled oats per ton	42.00@43.00
Oil cake meal per ton	38.50@40.00
Cocoanut cake per ton	25.00@26.00
Middlings	33.00@35.00
Shorts	31.00@32.50

Citrus Market

LOS ANGELES, May 5, 1909.

The supply of fruit has continued to fill the Eastern market until a decidedly easy condition prevails. This has not reached a situation where any particular concern is felt for as yet the good sizes have been commanding a price which will bring practically

Cream Separators, all sizes, all prices. O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

For Mehring Foot-Power Milking Machines see O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles,

$1.50 f.o.b. California. Off sizes which are in large quantities have for sometime sold exceptionally low. The season seems to have favored the growing of large fruit and as yet there has been no particular complaint of puffs. Slowing up in shipments which has been hoped for has not materialized and until that occurs, especially with vast quantities of berries and small fruits now coming in the Eastern market, there can be no hope of increase in prices.

Lemons are also somewhat in the dumps, owing to cold weather. All sales are affected some by the weather and as the season warms a keener demand will be developed.

Shipments.

The total shipments of citrus fruits since November 1, are 22,264 cars of which 19,467 were oranges and 2,729 lemons. To this date last season the total was 19,923 cars of which 17,684 were oranges and 2,239 lemons.

NEW YORK, May 3.—Fifty-nine cars oranges, one car grapefruit and one car lemons sold. The market held very steady, considering the size of the offering, especially on good, sound stock. The sale dragged very badly, however, and extended late into the afternoon.

NAVELS—	Average.
Lion Head Imp I. L. Lyon Sons	2.65
Tiger Head do	3.20
Iloha Imp Redlands OP Co	2.30
Producers Imp do	3.20
Orange Imp National Orange Co	3.25
Standard Imp do	2.90
Orchard do	3.10
Rose Redlands Orange Growers' A	2.65
Clover do	2.25
Aloha Riverside O P Co	2.55
Elk Riverside Ft Co	2.25
Elephant Orange Growers Cash A	3.05
Cerrito L V W Brown	3.55
Swastika do	2.75
Ocean Speich & Co	2.65
Success do	2.40
Triangle Strachan Ft Co	2.20
Papoose do	1.95
Golden Scepter Rialto Orange Co	2.35
Triangle Strahn Ft Co	2.10
Blue Globe Fiverside Ex	2.80
Red Globe Riverside Ex Riv	2.50
Pepper Riverside Ex	2.45
Cluster San Antonio Ex	2.15
Hummingbird Riverside Ex	2.10
Cluster San Antonio Ex	2.20
Arch Hawarden C A	1.85
Old Mission C C Chapman	2.45
Golden Eagle do	2.20
Dos Palmos San Marino G P A	2.25
Anemone California Cit Union	2.40
Monogram C C U seconds	2.15
SEEDLINGS—	
Thoroughbred W American F C	1.55
Rivera Semi-Tropic Exchange	1.55
Titus Ranch San Marino G PA	2.45
El Toreador do	2.30
Titus Ranch do	2.45
Monogram C C U seconds	1.75
Standard (half boxes)	1.70
VALENCIAS—	
Planet Sunset Ex	2.50
MEDITERRANEAN SWEETS—	
Honest Pack Tustin Packing Co	1.80
Lucky Tustin Packing Co	1.80
Purity do	1.85
Violet Duarte-Monrovia Ex	2.30
David Hewes	2.05

ST. MICHAELS—Old Mission, $2.75; Honest Pack, $2.15; Champion, vent, $2.75; Choice, $2.40; David Hewes, $2.65; Hale, $2.40; Blue Globe (half boxes), $1.25; David Hewes $1.15.

CLEVELAND, May 3.—Raining. Market is higher. Nine cars sold.

NAVELS—	Average.
Clover Redlands O G Assn	2.60
Fruita Riv Ex Highgrove	2.35
Tiger S B Ex Colton	2.50
Gold Buckle R H Ex E Highgrove	2.70
Caliornia Orange Riv Ex Riverside	1.80
Planet S S Ex Orange	2.10
Fruitella Riv Ex Riverside	2.05
Cluster S A Ex Pomona	1.85
Red Globe Riv Ex Riverside	2.45

ST. MICHAELS—Carmencita S T Ex, Fullerton, $2.35.

LEMONS—Hillside Gem, Loveless F Co Escondido, $1.70; Palomar, $1.15.

ST. LOUIS, May 3.—Weather favorable. Market is firm on good stock. Thirteen cars sold.

NAVELS—	Average.
Orchard National O Co	2.75
Golden Flower Redlands OG Assn	2.15
Blossom Redlands M O Co	2.30
Captain SA Ex N Pomona	2.40
Greyhound SA Ex Claremont	2.05
Gold Buckle RH Ex E High	2.65
La Mesa Riverside Ex Riverside	2.45
Mt. Baldy do	2.20
Standard National O Co	2.55
Golden Sceptre Rialto O Co	2.00
Hawk SA Ex Pomona	2.30
Duck SA Ex N Pomona	2.25
Fruitella Riverside Ex High	2.05
Quail OK Ex	2.10
Belt RH Ex E High	2.25
Golden Riverside Ex Riverside	2.20
Castle do	2.10
ST. MICHAELS—	
Sugar Loaf (½s)	1.40
VALENCIAS—	
La Mesa	2.70
La eMsa (½s)	1.35
BLOODS—	
Castle (Ruby)	2.10
LEMONS—	
Blue Jay	1.10
Punch Riverside Ex High	2.70
Club	2.60
Valley	2.45

PITTSBURG, May 3.—Sixteen cars sold. Market firm on good stock navels and lemons. Weather cold, raining, unfavorable.

NAVELS—	Average.
Orchard National O Co	3.05
Golden Pheasant, Ind Ft Co	2.15
Aurora E Peycke Co	2.35
Blue Mountain P & McKevitt	2.40
Coyote OK Ex	2.30
Blue Jay do	2.15
Duck SA San Dimas	2.10
Colonial SA Ex Pomona	1.65
Homegrove SA Ex Claremont	2.35
Standard National O Co	2.55
Golden Gate Redlands G O Assn	2.40

LEMONS—Highlander, High FGA, $2.00; Horseshoe, $1.55; Liberty, Escondido FGA, $2.45; Foxaway, $1.90.

CINCINNATI, May 3.—Cool, raining. Market is weak. Four cars navels, one mixed, one Florida Valencias and one lemon sold.

NAVELS—	Average.
Selected N W Blanchard	2.10
Owl OK Ex	2.30
Swan Riv Ex Riverside	2.35
Duck SA Ex San Dimas	1.95
Orchard Run Riv Ex Riverside	2.45
El Modena SS Ex El Modena	2.20

LEMONS—Palm Tree, $1.40; Florida Valencias, $3.00.

BOSTON, May 3.—Thirty-two cars sold. Weather favorable. The market is unchanged.

NAVELS—	Average.
Quail OK Ft Ex	2.15
Rey ST Ex Fernando	2.40
THREE Cultivator 13 ems non AL	
Gold Buckle RH Ft Ex E High	2.55
Highgrove Riv Ex Highgrove	2.15
Laurel QC Ex Corna	2.55
Crocus SB Ex Yerkes Spur	2.45
Ben Hur RH Ex Redlands	1.85
Orchard National O Co	2.90
Alpha Riv Ft Co	2.50
Standard National O Co	2.20
Producers Redlands O P Co	2.20
Vista Bonita J A Graham	2.15
Solano Stewart Ft Co	2.05
Golden Pheasant Indiana Ft oC	2.05
Clover Redlands OG Assn	2.00
W Highland Cleghorn Bros	1.90
Thistle Cal Citrus Union	1.70
Pine Cone SB Ex Highland	2.65
Tunnel ST Ex Fernando	2.25
Sugar Loaf, Riv Ex Highgrove	2.40
Quail O KEx	2.50
Lily QC Ex Corona	2.35

ST. MICHAELS—Argonaut ST Ex Fullerton, $2.40; Hacienda, $2.10; A-One E Peycke Co., $1.70.

TANGERINE HALVES—Sugar Loaf, Riverside Ex, $1.00.

LEMONS—Squirrel, AH Ex Prenda, $1.60; Anderson, $2.75; choice $2.15; standard $1.55.

PHILADELPHIA, May 3.—Fifteen cars navels, 3 mixed, 1 blood, 1 seedling and 1 car lemons sold. Weather favorable. Market steady. Weak on large sizes.

NAVELS—	Average.
Pointer ACG Ex Glendora	2.40
Colonial SA Ex Pomona	2.35
La Mesa Riverside Ex Riverside	2.45
Cluster SA Ex Pomona	1.90
Quail OK Ex	2.20
Cluster SA Ex Pomona	2.00
Native Sons King F Co	2.40
La France J S Kuns	2.15
Aloha Redlands OP Co	1.95
Citrus Belle Ind Ft Co	1.90
Coyote OK Ex	2.05
Greyhound SA Ex Claremont	2.00
Homegrove do	2.00
Quail OK Ex	2.10
Camelia Redlands M OCo	2.45
Salt Lake King Ft Co	2.35
Turquoise Cal Citrus Union	2.25
Blue Mtn P & McKevitt	1.95
Conqueror Ind Ft Co	1.80
BLOODS—	
Native Sons	2.60
Conqueror	2.40
Coyote	2.60
Quail (½s)	1.40
TANGERINES—	
Euclid (½s)	1.45
Aloha (½s)	1.00
LEMONS—	
Aloha	1.80

PHILADELPHIA, April 30. (Delayed wire of Friday)—Twelve cars navels, four mixed, four seedlings, one sweets and two cars lemons sold.

NAVELS—	Average.
Hawk SA Ex Pomona	1.65
Sugar Loaf Riverside Ex High	2.40
Victor SA Ex Claremont	2.00
Coyote OK Ex	2.20
Cosmos SB Ex Yerkes Spur	2.30
Cluster SA Ex Pomona	2.05
La France J S Kuns	2.30
Dixie Cal Citrus Union	2.05
Citrus Belle Ind F Co	1.75
Highgrove Riverside Ex High	2.30
Select SA Ex Claremont	1.90
Lark OK Ex	2.45
Crocus SB Ex Yerkes Spur	2.50
Coral SB Ex Yerkes Spur	1.70
Highgrove Riverside Ex High	2.20
Mtn Lion Speich & Co	2.40
Partridge Cal Citrus Union	2.00
Amethyst do	1.75
SEEDLINGS—	
Titus Ranch	1.75
Kingmaker	1.45
Heap Good	1.15
Extra Choice (budded) ST Ex	1.95
ST. MICHAELS—	
Colombo	2.50
Argonaut	2.55
Hacienda (red)	1.85
TANGERINES—	
Sugar Loaf (½s)	1.50
LEMONS—	
Loma	1.60
Redlands Pride	1.50

Now is the time of year that the ever present question prevading the family council is, "Where shall we go, or what shall we do this summer?" The planning and scheming period is now upon us when our thoughts turn from the sordid pursuits of city life; for man hath need of rest and he longs for the simple joys the country yields. We all wish to set aside for awhile the cares and worries of business and visit the Blessed Isles of rest and recreation.

To aid you in selecting a place for your outing or to locate your family for the summer so as to make possible week end trips, the Northwestern Pacific Railroad, the Picturesque Route of California, has issued a book called "Vacation." This book describes the garden spots and playgrounds of California in the counties of Marin, Sonoma, Mendocina, Lake and Humboldt. You can find in this book some place to suit your fancy and your purse, whether it is to fish, hunt, swim, rusticate on a farm, or visit the numerous mineral springs or resorts.

The issue of "Vacation 1909" is now ready for distribution and can be obtained from the Northwestern Pacific Railroad at the Ferry Ticket Office, the Up-town Office 874 Market St. and Room 986 (General Office) Flood Building, San Francisco, Cal.

GUARANTEED TOOLS.

It may sound rather odd to the average man who uses tools to tell him, that it is just as easy to select a perfect tool as one of inferior grade. But such is the case if you ask for "Keen Kutter" tools, which have for nearly forty years been famous everywhere for their quality and durability. To purchase "Keen Kutter" goods is to be absolutely certain that you are getting the best that money can buy. Besides you are getting tools that are guaranteed—every one of them—and if they are not all that they are represented to be you can have your money back or a new tool.

Such a guarantee as the makers, the Simmons Hardware Co., of St. Louis, put behind every "Keen Kutter" tool, has created a steadily increasing demand until at the present time this Company turns out an enormous amount of tools every year for the farm, for the shop, for the home. In fact, the Simmons Hardware Co. gives every tool manufactured the severest kind of test so that when it reaches the purchaser it is ready for service, whether it be a gimlet, a hammer, a razor or a lawn mower.

Every edge tool with the "Keen Kutter" stamps has been finally sharpened and you do not have to work up the edge yourself. You will note that ordinary tools you buy have to be sharpened after they are bought. Many factories will not risk the final test, because under this strain hundreds of tools would be put out of business, flaws appearing in the most unexpected places or an edge failing to hold because of improperly tempered metal.

That guarantee tells a great, big story, does'nt it?

If your dealer does not have the tools you want, write to the Simmons Hardware Company (Inc.), either St. Louis or New York. They'll put you on the right track.

SOLVING IRRIGATION PROBLEMS.

Irrigation problems have been simplified in recent years by the introduction of the gasoline engine. Lands formerly thought to be beyond the reach of water have been brought under cultivation. Long and costly ditches have been rendered unnecessar. Flumes which are always costly to maintain have been abolished and large tracts of bench and bluff lands lying high above a running stream or lake have been reclaimed.

An institution which has done much to show the advantage of irrigation by pumping water is The International Harvester Company of America. This company sells a line of powerful, dependable gasoline engines and has insisted for years that they go far towards solving vexatious irrigation problems.

The International Harvester Company gasoline engines are built in several styles and in a large number of sizes so that among them something will be found to meet the wants of all classes of land owners. One feature about these engines which comes as a welcome surprise to most farmers who inquire into their value for irrigation purposes, is that they require so little attention that but little of the irrigator's time is required in looking after them.

International local agents throughout irrigated districts will supply catalogus and full particulars to anyone inquiring for them. If you have a piece of land which for any reason you cannot irrigate from the ditch, it will be worth while to call on one of these agents and investigate the I. H. C. gasoline engines.

A UNIQUE PUBLICATION.

A national magazine for motorists which will not accept a single line of advertising and which is mailed free to one hundred thousand people each month, is the unique publication known as the Rambler Magazine published by Thomas B. Jeffery & Company, makers of the Rambler car in the interest of fourteen thousand Rambler owners.

We quote a letter which appears in this issue which is interesting to farmers, etc.

I find the auto a great convenience and a great time saver. Have had my header break twice in one day and each time I left the men and teams standing as they were, jumped into my auto, went to town (4 miles) got the necessary repairs, and in less than one hour had the work moving on with renewed energy owing to the short rest. I paid my help for full time and believe I got value received.

A motor car is an indispensable piece of machinery on any up-to-date farm. Automobile owners as a class, are the most enthusiastic good roads people in the world. I will venture to assert that any man who has owned an auto any length of time has done more toward improving the public roads than anyone else. J. A. Green, Waynoka, Okla.

A free copy of this latest issue is sent to any one who makes request of the publisher. Thos. B. Jeffery & Co., Kenosha, Wis.

SPRING SPRAY

for Fruit Trees, Ornamental Trees, Vegetables, Nursery Stock, Garden Plants, Berry Bushes, Hops, Vines, etc., use

"SPRA-MULSION"

[Spray Emulsion]

Contains dissolved petroleum oils, gives immediate and permanent emulsion with water. No oil separates on standing.

FOR

SCALES
[All Kinds]
APHIS
[All Kinds]
RED SPIDER
CANKERWORM
CATERPILLARS

Diluted 1 to 25, 30, 40 or 50. Sold in 50-gal. bbls., 10-gal. cases, 1-gal. cans, 1 quart cans.

R. R. Rogers Chemical Co.
531 Commercial St., San Francisco, Cal.
Write for prices and booklet

Auction

Of Balance of Stock of The Advance Carriage Co.
By Order of Trustee

Wednesday, May 12th, at 10 A.M. and 2 P.M., at 110 and 114 West 2th St.,

consisting of 1 $400 Babcock carriage. 1 $450 Imperial top surrey, $1500 Kimball Victoria, $500 Kimball spider phaeton, $1000 Baby Victoria, $500 golf wagon and many other high grade vehicles. Also 50 steel and rubber tired buggies, 25 steel Concord buggies, 25 open top express delivery wagons—all of which will positively be sold to the highest bidder.

C. M. STEVENS, Auctioneer.
Office and salesroom, 629 S. Olive St.

WHAT IS AXLE GREASE WORTH?

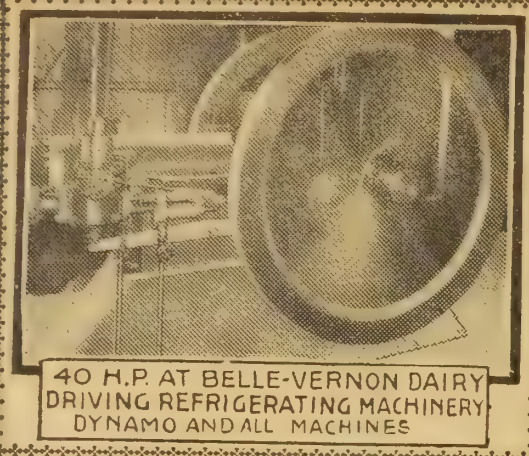
Who stops to think that **axle grease** cuts any figure in business economy, or that there is a difference **between** grease and grease—some being better, others worse? Yet it's a fact that the **adhesive quality** of an axle lubricant or its ability to **wear**, will raise or lower the expense account of a great city's commerce by a very considerable sum every year.

If you doubt it, stand for an hour on any busy corner and count the truck loads of merchandise moving toward railway terminal or steamship pier. Estimate, if you can, what it would mean to each shipper in time, and team and truck-wear, if there was a little fraction less of friction required to move each load.

Any grease is better than **no** grease, but no grease is better than—or as good as—"Mica." Probably if you found opportunity to interview a few busy dray-drivers, they would tell you that they know "Mica" is all right because they use it—and if you asked further **why** it's all right, they would say—"oh! it **stays on,** it wears better than any other grease and it makes a truck run easy."

There you have it! It **stays on,** and it makes wheels turn **easy.** No wonder more Mica Axle Grease is sold than of all other kinds combined.

Tuttle's Elixir Co., Boston, Mass. Gentlemen:—I want to express our appreciation of your valuable horse remedies which we are receiving through Prof. C. F. Tuttle at your branch offices, 311 East 63rd St., Chicago, Ill. We have used your remedies freely for the last six months on many of our horses with the most satisfying results. When a horse gets hurt, it don't make any difference what the injury is—we don't have to lay him up a single day when Tuttle's Elixir is first applied. I am pleased to recommend Tuttle's Elixir to our friends and all who own and care for horses Very truly yours, S. G. Kinney, Prop., South End Express Co., 54 Harrison St., Chicago.


40 H.P. AT BELLE-VERNON DAIRY
DRIVING REFRIGERATING MACHINERY
DYNAMO AND ALL MACHINES

You Don't Know

What Gas Engine Satisfaction Means Unless You Have Used a

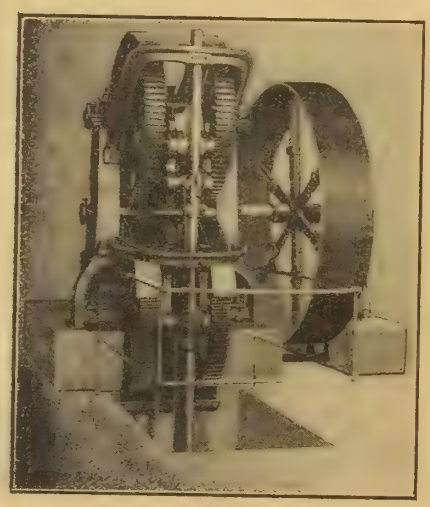
WESTERN

We have no sliding scale of quality. The changes that have been made in the design, material and construction of our engines have all been in one direction—that of producing the highest possible ***efficiency, economy*** and ***endurance,*** for the lowest possible cost. Ask the users of ***Western*** engines if we have succeeded.

Western Gas Engine Company

Northern Branch: San Francisco, Cal. **Los Angeles, California**

The Smooth Running, Noiseless Pomona Deep Well Pump



It is thirty to fifty per cent more efficient than any centrifugal pump ever made. No high speed bearings to cut out. All breakages and rod troubles eliminated.

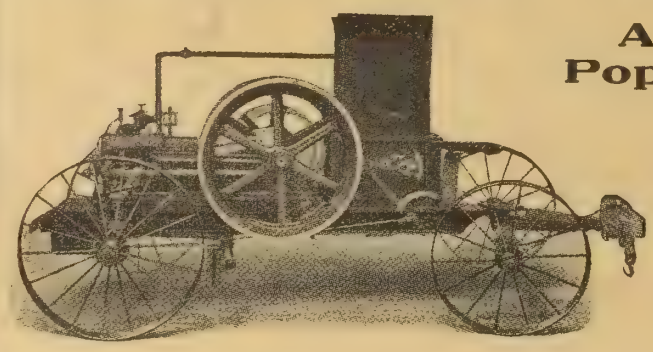
This is the only pump you can afford to buy if you consider your own interests. Hundreds of satisfied users testify to this.

Used by the best water companies who know what a good pump is.

Send for a catalog or what is better come to POMONA and let us show you some of these plants in operation.

POMONA MANUFACTURING CO.
POMONA, CALIFORNIA

Lambert Portable Engines



Are Popular

2 1-2 to 20 Horse Power

Because Guaranteed to develop 10% in excess of rated H. P. Rigid construction and moderate weight. **Costs Less** than others not as good. Balanced centre crank prevents Vibration—most modern and effective cooling system. **We Believe** an inspection will convince you that the Lambert Portable Engine is far superior to any on the market, and we have made a price to get the business.

Smith-Booth-Usher Company

212-214 South Los Angeles Street **Los Angeles, California**

More Water! Less Power! Longer Life! Less Money!

The American Pump has come to stay because every man that is using one is boosting for it. Get our prices and our guarantee before placing orders for irrigating plants. Send us your name and we will send you some interesting catalogs.

HENSHAW, BULKLEY & CO.
262-264 South Los Angeles St., Los Angeles Cal.

THE
Latest Deep Well Turbine Pump

Guaranteed to deliver from 100 gallons per minute upwards, depending on the diameter and capacity of well, from a depth of 50 to 300 feet below the surface. Can be either belt driven or direct connected to electric motor as occasion requires.

Write for Catalogue 46B.

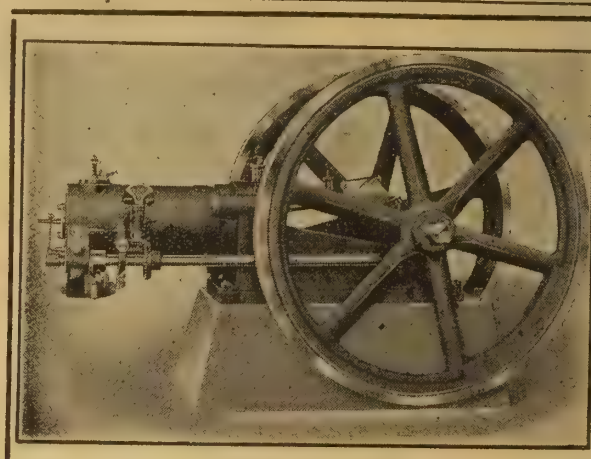
A deep well pump that has no valves or plungers to wear or get out of order, no gears, consequently no noise or breaking of teeth.

Compact, durable, always primed and ready to operate, constant flow, hence increased capacity of well.

This type of pump is fast taking the place of Vertical Steam, Deep well Plunger and Propeller Pumps.

Byron Jackson Iron Works

Main Office and Works:
Carlton Station
West Berkeley, Cal.



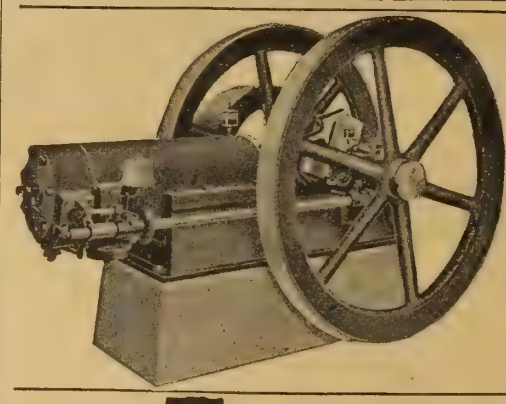
DOAK GAS ENGINES

Simplest and most economical. Use Gas, Gasoline or Distillate.

Stationary, Portable Hoisting and Marine

All sizes from 3 H. P. to 50 H. P. carried in stock.
Write for our catalogue "C".

Doak Gas Engine Co.
7-9 First St.
San Francisco



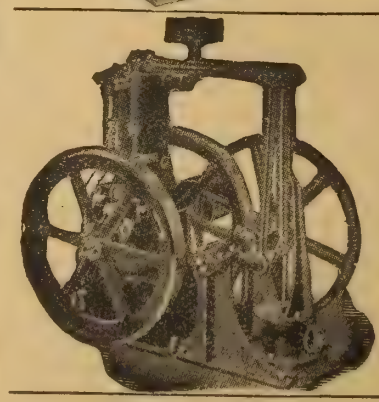
HERCULES
Distillate Engine

Heavy, strong and simple in construction

The Right Engine at the Right Price

Horizontal and Vertical; all sizes. Buy direct from the manufacturer and save the agent's commission. Send for our new Catalogue C.

The Hercules Gas Engine Works
351 Market St., San Francisco
Telephone Douglas 3630



A Handy Little Engine

Just the thing to run the feed cutter, the pump, the churn, the grinder, or anything on the ranch. It's well named

The Little Wonder

Write or call on

Wm. Gregory
602 No. Main St. **Los Angeles, Cal.**

When writing advertisers, mention Cultivator.

California Cultivator

Published Weekly One Dollar a Year

Los Angeles May 13, 1909 San Francisco

Hawaiian Islands Grow Superior Pines

A Field of Luscious Pineapples as They Grow Them in the Middle of the Pacific

THE FINEST pineapples now produced in the world are said to be those which are shipped into this country from the Hawaiian Islands. A few years ago they began coming in and were remarkable for their size and quality and were considered more as a curiosity than a fruit which would be a commercial factor, but for at least two or three years the production has increased so greatly that they have become common in many of our larger markets. In fact, so much so that at times they have been put upon bargain counters.

This has caused the Hawaiian people to take up a campaign of advertising over this country which has been an educational factor in showing the American people that American territory is producing great quantities of this luscious fruit and that it may do so at a reasonable price. The Islands are now putting up about 9,000,000 cans of pineapples annually, and the advertising campaign is largely to create a market for this immense output. The centre of the Hawaiian pineapple culture is in the island of Oahu on which the city of Honolulu is situated. The industry is largely in the hands of Americans who have settled there since the American possession. These growers have organized a Hawaiian Pineapple Growers' Association, a purely co-operative marketing organization.

The Dish Pans Tell The Story

TRADE Sharples MARK 29 Yrs

The easiest way to prove a thing is to show it.

For years, we have advised farmers and their wives to let "bucket bowl" cream separators of all sorts alone — because they wash hard, rust easily, are easily damaged and wear out in consequence.

How do you like this solid dish pan full of disks? There is absolutely nothing in that pan but disks—just disks from the bottom up—and all from a "bucket bowl" machine a disgusted farmer and his over-worked wife discarded for a Sharples Dairy Tubular.

They got very tired of washing and drying it twice a day.

Will you wash one piece or a pan full? If you prefer one piece, then get a Sharples Dairy Tubular Cream Separator instead of a "bucket bowl" machine. Sharples Dairy Tubular bowls contain only one little piece, instantly removable and just like the single piece in the dish pan. All other separators are the "bucket bowl" kind—full of parts and works. The full dish pan contains the many disks used in one of the "bucket bowl" machines that are being discarded by the car load for Sharples Dairy Tubulars.

What's In The Other Pan?

That little piece in the other pan is the triple tinned, pressed steel, wear forever dividing wall used in the Sharples Dairy Tubular Cream Separator bowl. It is about like a napkin ring in size and shape, is just as easily washed, is instantly removable and is **absolutely all there is inside Sharples Dairy Tubular Cream Separator bowls.**

You'll never forget this picture. Every time you think of cream separators you'll think of the difference between the Sharples Tubular and the "bucket bowl" kind — a difference in work, wear, efficiency and profits just as great as the difference in the contents of these two pans.

It is not surprising that Tubular sales exceed those of most, if not all, other separators combined. "Bucket bowl" sales are so reduced, by Tubular popularity, that the leading maker of disk machines (the self styled "original" disk maker) has found it necessary to commence suit against a catalog house that has been making and selling a cheap separator with disks like his for a number of years. Why? Because he has lost his grip—taken a back seat—is so out of date that he's scrapping for trade with the catalog house concern.

The Tubular is made in the world's greatest cream separator factory. Branch factories in Canada and Germany. It is the world's greatest cream separator. It will give you greatest satisfaction—greatest profit — greatest wear. Get catalog No. 260

The Sharples Separator Co.

Toronto, Can. **West Chester, Pa.** Portland, Ore.
Winnipeg, Can. Chicago, Ills. San Francisco, Cal.

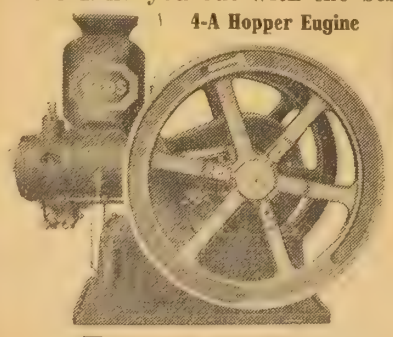
For Your Pocketbook's Sake---Read This

I am so confident that the Olds Engine is the most economical and most durable engine you can buy that I will make this proposition to every buyer of an Olds Engine.

I agree to replace, free of charge, any part of an Olds Engine that breaks or becomes worn, from any cause whatsoever, within one year from date of shipment, provided the replacement is one you think should be borne by the manufacturer. You are to be the only judge. There is to be no argument, no delay in returning old parts and getting new ones; you decide and I abide by your decision.

J. B. SEAGER, Gen'l Mgr.

Do you think this proposition could be made on any engine but a practically perfect one? You can easily see that to stand this supreme test of durability and perfect workmanship it must be built right, of the very best material, of the simplest construction. This is the kind of an engine you want. You take no chances in buying an Olds. All of my representatives can furnish these repairs without any delay. They do not have to consult me. Write to my nearest agent. He can fix you out with the best engine you can buy, no matter what others cost.



4-A Hopper Engine

OLDS ENGINES

Give you the power you need at the price you can afford to pay for it.

Some of the Features of the Olds Engine

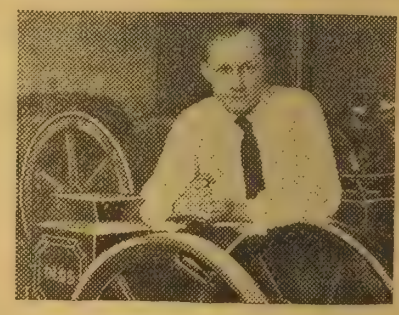
Olds Patent Seager Mixer—The only one that makes a perfect mixture of gas and air, giving the greatest power. No pump to leak or get out of order—No moving parts.

Removable Valve Mechanism. Removable Water Jacket. Jump Spark Ignition. Piston and cylinder ground to a perfect fit, giving better compression and more power.

Simplicity, three separate inspections, durability, economy and certainty of operation.

Our catalogue explains these points in detail.

Olds Engines are of the highest efficiency at the very lowest price because we can produce them without wasting a penny's worth of labor.



J. B. Seager, Gen'l Manager

I guarantee every Olds Engine that leaves the factory to be in perfect running order. I do not spend much time in the office. I am out in the shop with my coat off watching every detail. By keeping right out among the workmen, seeing that all the little things are actually done, I know the engine you get is all right, and that the high Olds standard is maintained. I also know the engine is "Best by every test," because I look after the testing and inspecting myself. They are the best you can buy, whether you pay less or more than the Olds price.

Write me about your own particular case. Let me advise with you. What I can tell you will fit your case exactly. Then you can decide what engine to buy. J. B. SEAGER, Gen. Mgr.

Do Not Think of Buying an Engine Without Investigating an Olds

Write Today for Our Handsome Catalogue

It contains many fine pictures of the very latest models of Olds Engines with a detailed description that makes the engine question as plain to you as an open book. It contains letters from farmers who have used the Olds Engines, and they give their practical every day experience with it.

Olds Engines are made in all sizes to suit every kind of work on the farm. We have exactly the kind of engine you want. Tell me what you want to do with it, and I will tell you just exactly the kind of engine you want to buy to do the work. It will be an expert opinion that costs you nothing.

Our hopper jacket engine on skids or wheels, 3 to 12 H. P., is ready to run when you get it. Fill it with gasoline, throw on the switch, turn the wheel, that's all. No piping to connect, nothing to set up, always ready, can be moved anywhere.

We also make regular engines 8 to 50 H. P. for heavier work.

Every Olds Engine is fitted with the Seager mixer which is recognized as being the most effective mixer that has ever been invented. No pump to leak, no moving parts to get out of order. They also have a removable water jacket so if through carelessness the water should freeze but very little damage is done.

It is to your decided advantage to send for our Catalogue.

Do it now before you forget it. A postal card will do, but better still write me a letter, telling me what you want the engine to do, and you will get a personal letter from me that will give you the facts you want.

Write me or my nearest representative.

J. B. SEAGER, Gen. Mgr.

OLDS GAS POWER CO.

Main Office and Factory, 993 Seager St., Lansing, Mich.
F. B. Close, Manager, 209 N. Los Angeles St., Los Angeles, Cal.
Phones—Main 1189; Home A3262

California Cultivator

Vol. XXXII—No. 19 Los Angeles, California, Thursday, May 13, 1909 Subscription $1 a Year

Work of the Dry Farming Congress

A Summary of the Last Dry Farming Congress, Which Has Caused Dry Farmers to Take Notice

THIS Congress has opened the eyes of the world to the fact that men do not know as much as they thought they did about farming. It awakened them to the necessity of studying fundamental principles and applying these principles to practical husbandry. It revealed methods developed at numerous experiment stations by which land hitherto considered worthless can be made productive. It was demonstrated that these methods have been successful in nearly every instance where tried. Deep plowing and intense cultivation have been proven among the most important factors in successful agriculture, whether on so-called dry farms, or on irrigated lands.

The assertion, made in the past, that a certain amount of moisture—some said twenty inches—was absolutely necessary for the raising of a crop, has been entirely disproved. We are beginning to realize that we do not know how much moisture is really necessary to raise a crop under arid, or semi-arid conditions. Farmers gave the records of their work and produced exhibits of grasses, grains and roots grown upon land which received no moisture other than natural precipitation, which in only a few cases was up to the minimum formerly claimed to be necessary.

Prof. Linfield, of Montana, said that, notwithstanding the assertions made by scientists in the past that it takes 500 pounds of water to produce one pound of dry matter, in Montana crops of grain had been raised on ground which did not receive as much moisture as many people had been taught to believe was necessary. One of the most important results of the Congress was that it demonstrated that, while it may take a certain amount of water in some sections to dissolve the chemicals in the soil, making them available for plants to utilize, it is true that in the arid and semi-arid regions the fertility of the soil is extremely high and much less water is required to make plant food available in high altitudes. From reputable sources it was shown that big paying crops have been gathered under conditions where the majority of the people never believed such a thing possible.

These facts prove that farming in its broadest sense is decidedly in its infancy and that dry farming methods are among the most important factors in its development.

In high altitudes moisture can be conserved and held subject to the demand of growing crops by a proper system of plowing and cultivation. Big paying crops have been raised by farmers who received the minimum moisture as advocated by some experts. In cases where the rainfall for the district was the minimum one year and normal the following year, by raising one crop in the two years, the farmer has harvested a profitable crop. The many examples of this result brought out during the Congress demonstrated that a very small amount of moisture precipitated at a propitious time, helps vegetation much more than farmers realize.

The Congress has made the farmers of all the world ask, "What does it mean?" It has brought inquiries from all over the earth which show the intense interest taken in its work and indicate that a great many intelligent farmers will study their own conditions and apply principles advocated by successful dry farmers so as to get better crops and insure themselves against drouth. The Congress has interested gentlemen connected with the bureaus of the Department of Agriculture at Washington and there is no doubt that these gentlemen are now in heartier accord with the welfare and improvement of the dry farming interests than ever before. They showed this by their presence at the Congress and several of them publicly stated that they realized that the Dry Farming Congress represents a movement which is one of the most important in its economic and educational significance that has ever existed.

The Congress has aroused the interest of all bright and intelligent men who seek the welfare and success of the agricultural communities in which they are located. The railroads, always interested to a certain extent in the agricultural development along their individual lines, were represented at this Congress as at no previous assemblage of the kind. The number of representative railroad men attending the Congress showed that they were heart and soul in accord with the expansion of this movement along educational lines. These men realize that the prosperity of any community, city or town, depends to a large extent upon the agriculturist.

Mr. Frank Walters, of the Chicago & Northwestern railroad, furnished an example of the intense interest aroused by this educational movement. In behalf of his road he offered to place at my disposal a train whereby I could take a carload of exhibits through the country, showing what could be raised by dry farming and could reach the people along that line with a course of lectures. Vice-President and General Manager A. L. Mohler, of the Union Pacific, proved his interest in the work by visiting Cheyenne the opening day of the Congress. This brings to mind a fact not generally known, that while Mr. Mohler was general manager of the O. R. & N. at Portland, he was the prime mover in the establishment of demonstration and experiment farms at various places in Oregon under the auspices of careful and conservative experts in so-called dry farming. At one of these farms which he was the means of getting placed in Oregon, there are over 100 varieties of wheat and a great diversity of grasses being tested to find types best adapted for the use of farmers in Eastern Oregon and Eastern Washington. Mr. Mohler's interest in the welfare of agriculturists along his line remains unabated and he has a way of getting his company always to respond with funds to help along the good cause. G. W. Holdredge, of the Burlington, is another railroad man who gave evidence of his interest in the Congress. Busy as he always is, he dropped his work and started for the Congress, but, unfortunately, was prevented from attending its sessions by the storm. Largely through Mr. Holdredge's influence the Burlington company has given a great deal of help to dry farmers during the last few years.

One of the results of the Congress that will bring increased benefit to the western states throughout the coming year has been the fact that it has opened the eyes of the people in congested farming communities and in the densely populated cities of the East and the eyes of renters on farms and in cities to the fact that there are thousands upon thousands of acres of magnificent fertile land in many of the western states open to homestead. Or, they can buy deeded land at reasonable prices. They have been taught that experiment stations have been established in different states and have been informed that the Dry Farming Congress is working to secure the establishment of many more experiment stations. At these stations there are experts at the service of the settlers—experts both willing and able to show the best manner by which the maximum returns can be wrested from these fertile lands.

The stockman and the farmer have been brought closer together in bonds of mutual friendship and benefit instead of in the clash of enmity by this Congress. Conditions over a very large area of so-called arid and semi-arid land are such that nutritious fodders and crops are raised, or could be raised, for the stockman's herds and flocks. The stockman has begun to realize that it is necessary to supplement his winter range with feed. The dry farmer has shown him how to do this. This means mutual benefit, because the dry farmer can supply the feed for the stockman and the latter's animals. Instead of starving them to death, as in the past, the animals will be humanely treated and vast losses prevented.

Most of the banks, heretofore, have refused to lend money on what is called a "range proposition." These conservative and intelligent bankers realized that the risk was too great under existing range conditions to lend money to stockmen not prepared with feed to take care of their stock when necessity occurred. With a steady and reliable source of feed supply, the stockman will be placed upon a better footing in the eyes of the financier. For this the stockman can thank the dry farmer. The benefits from dry farming are not confined to those who raise cattle and horses, but the sheepmen also realize they get more wool and better lambs when their flocks are taken care of and fed when necessary. The same evolution that took place years ago in the great states of Oregon and Washington, where it was said that those magnificent empires were fit only for range purposes, is now taking place in Wyoming, Montana, Colorado and other states. It has been shown that under normal and abnormal conditions, by a proper system of intelligent work, grains, grasses and other forage crops can be raised in the greater part of these states. Where it was supposed only a few years ago that it was impossible to utilize these lands for anything except pasture, it has been forcibly brought before the people by the records of their experiments that those farmers who applied common sense methods and followed the instructions of the experts who have developed the various systems of dry land agriculture, have never failed.

At this Congress there was an exposition of dry farm products. In the exposition hall were also, by special permission, some examples of irrigated products. In this case, as in a number of instances in recent years where crops raised by dry farming and those grown under ditch have been brought into competition, the cereals and general exhibits raised by dry farming methods, to the astonishment of the world, have beaten the irrigated products, not only in quantity, but in quality.

This Congress by its demonstration of the possibilities for crop production in the arid and semi-arid regions has given encouragement to an immense number of agriculturists; has given them new life and new interest in their work by proving to them that, even if some fail, it is more than likely these failures are due to lack of thorough work and not to the soil or climate.

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"The second step in the matter of marketing is getting the fruit from the trees and into the car. This is the most important part of the process. The appearance of a carload of fruit has much to do with its success in the private sale market. A well-loaded car is half sold before the prospective purchaser has seen the fruit. The same is true at auctions. On the other hand the fruit may be ever so good, but an unsightly appearing car will leave the shipper with a problem on his hands.

"The growers of Southern California now ship about 80 per cent of the fruit that goes out. The exchange handles about 60 per cent of this amount, and the private exchanges and grower-shippers 20 per cent. The success of the orange industry the past few years has been due to the amount of fruit handled by the growers themselves.

"If the 250 packing houses of Southern California were acting independently, we would be experiencing the same trouble that Florida is having. We would have some bare markets, regardless of the amount of fruit going forward. It is the policy of the exchange to hold things on a level basis, and conditions are better now with 60 per cent of the fruit handled through the organization than it was when there was only 40 per cent.

"A great advantage is gained in the matter of securing supplies, as has been illustrated in the long-term contracts which have protected the exchange from the manipulations in box deals. Tariff and traffic matters also have the careful attention of the organization.

"In the matter of advertising, we have come to the conclusion that we can make enough noise through the newspapers to sell 50 per cent more fruit. We commenced in Iowa a few years ago and increased the sales about 33 per cent. We have extended the advertising campaign somewhat, and the second year's experiment in Iowa looks better than the first. By covering the whole country at a cost of $200,000, we believe we can make the people eat 40 to 50 per cent more oranges. If so, then the question of over-production will quite or nearly disappear."—B. A. Woodford, manager of California Fruit Growers Exchange, before Y. M. C. A. Lecture Course at Riverside.

RED SPIDER.

From a report made by the Sutter County Horticultural Commission on Red Spider, we quote:

The red spider on almonds and prunes is usually controlled by the thorough application of dry sulphur on the foliage.

Almond trees should be treated as soon as the leaves appear in March. A second application is advised from the 1st to the 10th of April. A third application should be made from the 1st to the 10th of May.

Prune growers should watch their trees for the appearance of red spider and apply the sulphur as soon as the pest is seen. During past seasons the appearance of red spider has been noted from the 1st to the 10th of July.

When the thorough application of dry sulphur to the foliage will not control the red spider on almond trees (the cases are rare) use the

Sulphur Spray.

Sulphid of potash stock solution—granulated or powdered concentrated lye, 15 pounds; sublimed sulphur, 18 pounds; water to make 20 gallons.

Stir the sulphur and lye together in a vessel which will allow plenty of room for boiling. When well mixed add about a pint of water, placing it in a slight hollow in the mixture, and stir slowly. The mixture will soon begin to melt and boil, forming a red fluid; stir until the boiling ceases and then add water to make twenty gallons. This stock solution will keep for a while, or indefinitely when thoroughly protected from the air.

Flour Paste.

Wheat flour, four pounds; water, four gallons.

Place the flour in a box with a screen bottom (common wire window screenings) and pour the water through it until all the flour has been washed into the receiving vessel. It will then be finely divided and free from lumps. The mixture should then be brought to the boiling point, being stirred constantly, thus forming a thin paste without lumps.

The Spray.

Sulphid of potash stock solution, 1 gallon; flour paste, 4 gallons; sublimed sulphur, 10 pounds; water to make 100 gallons. Place the above ingredients in the spray tank and keep well stirred while using. A power outfit provided with a mechanical agitator is very desirable in working with this spray. Nozzles of the plug-cock type, which can be cleaned by the simple turning of a valve, are best adapted for the sulphur spray.

Every effort should be made to wet the upper and lower surface of both leaves and twigs, also the interior of the tree. The spray is cheap and material should not be spared.

The above spray was thoroughly tested and found satisfactory in Sutter county in 1903 by W. H. Volck of the State University, and is recommended by him for all cases of red spider not yielding readily to the dry sulphur treatment.

A NEGLECTED FRUIT.

A fruit little known now, but destined to become one of our most valuable articles of food, is the avocado pear, commonly known as the alligator pear, and which flourishes in this region of Florida. That it is coming more to the front as an article of daily diet, was evidenced by the local demand for it during the recent season for it, and its cultivation will likely receive greater attention in the future.

Although strictly speaking a fruit, the avocado has none of the characteristics common to most fruits. The absence of sugar and acid, which con-

stitute the food value of the great majority of fruits, places it in a class with the olive, the value of which lies in its oil.

The avacado is very rich in oil, containing from eight to nearly twenty per cent according to the variety; and like the olive, one has to acquire a taste for it. Upon eating it two or three times, the most fastidious fall into the increasing line of "alligator" pear enthusiasts. The oil is easily digested with most people, and is very nourishing.

The Miami Metropolis published an article on this subject in which it was said that theoretically the avocado ought to be (and this is borne out by the reports of many who know) a fat-producing food, especially in the cases of people who have physically run down by the ravages of disease. But this cannot be taken as a rule to fit all cases. Most all fruits, in fact there are none known, that do not have ill effect on some people.

It is not a juicy fruit, and in its natural state, the edible portion resembles cheese. Being classed with the salad fruits, there are various ways of preparing it, but in Punta Gorda and neighboring towns it is generally eaten with simply pepper and salt, the pear being cut in halves and these sprinkled on it.

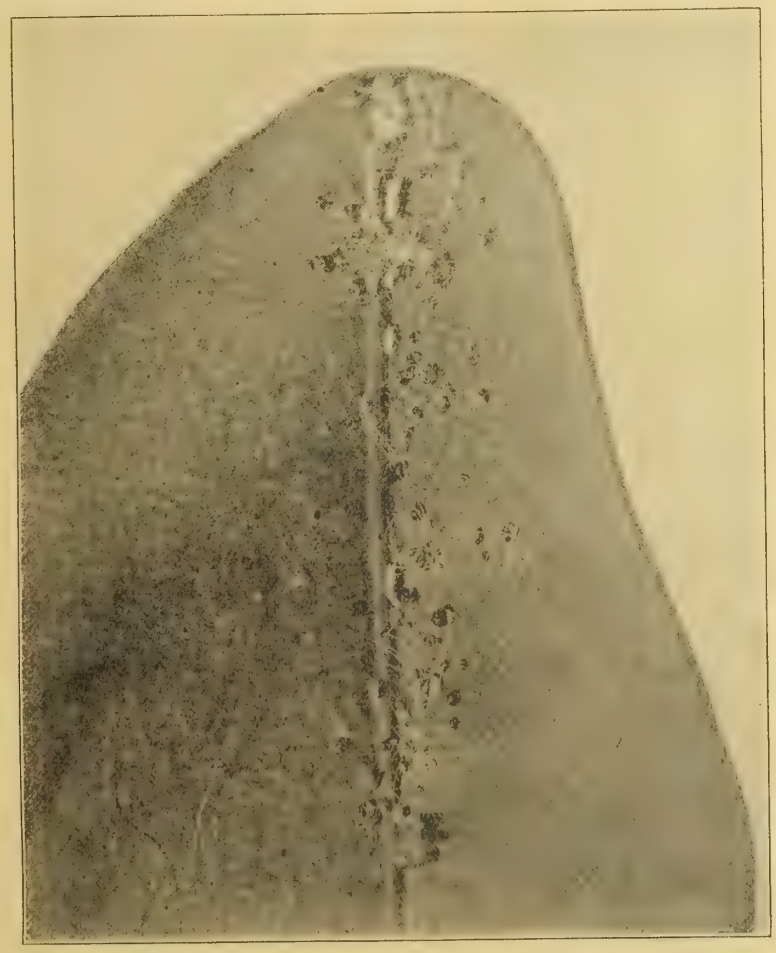
Doubtless the popularity of the avocado will in the near future attain somewhat to the proportions of that of olive oil. So, persons who are wise, will put out avocado trees in corners and other unoccupied parts of their lots about town, and reap the benefits that time will bring to them. —Florida F. and P. News.

The first "run" on banking institutions in London was in 1667. Many Lombard street goldsmiths and bankers had lent out the money intrusted to them and, being called upon for payment, were unable to meet the demand. A crowd of creditors and others assembled, and a riot followed, in which four bankers were hanged at their own doors before order could be restored and the angry creditors persuaded that they were not being swindled.

ICERYA PURCHASI.

In regard to this scale, cottony cushion scale, fluted scale, white scale, attention should be called to the peculiar way in which it secretes honey-dew.

Upon a young orange tree in the laboratory thousands of the young were propagated. These settled usually along the midrib of the dorsal and ventral surfaces of the leaf. At an early stage, a week after birth, the young began to secret honey-dew in considerable quantities, and also numbers of very delicate waxy filaments. Along these latter the subsequent honey-dew passes and collects at the tips in the form of clear transparent globules. The wax filaments vary from ahalf inch to three inches in length, and are so frail that the slightest disturbance of any kind would detach them, and yet they are able to support quite a large drop of honey-dew. Upon the dorsal surface of the leaves these filaments extend in a very confused state, same appearing to be independent of the



Young White Scale on Orange Leaf.

large globules of honey-dew shown in the accompanying cut. The confusion is due to the fact that the filaments not being able to hang down as they are excreted, drop over and are shoved along the surface of the leaf. The honey-dew, passing out along these filaments, collects in the large transparent globules shown in the figure. Those globules isolated, are so, simply because the delicate waxy threads have been blown away.

Such a state of affairs cannot exist in open air because of the disturbances in the trees caused by the wind, for even the slightest breath will blow them all away.—E. O. Essig in Journal of Entomology.

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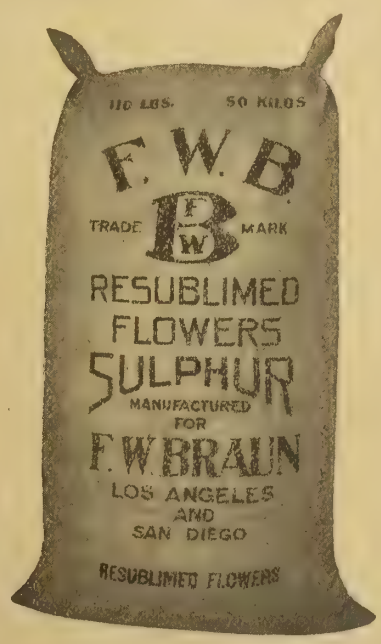

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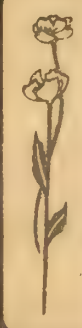

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Deciduous Fruit Culture

By J. W. Mills

SHIPPING GRAPES.

At a meeting of Lodi grape growers to consider ways of securing better results from shipping grapes, the following address was delivered by G. W. Horsford of the Government service:

"One of the leading orange growers of Southern California said in a recent speech that, in his opinion, the arrival in any market of a few cars of oranges showing any considerable amount of decay reduced the prices received even for sound fruit from 25 to 50 cents per box. Any one who has handled fruit to any extent knows that nothing demoralizes the markets so quickly as the receipt of decayed fruit or fruit which will not hold up until it can be disposed of by the retail trade.

"With the increased production of California table grapes it is becoming necessary to distribute this fruit more widely among the smaller markets of the East. These markets can not dispose of carload lots as quickly as the larger auction markets. In order to develop a profitable trade with them, therefore, it will be necessary to put the fruit on the market in such condition that it will remain sound for some time after unloading from the cars.

"From reports given us by many of our own growers, as well as from our experiments of the past season, we know that you are having trouble with the grapes handled commercially. With a view to determine, if possible, the cause of the decay or rot and to find out how it may be avoided the United States Department of Agriculture has authorized our work with you. For the benefit of those who did not see the experimental lots packed I will describe the plan of the experiments.

"Each experiment contained three different lots. One lot was packed in tight boxes holding about the same quantity of grapes as a regular shipping crate. A filler of finely granulated cork was used with this lot. The cork used was much finer than that commonly used in the grapes imported from Spain. The grapes that were packed in cork were graded and packed by ourselves. We endeavored to cut out all berries split or injured in any way. We took plenty of time and handled them as carefully as we knew how. In part of the places we picked the fruit ourselves. These lots will be referred to as the cork lots.

Another lot was packed in the ordinary shipping crate. In most cases these were packed by the regular packers at the place where we were working. The same grapes were used as for the cork lots. Probably they were packed and graded as carefully and perhaps more perfectly than we could have done ourselves, because they were done by experienced packers. In the first experiments put up the special pack was packed in the regular four basket crate. But when these were opened we found considerable damage had been done in crowding the grapes into the corners of the baskets. After that we used the long cluster basket, two to the crate. Later we found that damage was done in pressing the clusters into the baskets. Accordingly we asked the packers to lay the clusters lengthwise of the basket and to use no pressure in trying to fill corners or in trying to finish the top level and even. We tried also to avoid any pressure of the cover in the specially packed crates. If the crates were very full we used sufficient cleats to prevent the cover from presing the fruit.

The third lot was the regular commercial. In every experiment the grapes used in the cork pack and special pack were the same as those used in the regular pack. About half the experiments were put up at places where they were having reports of decay in their shipments and about half in places where the grapes had a reputation for going through in sound condition.

Half of the packages of each experiment were shipped immediately after packing; that is, they were shipped as soon as possible after packing. In two of the experiments the immediate shipments were picked, packed and shipped the same day, but in most cases the immediate shipment was shipped the day after packing. The other half of each experiment was delayed about two days. The purpose of this experiment was to determine how much decay, if any, resulted from delayed shipment or delayed cooling.

In order to get as nearly an average condition as possible we used three boxes of each, placing one in the top layer, one on the bottom layer and one in the middle layer of a stack. A stack midway from the door to the end of the car was used and all the crates and boxes of each experiment placed in the same stack.

All the shipping experiments went to New York and were examined there very carefully by one of our own men. But in order to make it possible for

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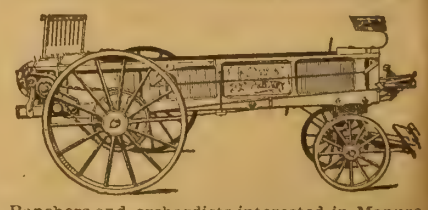

Ranchers and orchardists interested in Manure Spreaders will receive valuable information and catalogues by addressing us on this subject. We carry these spreaders in stock ready for immediate delivery.

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the growers themselves to see the results we held one crate of each lot at Lodi. They were held in a refrigerator car which was sidetracked near the ice house and kept iced by the Southern Pacific Company. We kept a registering thermometer or thermograph in the car. From the record thus obtained we know the temperature of the car during all the time we had fruit in it. The average of the highest temperature of each day is 40 degrees and the average of the lowest reading of each day 36 degrees, making the average temperature of the car just 38 degrees.

From our records of temperatures of refrigerator cars in actual shipment we know that this temperature is lower than could be obtained in a full car of fruit. We should not lose sight of the necessity for quick cooling of fruit in shipment. But the fact that decay did develop in considerable quantities in this car shows that much of the trouble which develops in shipment can not be overcome by refrigeration. If we are to put fruit into distant markets in sound condition it must be packed properly before it is put into the car. No amount of icing or cooling will save fruit which has been injured in packing or which has been imperfectly packed.

In packing our cork lots we found that in most cases the packers were working with very poor light. In some places the packers faced the light, in others they worked in low sheds upon all four sides and very poorly lighted.

We found also much damage in some places from picking. After packing from a big box we had picked, one packer remarked with apparent surprise that there were only two or three loose berries in the bottom of the box. Many pickers are throwing the clusters into the box carelessly, in many places the boxes are handled roughly in loading and unloading to the packing sheds, and we found in some cases that the lug boxes were filled so full that the clusters were injured in stacking the boxes. The injury from all of these causes is generally a loosening of the berry at the pedicel or stem. This is the hardest kind of an injury to see in culling and most discouraging to the packer because so unnecessary.

In a few places we found it the rule for the pickers to cull the split and decayed berries as they picked in the field. In handling this fruit after them we found a great many berries loosened at the pedicel. Since it is so easy to make this kind of injury and so hard to detect it, we question whether culling in the field is best.

In culling large, close clusters having a large proportion of split and injured berries we found that we often injured the berries around the pedicel. Some lots may have so many defective berries that thorough culling will make it too expensive to handle profitably. It certainly does not pay to ship these lots with all this chance for rot in them.

While we found that some grapes apparently stood some pressure of the cover without serious trouble, there is no question that serious injury is done the general run of grapes in this way. If the crates must be filled so high, put on sufficient cleats to keep the covers from pressing the grapes.

NAPHTHALINE TREATMENT FOR CUT WORMS.

In view of the damage recently done to young vine plantations in several vineyards in the northeast by agrotis caterpillars, commonly known as cut worms, a recent article by M. P. Hoc in the Progres Agricole et Viticole of Montpellier (France) should prove of interest to vine-growers.

M. Hoc deals with the damage caused by another shoot eating insect, Helops lanipes, and describes how young vines were saved from the ravages of this grub by the use of naphthaline at the rate of ½ to 2-3 ounce per vine. He also refers to the use of another insecticide known as vaporite, but it is not obtainable in Victoria.

Naphthaline should be well worth a trial against our cut worms. The drug is obtainable in Melbourne at 4d. per pound wholesale. The earth around the young vine should be removed to a depth of a few inches, thoroughly pulverized, and the coarsely powdered naphthaline well mixed with it. This soil should be employed to reform the protecting mound round the base of the vine, which will, owing to the poisonous vapor of the drug, no longer serve as a shelter for the cut worms during the day time.

Another method would be to apply it in holes a few inches deep on, say, three sides of the vine. As soon as the drug is placed in the holes they should be blocked up with soil. This was the method followed in the case of "vaporite."

It would be well to try a few experiments in order to make sure that no damage is done to young shoots by the naphthaline. According to M. Hoc, up to 2-3 ounce per vine would appear to have had no injurious effect on vegetation.—Journal of Agriculture of Victoria.

* * *

We are informed that Naphthaline a by-product of gas works, is cheap and easily secured in California. We never heard of its trial here. With valuable plants it may be worth consideration.

IMPROVED CASABA MELONS.

These melons are a much stronger grower than either cantaloupes or muskmelons having a much more vigorous and longer root system, hence they will do on soil where the others will not grow at all and stand drough about as well as do water melons. If planted early, that is before the first of May, they will in warm localities produce two crops. If we want a good late melon we plant as late as the first of July.

They will grow and thrive on almost any soil, but do best on a light, deep, sandy mesa soil. While the plants are small they must not be neglected. They need shallow cultivation, not over four inches deep, and somewhat shallower near the plant. A V shaped harrow such as you can make yourself fitted with cultivator handle is better than any other that you can buy. If you make it about five feet wide you can drive the horse along the row if hilled and at each hill lift the wing of the harrow over the hill. If properly done the plants will need hardly any hoeing and the field need not be marked off, except one way, as cross cultivating is not at all needed.

I could write a whole book on the cultivation of melons, but suffice it to say, that in every respect the culture and care of Improved Casabas is identical with that needed for any other melon except that these melons are inclined to grow larger than the market demands. Two plants should be left in each hill and while the distance between rows one way should be at least fifteen feet the other way it should be not more than five except in the late planted ones. Here the distance may be limited to four feet one way and ten the other. The reason for having the distance long one way and short the other is that in that way the plants do not get all the ground occupied at the same time as they do when they are planted on the square plan. That plan is apt to give promise of a good crop, but where we can not irrigate a collapse is sure to come at the time the roots meet on all sides.—J. C. Oestergard.

Future Citizens of Kerman, California

J. W. Brooks, J. B. Deardorff, J. W. Lamb, J. W. Cook, E. M. D. Smith, C. E. Wells, C. F. Anderson and L. W. Brooks, all of Towner Co., N. D. Together they bought 220 acres of land March 18, and will help to make Kerman the richest colony in California.

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That the east is burning up with land hunger? That productive lands are getting scarce and hence higher? Do you know that the people east are just beginning to find out that there are agricultural lands in California and hence that we are on the eve of the greatest emigration movement California has ever experienced?

Do You Know

That as a consequence it behooves all who are landless in California but who hope sometime to enjoy the blessings of a landed home, to get busy and to secure the home before the other fellow gets it, and before prices have advanced to where they are prohibitive? That the easterners who are coming here now are astounded with the agricultural possibilities of "New California?" That they are buying themselves, and then going back home spreading the news of their find, and inducing others to come?

Do You Know

That ere long the man who owns productive land here will discover its value, and will refuse to part with it at several times the amount it now takes to "lift" it, and that when that times comes it will be everlastingly too late for many?

Do You Know

That the value of land depends upon what it will produce per acre? That land on the **Kerman Tract** is today the cheapest land in the United States, value of possible products considered? That this fact is becoming known, and that it is bringing more people here than have ever come to any other similar tract in the same length of time?

Do You Know

That the **Kerman Tract excels** when it comes to water right, quality and lay of soil, natural drainage, locaton, and in possibilities for fruit and alfalfa growing, dairying and poultry raising? That it is unsurpassed, if equalled, in the things that go to both home and money making? That it is being populated by the very best quality of people, the cream of the country? That undesirable people are not allowed to buy land here and that those who locate are protected against the scourge which has ruined so many otherwise promising colonies in California? If you do not know these things now

We Are Telling You

And we ask the privilege of further informing you. If you are interested we would like nothing better than the chance to satisfy you upon all these points, either by correspondence or by showing you over the tract. We consider it a pleasure to show interested visitors over the colony, and all comers are accorded courteous and considerate treatment. Our circular explains in detail what is here, and it is free for the asking. Write for it, and do it now. But, what is better, come here and satisfy yourself that the **Kerman Tract** is as represented, and that you are not missing something that cannot be retrieved by not taking advantage of this opportunity now. Either write to

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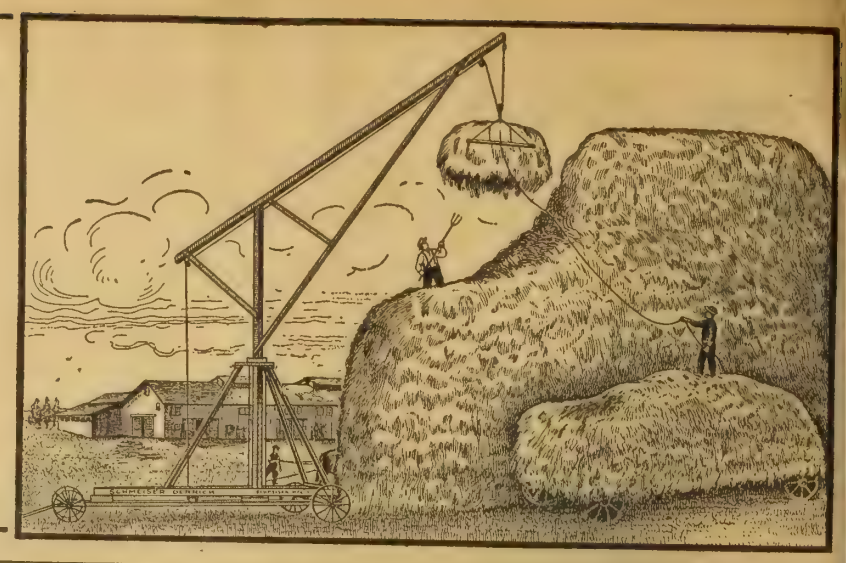


General Agriculture

BREAKING UP ALFALFA.

THE attempt to break alfalfa with the ordinary plow is usually a miserable failure, as it is not suited to the work. A very successful alfalfa plow can be made by adjusting and making a few changes in the "regular sod" plow or "prairie breaker."

The essential points to consider are: The long, strong beam, to steady the plow; the long landside, to resist the tremendous cutting strain. It is often necessary to reinforce the beam with heavy iron to withstand the draft. The plow should be adjusted to cut a very narrow furrow, not over twelve inches. An extra long share, to lap part of the last furrow to prevent the roots when only partly cut off near heel, from whipping around. This can also be prevented by the use of a horizontal cutter, bolted to the bottom of the landside, thus partly cutting the roots in the next furrow. This cutter is forged with a right angle shoulder that fits and fastens with the bolt through the short landside.

The next essential is a very sharp share, drawn thin and hardened, so that it will not be brittle. A sharp share should be replaced each day, and a good file is necessary to touch up the edge once in a while. Breaking alfalfa on stony land is very difficult and is extremely hard on plow shares.

The most essential point in an alfalfa breaker is a long, heavy, well pointed share, with a very wide wing, six or eight inches at the heel, and one and a half to two inches of the edge rolled so as to run almost flat on the bottom of the furrow, thus cutting ahead of the "lift" and avoiding a dragging cut.

The standard plow factories are making alfalfa specials for the western farmer, with extra alfalfa shares; these are chiefly in sulky plows; but where it is not practical to afford such a plow, the walking breaker can be fitted and adjusted to do excellent work, although it is somewhat harder for the man that holds the plow.

Alfalfa breaking usually requires from three to four good, heavy horses for a team. The depth and the time to plow alfalfa are somewhat mooted questions. They vary with conditions. It is usually conceded that fall breaking is a success, but in Colorado alfalfa is generally plowed shallow, four or five inches deep, so that the crowns and roots may be well harrowed to the surface to dry out. Alfalfa is then replowed, one to two inches deeper than it was broken. Alfalfa, when dormant, if plowed under in moist soil, will readily take root and grow if not harrowed out. Many farmers are having better success in breaking alfalfa late in the spring, after the alfalfa is ten or twelve inches high, plowing under the green manure. The growth seems to have exhausted the stored plant food in the roots and if they are all cut off, very little growth will be made, especially if the field is planted to some crop like potatoes that can be well cultivated. Complaints about difficulties in plowing alfalfa usually come from sections where rotation with alfalfa has not been customary.—P. K. Blinn, Colorado Agricultural College.

WHAT BECOMES OF THE GRASSHOPPERS?

During the months of August and September our common grasshoppers decrease very rapidly in numbers. Before dying they succeed in depositing, in little holes, which they are able to dig into the earth, eggs, which hatch to continue their kind another spring. The situations most chosen for egg laying are the borders of infested fields, ditch banks, and roadsides.

If the grasshoppers have been abundant the past summer, the farmer should endeavor to determine where the grasshoppers are depositing their eggs this fall. If they have been present in large numbers, it is almost certain that it will pay the farmer well to take some means to destroy the eggs before they hatch in the spring.

If infested ground can be plowed very late in the fall, or at any time during the winter or early spring, and well harrowed, this will probably be the most effectual means that can be used for the destruction of the eggs or the young grasshoppers that hatch from them, as very few of the latter will be able to find their way to the surface of the ground.

In fields of alfalfa or clover, or even upon ditch banks and along roadsides, where plowing cannot be done, the eggs may be very largely destroyed by thorough harrowing of the surface of the ground. The best tool to use for this purpose is the disk. In case of an infected alfalfa field, the benefit resulting from a thorough harrowing of the ground during winter or early spring will far more than pay for the expense of doing the work, besides destroying the grasshopper eggs. If these methods of destroying the eggs were closely attended to year by year, they would prove of more service than all else that can be done to keep grasshoppers in check.—C. P. Gillette, Colorado Agricultural College.

SKIM MILK.

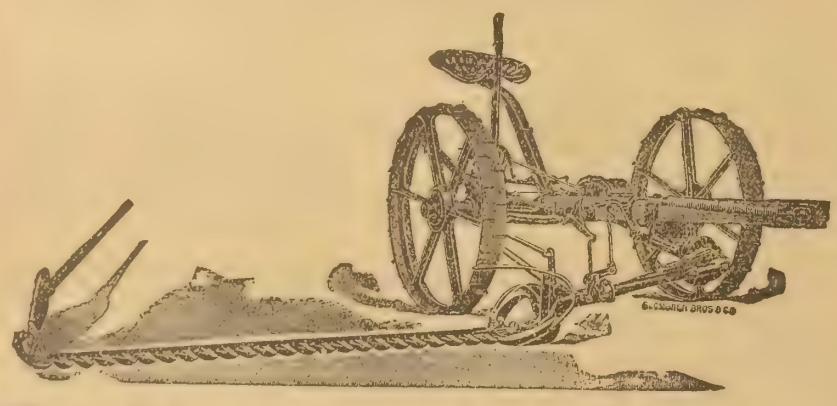
The West Virginia Experiment Station has made some systematic tests to prove the value of skim milk for laying hens. The first test covered 122 days. The 22 hens fed the skim milk laid 1,244 eggs as compared with 996 laid by 22 hens fed a mash wet with water. In another test 60 hens fed the skim milk laid 862 eggs in 37 days, as compared with 632 eggs laid by a similar lot fed no milk. Other tests gave about the same comparative results. The conductors of these experiments estimate under prevailing conditions, with eggs selling at 20 to 25 cents a dozen that the skim milk had a feeding value of 1½ to 2 cents a quart.

Gypsum contains but a small amount of lime and consequently cannot take the place of lime. It was once thought that the beneficial effect of gypsum was due to the amount of lime which it added to the soil, but more recent discoveries have led scientists to believe this is a mistake.

A FRICTION STORY

A small boy can slide faster down a smooth, greased board than he can down an ungreased board full of slivers.

MORAL: A mower which comes closest to eliminating friction will require the least power to operate.



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By Mrs. Minna E. Sherman

CONTAGIOUS ABORTION.

From an excellent address on this subject which concerns all dairymen made before the Imperial County Dairy Association by Dr. J. H. Patton of Holtville, we quote the following with some revisions made by the doctor.

THE literature procurable on this subject is not as exhaustive as the gravity the disease warrants. The United States Department of Agriculture gives us some very good points on the disease in a general way but touch little on the subject of treatment.

Abortion is the term used for the expulsion of the offspring, before it can live, out of the womb. Its expulsion after it is capable of an independent existence is premature parturition. In the cow this may be after seven and one-half months of pregnancy.

Dairymen use the term abortion for the expulsion of the product of conception at any time before the completion of the full period of a normal pregnancy. Abortion in cows is either contagious or non-contagious. It does not follow that the contagion is the sole cause in every case in which it is present. We know that the organized germs of contagion vary much in potency at different times, and that the animal system also varies in susceptibility to their attack. The germ may therefore be present in a herd without any manifest injury, its disease producing power having for the time abated considerably, or the whole herd being in a condition of comparative insusceptibility. At other times the same germ may have become so virulent that almost all pregnant cows succumb to its force, or the herd may have been subjected to other causes of abortion which, though of themselves powerless to actually cause abortion, yet so predispose the animals that even the weaker germs will operate with destructive effect. In dealing with this disease, therefore, it is the part of wisdom not to rest satisfied with the discovery and removal of one specific cause, but rather to exert ones-self to find every existent cause and to secure a remedy by correcting all the harmful conditions. As abortion most frequently occurs at those three-week intervals at which the cow would have been in heat if not pregnant, we may assume predisposition at such times due to a periodicity in the nervous system and functions. Poor condition, weakness, and a too watery state of the blood is often a predisposing cause. This in its turn may result from poor or insufficient food, from the excessive drain upon the udder while bearing the calf, from the use of food deficient in certain essential elements like the nitrogenous constituents or albuminoids, from chronic wasting diseases, from round worms or tape-forms in the bowels, from flat worms in the liver, from dark, damp, unhealthy buildings. In some such cases the nourishment is so deficient that the fetus dies in the womb and is expelled in consequence. Excessive loss of blood, attendent as it usually is by shock, becomes a direct cause of abortion.

Acute inflammation of important organs are notorious causes of abortion, and in most contagious fevers it is a common result. Affections of the chest which prevent due aeration of the blood induce contractions of the womb.

Chronic diseases of the abdominal organs are fertile sources of abortion, especially those that cause bloating or diarrhea, or the diseases of the ovaries, kidneys, or bladder. Privation of water which hinders rumination and digestion; ice cold water, which rouses the womb to contraction and the calf to vigorous movement; a too dry food or a too stimulating food that bring on constipation and straining. Putrid, stagnant water is hurtful both to digestion and the fetus.

Ergotized grasses have long been known as a cause of wide spread abortion in cows. Musty hay causes abortion. Retention in stalls that slope too much behind or over two inches, acts as a strain, the compression due to lying and the gravation backward proves more than a predisposed cow can safely bear. Deep gutters behind the stalls, into which one or both hind legs may slip unexpectedly jar the womb most injuriously.

Aborting cows often fail to expel the afterbirth, and if this remains hanging in a putrid condition it is most injurious to cows in the near vicinity. So with retained afterbirth in cows after calving.

During pregnancy the contact of the expanding womb with the paunch, just beneath it and its further intimate connection through nervous sympathy with the whole digestive system, leads to a morbid craving for unnatural objects of food. In the cow this is shown by the chewing of bones, etc., and also shows a deficiency of lime in the system.

While any of the above conditions may concur with the contagious principle in precipitating an epizootic of abortion, yet it is only by reason of the contagion that the disease can be indefinitely perpetuated and transferred from herd to herd. When an aborting cow is placed in a herd that has hitherto been healthy, and shortly afterwards miscarriage becomes prevalent in that herd and continues year after year, in spite of the fact that all the other conditions of life in that herd remain the same as before, it is manifest that the result is due to contagion.

When a bull living in a healthy herd, has been allowed to serve an aborting cow, or a cow from an aborting herd, and when the members of his own herd are subsequently served by him abort in considerable numbers. Contagion may be safely inferred where living in the same pasture or building does not cause the infection. Cows brought into the aborting herd in advanced pregnancy carry their calves to the full time. But cows served by the infected bull, or that have had the infection conveyed by the tongue or tail of other animals, or by their own, or that have had external genitals brought in contact with wall, fence rubbing post, litter or floor previously soiled by the infected animals, will be liable to suffer.

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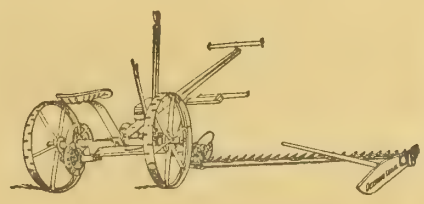

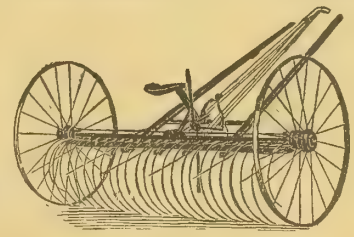

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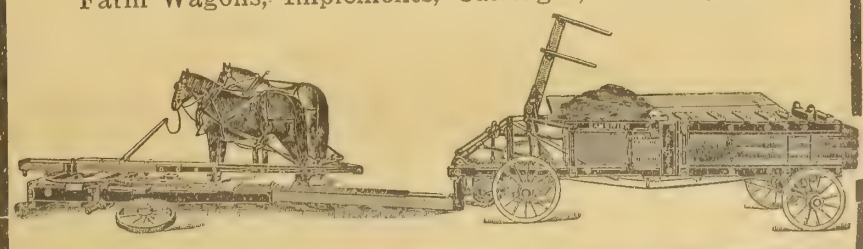

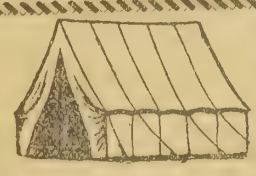

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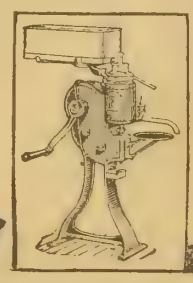

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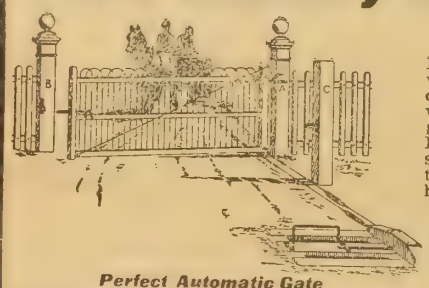

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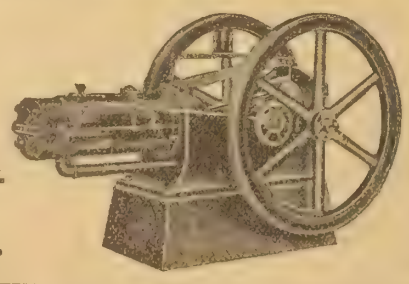

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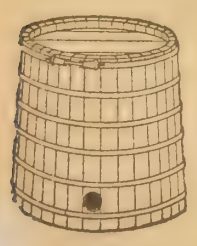

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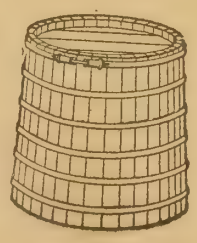

Water Tank

the aborting cow and afterwards inserted into the vagina of a healthy, pregnant cow the latter invariably aborted within a month.

There are cases of tests made in the large stables at Erfurt without any direct intercommunication, but with cows fed and managed in the same way, abortion prevailed for years in the one, while not a single case occurred in the other.

The virus from the cow aborting will cause abortions in the ewe, goat, rabbit and guinea pig, and if it has been intensified by passing through either of the two last named animals will affect also the mare, bitch and cat.

The bacteria of contagious abortion are different and five varieties are reported from different localities. We may reasonably conclude that any microorganism which can live in or on the lining membrane of the womb producing a catarrhal inflamation, and which can be transferred from animal to animal without losing its vitality or potency, is of necessity a cause of contagious abortion.

Symptoms.

As occurring during the first two or three months of gestation, symptoms may escape detection and unless the aborted product is seen the fact of abortion may escape notice. Some soiling of the tail with mucus, blood, and the udder may show extra firmness, and in the virgin heifer or dry cow a few drops of milk may be suggestive, or the fetus and its membranes may be found in the gutter or elsewhere as a mere clot of blood or as a membranous ball in which the forming body of the fetus is found. In advanced pregnancy a cow is dull, sluggish, separates from the herd, chewing the cud languidly, or there may be frequent lying down and rising, uneasy movements of the hind feet or the tail and slightly accelerated pulse with breathing and dry muzzle.

The swelling of the vulva is one of the later signs and is accompanied with discharge of mucus. The milk changes color and becomes a rich creamy yellow. The last two changes come usually two days before the discharge of fetus.

Prevention.

Feed generously of salts, thus correcting the morbid appetite, ground bone and lime. Feed succulent diet (ensilage, steamed food, roots, pumpkins, apples, potatoes, etc.) Sudden changes of food are always reprehensible. Guard against bloating. Three drams daily of chlorate of potash before the recurrance of the expected abortion, has been held to be useful. Separate the aborting cows in isolated building, yard and pasture, allowing no other cows to have access even to their manure, liquid or solid. Scrape and wash the back part of the stall and gutters and water it with a solution of five ounces sulphate of copper in one gallon pure water. This cleaning should be daily.

A cow aborting for three years becomes immune as far as she is concerned, but is still capable of transmission. Dissolve 1 dram corrosive sublimate, 1 ounce each of alcohol and glycerine and shake this up in a gallon of water to use as an injection into the vagina and as wash for the parts about the vulva and the root of the tail. Wash once a day with permangnate of potash in strong solution. This is an excellent vaginal

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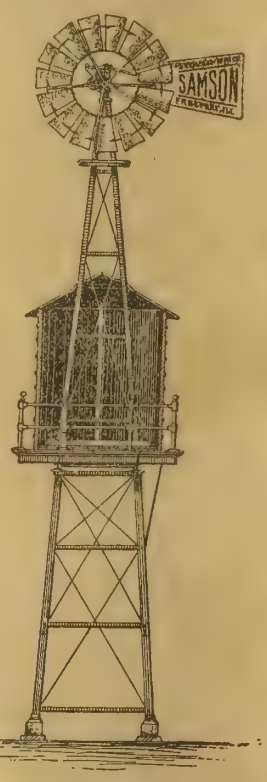

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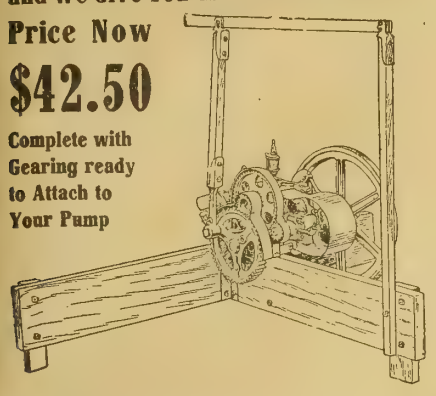

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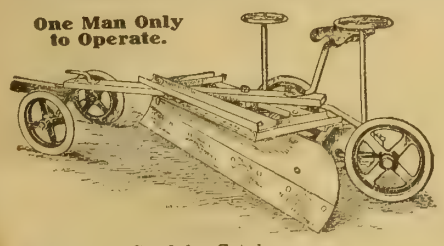

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wash and there is little danger in its use. Exclude all outside cows from service. In purchasing breeding animals, subject them to quarantine and treatment before placing them in the sound herd. An injection of a two per cent solution of pure carbolic acid of 10 cc in the suspected animals is said to be a preventive.

Treatment.

1. Give a hypodermic injection of 10 cc (about 2¾ drams or one third of an ounce) of two per cent carbolic acid solution once a week in suspected animals, and three times a week where the indications are strong and the time apparently short.

2. A vaginal douche of potassium permanganate. One tablespoon full of the crystal to a gallon of water. This will not irritate the epithelial lining and should be used very liberally once each day for a period of three weeks and the treatment should follow each period for three months. The tail and soiled parts should be wiped off and washed with a strong antiseptic solution.

3. The barn and grounds should be rendered sterile by liberal use of five ounces of sulphate of copper in a gallon of water. This treatment with the isolation and proper feeding will go a great distance toward a permanent stamping out of the difficulty.

The bull should be treated with the hypodermic injection of 10 cc of two per cent carbolic acid. The sheath should be washed before and after each service.

Fearful Loss.

When we consider there are in America over 20,000,000 dairy cows and 10,000,000 beef cows and it is said twenty-five per cent of these are afflicted with contagious abortion; thus at least 7,500,000 cows are loosing $135,000,000 annually, or are failing by that amount to produce what they should produce in healthy condition, it is no wonder we are giving this subject much thought.—Dr. J. H. Patton, Holtville.

HARD MILKERS.

This trouble is due to an abnormal contraction of the sphincter muscles at the teat and oftentimes reduces the value of what might have otherwise been a valuable cow as no one wishes to purchase or own what is termed as a hard milker, but if stock owners knew how easily this trouble could be overcome they would never think of disposing of a hard milker at a sacrifice, as is now being done by many.

The mere fact that a cow is a hard milker does not indicate that she is not a good milker, but owing to the fact that she is a hard milker she is oftentimes neglected at milking time by a disgusted milker, who leaves a large quantity of the milk in her udder that should have been drawn out.

Stockmen who know how to handle such cases oftentimes buy valuable cows owing to the fact that they are hard milkers, and by the use of a teat plug and a few treatments for hard milking, cause them to become splendid, easy milkers, thereby increasing their value many more times than the cost of the treatment. A milking tube should never be used in such cases, as there is too much danger of infection and the results are not as good as from the use of the teat plug.—Dr. David Roberts, Wisconsin State Veterinarian.

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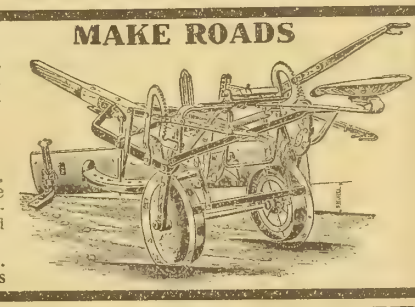

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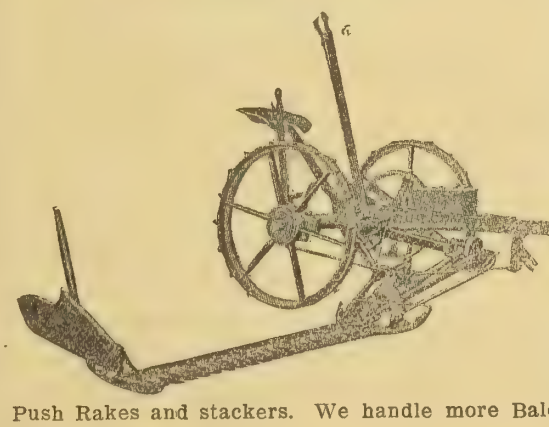

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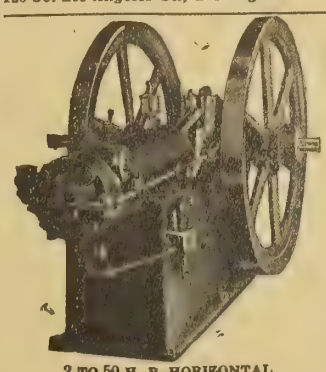

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Contents

HAWAIIAN ISLANDS GROW SUPERIOR PINES. Cover.

DRY FARMING CONGRESS, 563.

CITRUS.—Problem of Marketing Citrus Fruit; Red Spider; A Neglected Fruit; Icerya Purchasi, 564, 565.

DECIDUOUS.—Shipping Grapes; Naphthaline for Cutworms; Casaba Melons 566, 567.

GENERAL AGRICULTURE.—Breaking up Alfalfa; What becomes of Grasshoppers; Skim Milk, 568.

LIVE STORK AND DAIRY.—Contagious Abortion; Hard Milkers, 569, 570, 571.

EDITORIAL.—Green Orange Shipments; Exterminate the Pest; Stock Quarantine; Large Spraying Plant; Changes in Our Educational System; Scientific Agriculture, 572.

AGRICULTURAL NOTES OF THE PACIFIC COAST. Northern, Central, Southern, the Coast, 573.

POULTRY.—Detrimental Changes in Eggs; Roup; Notes; Chaff Pile; Beginner's Troubles, 574, 575, 576.

QUERIES:—Summer Pruning; Fly Repellants; Aphis; Red Ants; Garlic; Worms Climbing Trees; Essex Hogs; Peanuts, 577, 578.

HOUSEHOLD.—Dying In Harness; Trouble In the Household; Altering Children's Dresses; Bread Making; Random Shots, 580, 581.

PRODUCE MARKET.—Los Angeles Markets; San Fancisco Markets; Citrus Markets, 582, 583.

GREEN ORANGE SHIPMENTS.

The shipment of green oranges from Florida has reached a state where an appeal has been made to the State Legislature to protect the growers from themselves by passing a law preventing such shipments. Regarding the matter the Florida Fruit and Produce News says:

"Considerable opposition is being manifested to the bill introduced by Representative Taylor, intended to prevent the sale of unripe citrus fruits.

"The bill in question does not mention the condition of the fruit but sets arbitrary dates between which no oranges or grapefruit can legally be gathered, sold or shipped.

"It is pointed out by the opponents of the bill that much early fruit ripens in the state by October 1 and that the prohibitive period mentioned in the Taylor bill would destroy entirely the value of this fruit.

"It is also stated that the bill would work a great injustice to the southern counties of the state, where oranges and grapefruit ripen much earlier than in more northern latitudes.

"While every possible legal restriction should be placed on the sale of unripe fruit, a practice which has militated seriously against the Florida fruit in the past, it would be well to have a bill drawn with every contingency carefully considered in advance and The Tribune would suggest that Mr. Taylor hear from the people interested in the citrus fruit industry before pressing his present bill."

On the same matter the Tampa Times says: "Bills for the regulation of the shipment of fruit from Florida should be carefully considered by the legislature and passed with great caution. Oranges and grapefruit do not mature and ripen by the almanac.

"It is a well known fact that the thin skinned fruit grown on certain kinds of hammock land ripens and is fit for shipment and consumption earlier than fruit grown on the ordinary pine lands of the state. It should be borne in mind that it is the fitness for consumption that should be the test and not the date of shipment.

"Coloring up by any sort of treatment should be strictly prohibited. Inspection of shipments for a few weeks at the beginning of the season would probably correct and prevent the shipment of green and immature fruit, and if there is much or any fruit ready for shipment at an earlier date than prescribed by one proposed act before the legislature it should be allowed to go forward."

EXTERMINATE THE PEST.

Florida has finally awakened to the necessity of doing something to protect her horticultural interests from insect pests which have heretofore been permitted to circulate over the state without let or hindrance. We have just received a letter from the Florida Fruit and Vegetable Shippers' Protective Association in which they state that a measure patterned after California and Colorado laws authorizing the appointment of county inspectors is before the state legislature and it is hoped will be passed. Florida has been the dumping ground of other countries for all kinds of pests imported on plants. Florida nurserymen have been most indifferent as to kind stock they have sent out. This has aided in the spread of the insects. This is well known to many Californians because circulars have been received in this State from Florida nurserymen urging the purchase of stock and stating that it can be packed and shipped in a way which will evade the inspectors. Such a spirit in face of the fact that many serious pests which Florida now has, have been introduced into this state and are being fought fiercely. A rigid quarantine has been declared against any living plant being brought here from Florida. This all shows the character of some of the nurserymen with which Florida laws will have to deal.

A letter from the Association says: "In California a similar law has been in successful operation for many years and the present success of California as a fruit producing state is due to the fact that such a law is enforced." California's position as a fruit growing state is due to thorough enforcement of its horticultural laws. Florida's awakening is very slow, but we congratulate her that she is finally getting the spirit as is shown by the orange growers in visiting various citrus sections of this state to get the very best information possible on the subject of citrus culture which shows that Florida growers propose to do things more progressively. We hope this spirit will continue and she will become a greater fruit producing state than she could have been under the former method of letting the fruit industry care for itself.

STOCK QUARANTINE.

The State of South Carolina has just enacted a law in which it stipulates that "All shipments of live stock, except those for immediate slaughter, must be accompanied by certificate of health showing that the animals are free from contagious or infectious diseases. This certificate can be issued by the state veterinarian or assistant state veterinarian of the state from which shipment is made, or by a veterinarian in the employ of the U. S. Bureau of Animal Industry or by any competent veterinarian authorized by the State Veterinarian of South Carolina. All health certificates must be in duplicate (these certificates will be furnished qualified veterinarians and transportation companies at actual cost) the original of which must be forwarded to the state veterinarian of South Carolina and the duplicate must be attached to bill of lading for said animals." Further that all cattle over six months of age except those for immediate slaughter must be tested with tuberculin and must be free of all tuberculosis before being brought to the state. This test must be made within 30 days preceeding shipment. A fine of not less than $500 nor more than $1,000, also imprisonment, is the result of violation of the act. The act also allows indemnity for tubercular and glandered animals which are destroyed by the state authorities.

The law can only be beneficial to stock interests of the state and its thorough enforcement will result in a higher grade of stock on all farms.

A LARGE SPRAYING PLANT.

A novelty in the form of a spraying plant has been constructed in the orchard of a large fruit grower in Sacramento Valley, in fact it is said to be the largest pear orchard in the state. The plant consists of pipe lines running through the entire orchard through which spraying material is forced and trees are sprayed direct from the hydrant, located on this pipe line. This has been made necessary from the fact that when necessary to do spraying the ground has been so soft that it was impossible to enter the orchard with a wagon. By means of this system 100 acres of pear trees were sprayed by sixteen men in three days.

There are but few orchards where such a scheme is necessary or advisable. But it shows where yankee ingenuity overcomes obstacles.

CHANGES IN OUR EDUCATIONAL SYSTEM.

"In every part of the United States there seems to be one mind, on the part of those capable of judging, on the necessity of redirecting the rural schools. There is no such unanimity on any other subject. It is remarkable with what similarity of phrase the subject has been discussed in all parts of the country before the commission. Everywhere there is a demand that education have relation to living, that the schools should express the daily life, and that in the rural districts they should educate by means of agriculture and country life subjects. It is recognized that all difficulties resolve themselves in the end into a question of education. The most necessary thing now to be done for public-school education in terms of country life is to arouse all the people to the necessity of such education, to coordinate the forces that are beginning to operate, and to project the work beyond the schools for youth into continuation schools for adults."—Country Life Commission.

SCIENTIFIC AGRICULTURE.

Evidence of the importance which science applied to agriculture is assuming in other American republics was furnished by the First Pan-American Scientific Congress recently held at Santiago, Chile, which was attended by representatives from all of the American republics except Hayti, and at which discussion of subjects related to agricultural education and research formed a prominent feature of the proceedings. A section of the congress was devoted exclusively to the consideration of such subjects, and steps were taken to make this feature even more prominent at the next congress, which is to be held at Washington in 1912.—Experiment Station Record.

Shop Talk

TWO GOOD BOOKS.

Those who have seen "Swine in America" and "The Book of Alfalfa," both written by F. D. Coburn of Kansas, say they find them full of information as an egg is full of meat. Since the recent review of the Swine book several inquiries have been received as to price and we are glad to announce that it is only $2.50. It is a large book of more than 600 pages and profusely illustrated. We will be glad to forward orders for our subscribers at publisher's price. The price of the book of Alfalfa is $2.

Agricultural Notes of the Pacific Coast

Northern California

Bowman, Placer county, is organizing a Farmer's Union.

San Leandro, Alameda county, will have a fine cherry crop.

The wine growers of California meet in San Francisco May 19th.

Prunes about Anderson, Shasta county, promise heavy crop.

San Leandro, Alameda county, will have a cherry carnival July 5th.

Big season for table grapes is the prediction for all Northern California.

Prof. Mackie of the Division of Soil is making a soil map of Sacramento county.

Sacramento County Patrons of Husbandry held a monster celebration on May Day.

Healdsburg, Sonoma county, has just begun the operation of a new creamery.

Loyalton, Sierra county, is considering the proposition of establishing a creamery.

Cherries which have been brought to market have been of exceptionally fine quality.

A large fruit packing house of Healdsburg is being extended and greatly improved.

Vallejo, Salano county, has just formed an eucalyptus company with a capitol stock of $20,000.

The earlier varieties or cherries will be a lighter crop than last year, but later fruit promises well.

The Grape Growers of California will convene in San Francisco, May 19, to discuss methods for protecting the industry.

After all the pressure brought to bear on State Forester Lull the Governor has determined that he shall retain his office.

Engineers Henney and Hopson of U. S. Reclamation Service recently made a tour of the Sacramento valley and inspected the Iron Canyon dam site.

The signing by Governor Gillette of the Wilson bill creating the Yolo Basin Drainage district will results in the reclamation of a great body of fine land.

The flockmasters of Trinity county who won in their recent suit against the county officials who levied a five cent license tax are now willing to compromise on a three cent basis.

Last pay day at the creameries in Humboldt county gave to the producers the following prices: Central 34 and 29 cents; Capitol 29½; Eel River 28½; Grizly Bluff 28½; Pioneer 28.

The state engineer declares that much of the flooding along the Feather river has been caused by deposit of silt from the gold dredgers in the vicinity of Oroville. The damage has been immense.

The apple industry of Humboldt county, especially along the Eel river valley has developed most satisfactorily. One estimate maintains that in the Eel river valley alone there is 250,000 acres suitable for apples.

Orchards which have been planted on the "rock pile" or refuse which is left after dredger mining on lands near Oroville have shown remarakble productiveness and have surprised all those who have observed them.

Central California

Bartlett pears in the Santa Clara valley promise large crops.

Tulare county orange trees are blooming later than usual.

Stanislaus and Merced counties now have a County Farmers Union.

Raisin Day publicity has given impetus to sales of raisin producing properties.

500 fruit growers of San Jose have organized a local of the Farmers Educational Co-Operative Union.

Tulare county is forwarding a large quantity of processed fruit for the exhibit at the A.-Y.-P. Exposition.

No material advance in price is noted in the prune market, but it is thought a slightly better tone prevails.

The Coast Creamery at Fresno has been taken over by the California Cream and Butter Co. of Los Angeles.

The Kern county creamery has placed an order for a motor truck to be used in the 50-mile route of gathering milk.

Hay buyers over the valley seem to be cautious and a feeling of uncertainty seems to prevail as to price of this season's hay.

Stockton is making experiments in rice culture. One farmer has a couple of acres planted within two miles of that city.

The citizens of San Jose expect to entertain the officers of the Japanese cruisers by giving them a trip through the prune orchards.

Tulare county reports, peach crop will be heavy, apricot light, or at least not up to normal, and prunes an unsually light crop.

Reports generally over the valley indicate that the rain yield will be lighter than usual, but that the hay production will be a bumper crop.

50,000 of the little recipe folders put out by the Rasin Committee were shipped to Chicago and distributed through the retail grocers of that city.

A large ranch near King City, Monterey county, has purchased a large number of race horses from the defunct Emerysville race track and will enter extensively into horse breeding at King City.

Tulare county citrus groves infested with the thrips are receiving an inspection from the hands of an expert from the Bureau of Entomology. No suggestion has yet been made as to the possible control.

The recent organizations of the prune growers is proceeding with details of working out scheme for marketing next season's crop. A commission of five is working along the line of forming district associations.

Six post cards were received by the Raisin Committee at Fresno from San Francisco stating that the writers would not eat raisins on Raisin Day because of the fact that Fresno had "gone dry" at the recent saloon election.

At the recent meeting held at Turlock for the purpose of forming a district organization of the union made up of Stanislaus and Merced county locals, a large attendance was given and questions of marketing everything from raisins to watermelons were discussed.

Southern California

Shipment of Valencia oranges has already begun, earlier than usual.

The Yorba Reservoir in Orange county has water of a depth of 40 feet.

Thermal, Riverside county, is shipping car load lots of onions to Tacoma, Wash.

A new vegetable shipping association on a co-operative basis is soon to be formed.

The Brawley string bean growers have found string beans a profitable crop this season.

Shipments of Imperial hogs will begin about June 1st. The Valley will market about 50,000 head.

It is now thought that a greater part of the cantaloupe output of Imperial Valley will be shipped in July.

The Palo Verde Valley has already cut a splendid hay crop which shows some of the possibilities of that new section.

Riverside recently struck highwater mark in shipment of oranges sending, in one week, an average of 52 cars per day.

It is estimated that in Southern California there are 25,000 acres of orange trees planted which are not yet in bearing.

The citizens of San Jacinto recently held a mass meeting to discuss means of bringing a beet sugar factory to that section.

The Directors of the Richland Walnut Growers Associations have appointed brokers to handle its crop for the coming season.

Improvements along the Santa Anna river conducted by the Santa Anna River Development Co., it is estimated will cost about $200,000.

Irrigators near Olive, Orange county, have recently installed a reservoir which cost $12,000. It will be a great aid in the control of irrigation.

Oranges are still growing forward in large quantities, usually about 200 cars per day. The price is not discouraging, but hardly up to the desire of the growers.

Under the management of the walnut association the marketing of walnuts has become more profitable. The price has advanced from 9 cents which it was a few years ago, to 10, 11 and last year to 12½ cents.

The recent withdrawal from entry by the Government of 860,000 acres of irrigable land in Riverside and Imperial counties gives color to the report than the high line canal will soon be constructed from Laguna dam.

The acreage in cantaloupes has shrunk considerably from the five or six thousand acres estimated at early planting time. There are now only about three thousand acres and these are bearing lighter crops than anticipated. The reduction in acreage is due to a poor stand, caused by cool weather and winds.

The only native palms grown in California grow near Palm Springs in Riverside county and many of them have been destroyed by the curious setting fire to the dead leaves which hung about the trunk. The burning is also done by the Indians on death of a member of the tribe when the fire is set presumably to frighten away evil spirits.

The Coast

Alaska is buying heavily on Seattle, Wash, hay market

The annual horse show at Dayton, Wash., was held April 24.

Fur farming is becoming a great industry in Western Canada.

The Roosevelt dam in Arizona has reached an altitude of 132 feet.

Much of the Willamette valley wool was sold at 22 cents for best grade.

17th National Irrigation Congress will be held in Spokane, Wash., Aug. 19th.

Dispatch from Spokane, Wash., says the recent rain was worth millions.

Yakima valley, Wash., reports an exceptionally light peach crop owing to sever winter weather.

Fruit inspectors in Oregon are making a more strenuous enforcement of fruit tree inspection laws.

F. H. Newell, director of the Reclamation Service, is inspecting the government work near Phoenix, Ariz.

Peach growers in the Rogue River valley are pleased that the hard winter freezes did no injury to the peach crop.

Rain visited sections of Pullman, Washington, about the first of the month and was of great benefit to the crops.

The weather for the past few weeks has been exceptionally favorable to the winter wheat crop at Colfax, Wash.

Vancouver, Wash., health inspectors have been after the dairies and a thorough cleaning up has been demanded.

Prospects for the fruit crop at Walla Walla, Wash., are excellent. Extensive spraying has been given to all apple orchards.

Lewiston, Idaho, will market fully a million pounds of wool and at a price it is expected not far from 20 cents.

A carload of Los Angeles strawberries recently sold in Seattle at about $2.25 a crate. It was reported as of exceptionally fine quality.

The appropriation allowed by the state legislature at Washington for its state college was cut $100,000 short of the estimate of the regents.

Over 2,000,000 pounds of this spring's clip of Oregon wool has already been sold or contracted for. Some contracts have also been made for the next clip.

The Spokane County Farmers Union recently met at Medical Lake, Wash., and appointed a committee to look up the matter of binding twine, and grain bags

The Colonization Board of Italy is in correspondence with the Board of Trade of Phoenix, Ariz., to secure information as to the desirability of lands in that territory.

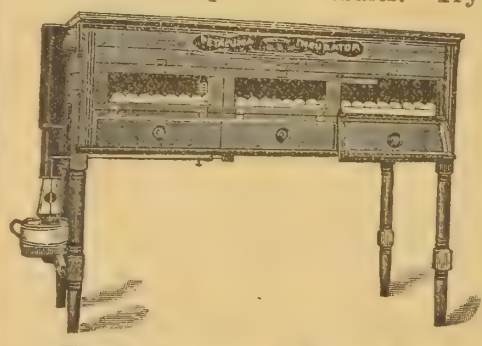
Prune trees of Clark county, Wash., have been troubled with practically all of the blossoms dropping. The matter is being investigated by experts from the State University.

A serious spread of tuberculosis among fowls in Oregon is reported. The poultry men are greatly concerned and the State Board of Health is taking a hand in the effort to control it.

Don't Forget Quality

MIDLAND Poultry Food

Is based on ***quality*** and it is quality in Poultry Food that produces eggs. ***Cheap filler*** and ***cheap grain*** will ***not*** make eggs. ***Midland Poultry Food*** contains only the ***choicest*** cereals and animal food the market affords. You ***can't*** afford to try and be successful and not get results. ***Midland Poultry Food*** will produce results. Try it and see. $1.95 per sack



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Are still here, after others are gone. ***The Standard of the World Machine.*** Winners of ***more prizes*** awarded by ***World's Fair Judges*** than any other make.

Remember, we make a hot water machine. One of the ***best hot water machines*** on the market.

Send for our Illustrated Catalogue.

Petaluma Incubator Company

Petaluma, California

Our General Agents for Incubators and Brooders and Midland Poultry Food:
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Aggeler & Musser Seed Co., 113-115 N. Main St., Los Angeles
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When the chicks are hatched don't feed them anything for 24 hours, then feed them the best dry Chick Feed you can get. We say that is

West Coast Chick Feed

SAMUEL R. KELLAM, former president of the L. A. Co. Poultry Association, says: "West Coast Chick Feed is the best feed for young chicks I have ever used. I have given this feed a thorough test, and have always found that it produced fine, large, healthy chicks."

MRS. A. BASLEY, the celebrated poultry authority, says. "I want some more of your West Coast Chick Feed, for it is excellent. It is purer, cleaner and appears better balanced than other feed I had been using, and to tell the truth, I have been experimenting, feeding both together, and they always eat yours in preference."

Ask your neighbors, for there is more of "West Coast" sold in Southern California than all other kinds put together. If not sold by your dealer send us $3.50 and we will send a 100 lb. sack, freight prepaid within 300 miles.

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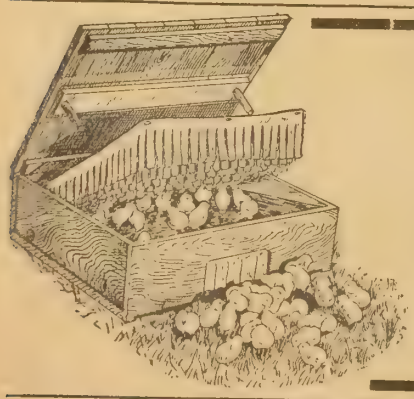
705-709 So. Griffin Avenue, Los Angeles, Cal.



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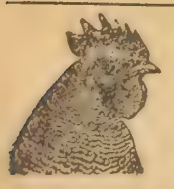


Starbuck & Son's Heavy Laying Barred Plymouth Rocks

We now unhesitatingly make the proud boast of the best laying strain on the coast, if not in the world. We will publish prices later.

Do you want to hear about our beautiful prize-winning Buff Orpingtons and Silver Wyandottes. We have something to crow about.

Wm. Starbuck & Son, Fullerton, Cal.

Stanislaus county is contemplating improvements of water system from the Hetch Hetchy valley.

The ostrich farm heretofore located near San Jose is to be transferred to Sacramento.

Profit in the Poultry Yard

By Mrs. Frank Metcalf

We solicit short articles of a practical nature from the fancier and utility breeder, giving their experience with poultry. All inquiries pertaining to feed, management, disease and its prevention will be answered through these columns.

DETRIMENTAL CHANGES IN EGGS.

Dirty Eggs.

Dirty eggs are grouped roughly in three classes—(a) "plain dirties," those to which soil or dung adheres; (b) stained eggs, those soiled by contact with damp straw or other material which discolors the shell (plain dirties when washed usually show this appearance); (c) smeared eggs, those covered with the contents of broken eggs.

For the first two classes the farmer is to blame. The third class originates all along the route from nest to consumer. The percentage of dirty eggs varies with the season and weather conditions, being noticeably increased during the rainy weather. About 5 per cent of all eggs are culled out as "dirty," and these are sold at a loss of at least 20 per cent. This makes a financial loss of 1 per cent of the total value of the nation's egg crop.

There is another loss caused by dirty eggs which is fully as serious. It is the loss due to the fact that in a lot of eggs so handled as to produce 5 per cent of "dirties," the remainder of the lot will show enough spotted and tainted eggs to give the whole lot an inferior appearance. The amount of depreciation from this is difficult to estimate, but this is undoubtedly as great as the direct loss on those culled out.

Broken Eggs.

The common trade name for cracked eggs is "checks." "Blind checks" are those in which the break in the shell is not readily observable. These are detected with the aid of the candle or by clicking the eggs together. "Dents" are checks in which the egg shell is pushed in without rupturing the membrane. "Leakers" have lost part of the contents and are not only a loss themselves, but produce smeared eggs.

The loss from mechanical injury varies considerably with the amount of handling in the process of marketing. A western produce house collecting from grocers by local freight will record from 4 to 7 per cent of checks. These same eggs in further handling will have an additional checking of 1 to 3 per cent. Eight per cent. of the eggs from hen to market is probably a fair estimate for broken eggs. The depreciation of such eggs is greater than that of dirties, being about 25 per cent. This gives a financial loss due to checks of 2 per cent.

ROUP.

How discouraging it is when our young chicks are attacked by the gapes, lice, bowel trouble, etc., any one of which will cause great loss. How much more discouraging it is to have the fowls grown nearly or quite to maturity and have a roup epidemic. This disease usually shows itself in the fall or early winter and unless vigorous efforts are made it is liable to remain all winter.

The loss of a matured fowl is more than the loss of many little fellows and we must avoid the disease if possible.

It is entirely unnecessary to have expensive, air tight buildings in which to keep the fowls confined most of the winter months, just good, dry, comfortable quarters with plenty of fresh air and no draughts are all that is necessary.

Lice, filth of all kinds and damp, frosty walls are not conducive to good health in poultry.

As an ounce of prevention is worth several cures let us see that we have no unsanitary conditions in our yards and buildings.

If a fowl gets the roup do not wait for Nature to take its course and the whole flock get it, but head off the outbreak by disposing at once of the sick bird. Better kill and burn them, I think.

No matter how valuable the fowl just remember that value is gone as a breeder after a severe attack of roup.

A good many years ago a dear old friend said at the first appearance of cold put a little kerosene oil in the drinking water, make a little extra effort to keep the quarters clean and well ventilated and you'll never have the roup. I believe she was right.—Poultry Tribune.

TIMELY NOTES.

Cleanliness is an enemy of disease.

Better have the poultry a little hungry than overfat.

Poultry soon become accustomed to regular hours of feeding.

Charred corn occasionally makes good feed.

The greatest objection to using sloppy food is that it often makes conditions which invite disease.

The poultry business won't run itself any more than other business. No gains without pains.

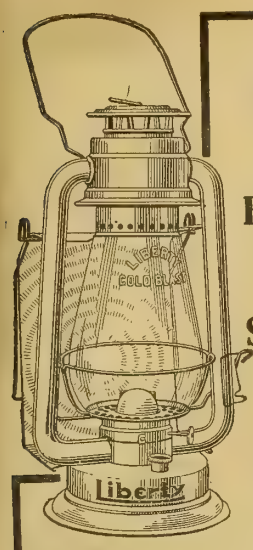
There's a lot yet to know about poultry. It's surprising the small amount of real practical, dependable knowledge at the disposal of the beginner. The poultry business has had little benefit of governmental and scientific research. We'd all better think about how little we know than to spend so much time in crowing about what we do know.

Let all the hens run together after the conclusion of the breeding season, and separate the males. This not only simplifies the labor but gives both sexes a beneficial rest. What few eggs they lay will be all the better for table purposes and will keep better.

Be sure and plan to grow some sunflowers in the poultry runs this summer. They make good shade and the seeds will be especially valuable to feed to the hens during the molting period.

If it is worth while to set a hen at all, it is worth while to set her well. Give her a good nest, secure from disturbance by other hens, feed her regularly each morning or evening, and nine times in ten a very good hatch will result.

To prevent small runs from becoming foul and unhealthful, divide them and keep something growing in one part all the time, confining the fowls to the other part, and changing around every few weeks.



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A special wick-regulating device prevents a flame with "horns" on the sides, it can be turned up higher than others. Air supplied in just the right proportion, it gives a brighter, whiter, stronger light. Burns longer with less oil than others.

Prices from 60c. to $3.50.

Don't be persuaded to buy the "just as good" kinds. Buy the best —LIBERTY LANTERNS.

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High protein MEAT SCRAP.
Just what the name implies.

A Meat Scrap High in Protein

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Toulouse ***Embden***

Prize winning stock never beaten at any poultry show.

$1.50 Per Setting

Send your order at once for the best stock in the west.

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Poultry Supplies

Write for free Catalogue.

Germain Seed & Plant Co.

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COULSON'S POULTRY FOODS

MADE IN PETALUMA

GUARANTEED

SOLD EVERYWHERE

SULLIVANS' "Commonwealth Strain" **Buff Orpingtons**

We win more prizes on Pacific Coast at leading shows than ALL COMPETITORS COMBINED. This season; 40 regular prize ribbons, 15 SPECIAL ribbons, and 9 SILVER CUPS. Free Catalogue, stock and eggs for sale. Eggs $2.00 and up. Stock, $2.50 and up.

Mr. & Mrs. W. S. Sullivan
GARDEN VALLEY POULTRY YARDS
5 minutes from depot. Agnew, Cal.
State V. P. Nat. S. C. B. O. Club for Cal.

When writing advertisers, mention Cultivator.

Feeding fowls in summer requires careful judgment. Old fowls and chicks should not be allowed to run together. The former will get too fat and the youngsters starve half of the time. See that all ages get plenty of green stuff.

Don't forget about the lice. There may be thousands of them in your poultry house or on your birds before you find one. Lice do not particularly try to "show themselves" and usually are hard to find. But it is ten to one that they are there just the same, and don't be too sure your fowls are free from the pests. Look for them every week or two and take measures to prevent them from getting started. Lice killers are plentiful and cheap and they save a lot of money and dissatisfaction by preventing losses.

Lazy men make poor poultrymen. The poultry business will not "run itself."

Crowding and bad ventilation are the source of many losses in flocks that are otherwise fairly well managed.

Heavy dews on the grass will wet young chicks and turks just the same as showers. Remember this before you let the broods out in the morning.

The best way to kill off lice is to prevent them from getting a start. It is much easier to keep them in check than to give them a chance and then fight them after they are swarming over the whole house and all the fowls.—Poultry Tribune.

THE CHAFF PILE.

Keep the chicken house clean, the nests clean, clean the roosts, clean the floor, clean the troughs and pans for feed and water, clean the yards. Clean everything.

The poultry house may be built of almost any material. The question of what to build with is not so important as how to build. Whatever the material, the house must be warm, well ventilated, and must have plenty of light.

Success in poultry raising, as in any other business, depends largely on the attention given to details.

Inbreeding is the source of much trouble in many poultry yards.

Scaly leg spreads rapidly, particularly when the fowls are kept in close quarters, and the wise poultryman will lose no time in administering treatment to the first fowl that shows any signs of this disease.

Carelessness and inattention may result in poor hatches from good eggs of strong and healthy stock.

Charcoal is of great value in the poultry yard as a purifier and tonic for the flock.

Hens cannot be expected to produce eggs all the time. They must take a rest some time, although the hen that prolongs her vacation should be disposed of.

Changing from one breed of fowls to another may not be conducive to success. The poultry breeder that cannot make good with one breed would not be likely to do well with another.

Most hens on the average farm have egg records somewhere around the 100 mark. The right kind of hens ought to be producing 150 or more.—The Ranch.

White shelled eggs hatch easier than the brown shelled, in the incubator, it is claimed.

If the hen does not lay, it is in some way your fault, for it is her business to lay eggs.

Coulson's POULTRY FOODS

Special Dry Chick Food

Makes Them Grow

Throw it out in the Litter and Make them Work

COULSON'S SPECIAL DRY CHICK FOOD, during the five years it has been on the market has justly earned for itself its great reputation as a life-saver for little chicks by its special adaptation to their needs.

THE UTMOST CARE is observed in the selection of each of the dozen or more articles composing this unequaled feed; tender seeds, cracked grains blown free from dust, steel-cut oats, tiny pieces of dried meat and bone, willow and pure bone charcoal, are combined with other very necessary ingredients; every article being selected with special reference to its quality, strength and desirability for the needs of the young chick.

FOR YOU TO BUY the many different articles composing Coulson's Special Dry Chick Food is quite impracticable; you could not be certain as to their quality for one thing, and the high cost of certain of them when purchased in small lots might lead to their being left out to the detriment of the chick.

TO MAINTAIN the present high reputation of COULSON'S SPECIAL DRY CHICK FOOD, nothing is left undone to make it absolutely the best feed that can be made for the little chicks.

COULSON'S SPECIAL DRY CHICK FOOD can be fed exclusively to your little chicks for the first six weeks, at a cost of about four cents (4c) each; and what is of still greater importance, it will do all that can be done in the way of feed, to bring them through that critical period of their lives in full health and vigor.

TO RAISE EVERY CHICK you hatch; to have fine, large, healthy chicks; to have chicks that will stand up and crow when eight weeks old; to raise chicks that you will be proud of, FEED COULSON'S SPECIAL DRY CHICK FOOD, THE LIFE-SAVER. Write us for free samples and prices.

Write Us for Free Samples and Prices

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Coulson Poultry and Stock Food Company ***Petaluma, California***

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Kill Insects

ON PLANTS ON POULTRY

With

Devils

Dust

Devils Dust is guaranteed to Kill all kinds of vermin on poultry and insects on plant life.

1 lb trial package 40c postpaid.

HENRY ALBERS CO., 534 SOUTH MAIN LOS ANGELES

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EGGS FOR HATCHING—WHITE LEGHORNS—MITCHELL STRAIN

Large birds, heavy layers, bred for highest utility only. Order book now open for season 1909

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"Success" Fireless Brooders

Will raise every chick, send today for free circular; tells about this wonderful brooder.

No Lamp, No Smoke, No Odor, No Danger of Fire

We pay freight. I sell on trial, if not satisfied I will refund you every cent. Order now. I can ship the day I get your order

E. E. McClanahan
112 E. 8th, Los Angeles

50 Chick $2.50
150 Chick $5.00
We Pay Freight

Highest Prices Guaranteed

Large young roosters selling as high as $11.00 a dozen. Large hens selling as high as $9.00 a dozen. All kinds of Poultry, Eggs, Butter and Cheese always wanted. Mark and consign all shipments of produce to

The Poultrymen's Union of Cal.
(ESTABLISHED 1876)
Oakland, California
When writing us mention this paper.

Excelsior Dry Chick Food

If You Are Not Satisfied Try Excelsior

If Your Dealer Don't Keep It Write Us

A balanced ration for the baby chicks. We have been manufacturing Excelsior Chick Food for years, and it is made to meet the conditions of California. Those who feed Excelsior have no trouble raising strong, healthy chicks.

We also make ***Excelsior Egg Food*** and Excelsior Scratch Food; nothing better. For particulars write

Excelsior Cereal Milling Co.
242 Central Ave., Los Angeles, Cal.

Cypher's Model Incubator Bargains

Have a few new 250-egg Cypher's Model Incubators that we must close out this season aud will sell the

$34.00 250-Egg for $27.00

At this price the stock will not last long.

Henry Albers Co., 534 *S. Main Street, Los Angeles*

When You Pay $3 Sack for Wheat You Want Eggs

So Get a Good Heavy Laying Strain

My **WHITE WYANDOTTES** (scientifically mated) are fine layers. Try a setting for $1.50.

My **BUFF COCHINS** are great Winter layers too. Big fowls take little exercise, which takes less feed and small range. Cuckoo Cochin Bantams, Hen Pigeons and Runt-Homer Crosses

HARRY McINTIRE **Box 1454, San Diego, Cal.**

Mrs. C. D. Hubbard's

White Wyandottes
Black Orpingtons and White Rocks
Write for Circular
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S. C. White Leghorns

(D. W. Young Strain)

Yearling hens. Eggs for hatching $5 per 100. ***Special*** —I have a pen of hens testing (Hogan System) 200 and over eggs per year, mated with a male that took 2nd. at L. A. that Mr. Hogan says is a wonder. Eggs from this mating $2.50 per 13.

The Show Poultry Farm
Route One ***Santa Barbara, California***

When writing advertisers, mention Cultivator.

POULTRY QUERIES.

Beginner's Troubles.

Am hatching White Leghorn chicks with hens. While hens are sitting I dust them including nests and eggs with dry sulphur every four or five days. When chicks hatch I put a little sulphur and lard on head and under wings of each and also hens. Place them in a coop which has been thoroughly saturated with coal oil. At the end of about two days, I place before them plenty of pure water, grit and I. X. L. chick food. At the end of a week I allow them to run with hen in orange grove during warm part of day, closing them up at night from drafts. I feed nothing but chick food mentioned until about three weeks old, when I feed wheat once a day in connection with chick food. Take pains to keep coops clean at all times. Have also rubbed hen thoroughly with sulphur and lard, and yet I occasionally discover a louse on her.

The chicks come out every morning with their eyes stuck together—not all, but a large proportion. I wash their eyes with sweet cream and afterward oil with vaseline, which helps them, yet others are continually affected. Some of the strongest chicks, too. What causes it and how shall I prevent it? Also what shall I do to eradicate the lice? I have lost only one chick so far, but several appear droopy and seem to have bowel trouble.—C.Y.

I wonder that the sulphur and lard did not kill the little fellows out right, as it is too strong for them, and the lard is fully as effective without it. Get some fresh, now mind F-R-E-S-H Persian insect powder, and dust with that instead, while the chicks are small. I used to stand over my druggist and see him grind it myself to be sure it was fresh. I was like the lady who found an honest butcher, and stood by him—while he was weighing her meat. Grease and hot sun seem to hurt chicks, if applied too freely, but I am afraid your coop is too close at night, is the reason for their eyes being stuck up so mornings. Still, lots of children have this same trouble and out grow it, and I presume your chicks will. Give the hen a good bath in a solution of carbolic acid water, a teaspoon to a pint of water, and if you wet every single feather to the skin it will kill all the lice on her and a weaker solution won't hurt the chicks a bit if done in the heat of the day, or else use the tobacco tea as advised for Mrs. W. B. not for chicks, though only mature stock, this.

The louse killers advertised in the columns of Cultivator to be put on boards under the chicks at night, are often entirely effective also. And so handy to use, the fumes arising from them being sufficient to clear the lice out for the time.

The bowel trouble may be helped by feeding raw eggs. Just mix the egg stiff with wheat bran, and the chicks will eat it greedily, and it corrects the bowel trouble as few things do.

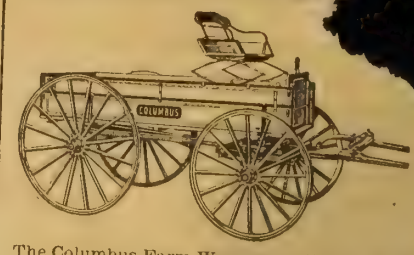
I would suggest a little meat fresh from the butcher and ground up in the family mill twice a week. My butcher gives me a nice piece for five cents and how the babies relish it.

Onion tops ground up the same way are excellent and keep lice down if fed every day, as lice do not like the flavor of onions in their food. I think you have been very thorough in your work for a beginner, and hope you may succeed, as you seem to deserve. —Mrs. F. M.

Feed often and feed but little at a time, is said to be a good rule for feeding young chicks.

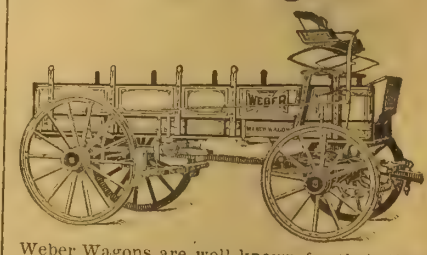
Don't place dirty eggs in the incubator. Filth generates gases that ruin many of the fertile eggs.

Columbus Farm Wa...



The Columbus Farm Wagons run light. A fact acknowledged by all users. Ask any farmer using one and convince yourself. Sold by leading dealers or direct by us.

Weber Wagons



Weber Wagons are well known for their light running qualities. Every farmer desires such wagons. THEY SAVE HIS TEAM. Write today for illustrated circular. Sold by leading dealers or direct by us.

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In large or small quantities, 33 kinds to select from. Write for free pamphlet "Eucalyptus Culture." It gives full directions for sowing the seed, raising the plants and planting out into the field, together with descriptions of all the leading species, giving their uses and the localities to which they are adapted. Sample packets 15c each, 2 for 25c, 4 for 50c, 9 for $1.00. Choice Flower, Garden, Tree and Palm Seeds, Roses, Flowering Plants etc. Catalogue mailed free upon application.

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Will Snip a Broom Handle

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Nurserymen and growers of fine trees use them in preference to all other shears—they will cut clean the thickest twigs or the most delicate tendrils without tearing. Wiss dealers will replace free of charge any shears returned defective or unsatisfactory.

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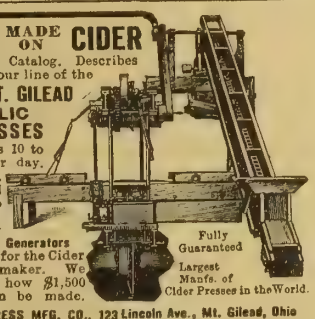

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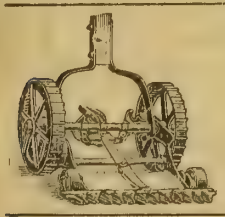

THE CLIPPER

Will cut tall grass and weeds and do all the trimming along the walks and drives. Your dealer should have them—if he has not drop us a line and we will send circulars and prices.

Clipper Lawn Mower
Dixon, Illinois.

Seeds & Plants

Write for free Catalogue.

Germain Seed & Plant Co.
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Paper Berry Baskets

Better and cheaper than wood.
Send for samples and prices to

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Mfr. of Egg Cases and Fillers, Paper Boxes, Etc.

Improved Casaba Seed

I am the originator of this superb melon. It is reasonable to suppose I have the best seed. The melon is the best. The seed is the best. Price $2.50 per pound, or 25c an ounce.

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Records and Supplies, $10.00 orders delivered at your nearest railroad station upon receipt of full retail price. Write for catalog.

Peter Bacigalupi & Sons, 941 Market St. San Francisco

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Summer Pruning.

I have a number of sugar prune trees heavily set with fruit which were not pruned last fall. Will it injure the tree or fruit to prune at this time? What is the meaning of "summer pruning" and in which month is it done? Is it done when the fruit is on the tree or after harvest? Is lime and blue stone a fertilizer and will it be wise to apply it to the roots of trees and if so at what time should it be applied?—J. H. S., San Jose.

Summer pruning is usually done after the fruit is off the tree. More particularly is this the case with apricots for as soon as the fruit is off, early in July, they are sometimes given a heavy cutting back then thoroughly irrigated and this sends out a vast quantity of new growth with large healthy buds which give promise of a big crop the following year. Other deciduous trees are sometimes treated in the same way although not to the same extent that we treat the apricot. We anticipate, however, that you refer to pruning-shear thinning of your fruit. That is done where trees are heavily loaded and will break with the excess of fruit by severe cutting back of the longer limbs. If, however, the trees have been properly pruned and have no exceedingly long limbs which will pull the trees out of shape under the weight of the fruit, then the best thinning is done by thinning and reducing the number of fruits to what the tree will bear and give a large size. This should be done as soon as you are reasonably certain that the natural dropping has ceased and in any case before the pits begin to harden. We do not see any practical value in lime and blue stone as a fetilizer. Most California soils are supplied with plenty of lime although it has, at times, shown to be beneficial. Blue stone possesses nothing which would be of any great value to the trees.

Fly Repellants.

Flies worry our cow very much. Can you give some method of abating the nuisance?—R. H., Bakersfield.

As these queries will doubtless increase in number we give a somewhat extended answer. Give the cow a dark shed in which to run, if possible. This may be so arranged with burlap hung down well over the opening and the cow will be at liberty to go and come, yet the darkness prevents flies from annoying the animal all the time. As a preventive, it is always wise to keep manure piles well cleaned up. Sprays which are sold by many dealers are usually to be commended. However, for those who wish to make their spray the following, which appeared in the Cultivator last June, is given. If any of our subscribers tried it we would be pleased to hear as to their success.

Fish oil 100 parts, oil of tar 50 parts, crude carbolic acid one part.

This formula is recommended by the South Dakota Experiment Station which reports it most effective. It is sprayed on to the animals by means of a small hand spray pump, one application being sufficient for two days. The longer between spraying the more thoroughly the animals must be gone over. The odor of the preparation does not taint the milk, but it must be removed from the barn at once after milking, which should be done whether a spray is used or not.

Aphis.

How can I get rid of green lice on pea vines? What remedy can I use on rose bushes that have mildew, whitish in appearance, also a similar mildew that effects the growth of apple trees? Can you suggest method for overcoming depredations of deer in young orchard? We have been trying to get him in all sorts of ways but failed to get even a sight.—F. A. T., Soquel.

Green lice or aphis may be controled or rather somewhat subdued by using kerosene emulsion or whale oil soap. Sulphur scattered over the rose bushes will be effective especially when warm weather comes and causes fumes to rise from the sulphur. Spraying with Bordeaux mixture earlier in the season will prevent its spread to a great extent and could also be used to advantage on the apple. The deer problem surely is a hard one as we have never heard of its being a factor with orchardists in this state. We imagine our subscriber could have plenty of help to come and "lay" for the deer if there is any reasonable probability of getting a shot at him. Personally, we would prefer to capture and make a pet of him.

Red Ants.

Is there any remedy for red ants on lemon and orange trees also green lice on rose bushes?—J. J., Kerman.

Red ants may be reached with any of the kerosene or whale oil soap sprays though, perhaps, the best treatment is to find the hole where the ant makes its home and kill the colony by using bisulphide of carbon. However, as a rule, we do not think you will find the ants have injured the trees. They always are in large quantities where black scale or aphis collect because both these pests which are injurious to trees exude a large quantity of honey dew which is attractive to the ants. The aphis and scale may be reached with a spray of soap or kerosene.

Garlic and Other Vegetables.

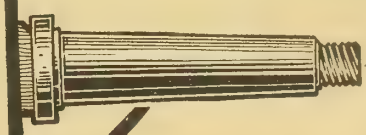
I would like to ask directions as to the culture of garlic, the time to plant seeds or sets and time of the year to plant to get the highest prices. I note the present market price is 12½ cents. Would also appreciate list of other vegetables which may be planted from now on. Have five acres of orange land and I hope income in vegetables will assist in paying for it. I wish to grow for Los Angeles market.—J. E. M., Ontario.

Garlic is a vegetable mostly used by foreigners and one wants to be pretty sure of a market before growing it in any considerable quantity. It is of the easiest culture, growing freely on any soil suitable for onions, but onions require very rich soil to produce a profitable crop. Garlic is propagated by divisions of the bulbs called "cloves or "sets." They should be planted early in the Spring—which means February and March here—in rows one foot apart and four to six

One horse is as good as two when

MICA AXLE GREASE

Coats the Spindle



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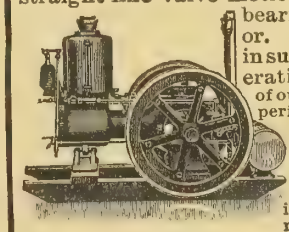

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Seven sizes: 1½ to 16 H.P. Stationary and portable.

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Rhubarb and berry specialist

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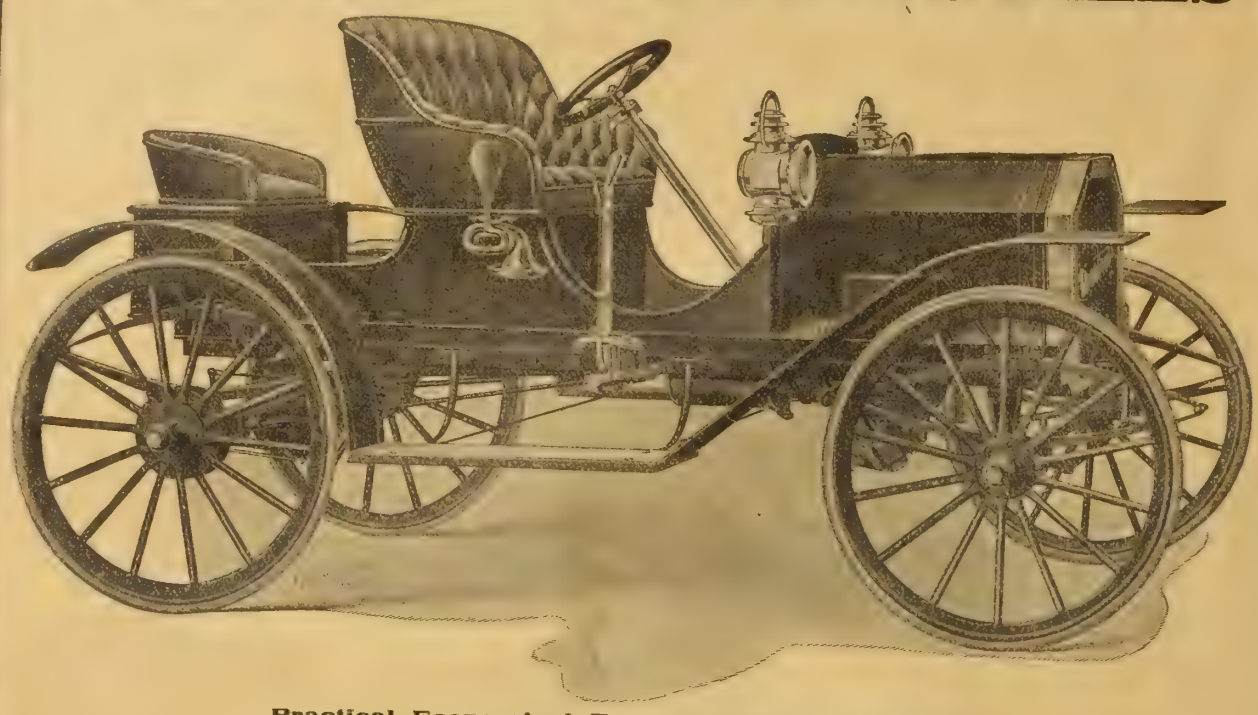

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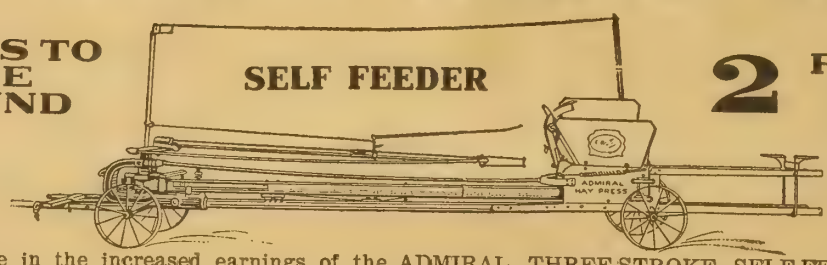

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2½ Tons per day for one week, 15 tons at $1.50 net.....$ 22.50
One month's earnings over the other press (26 days)..... 97.50
On an estimate of five months' work out of the year..... 487.50

The above gain with the ADMIRAL more than pays for the press.

New Century Hay Presses, Specially Built, Season of 1909. **$250.** All kinds of Wagons, Buggies, Implements, Tools, etc. Catalogues upon request.

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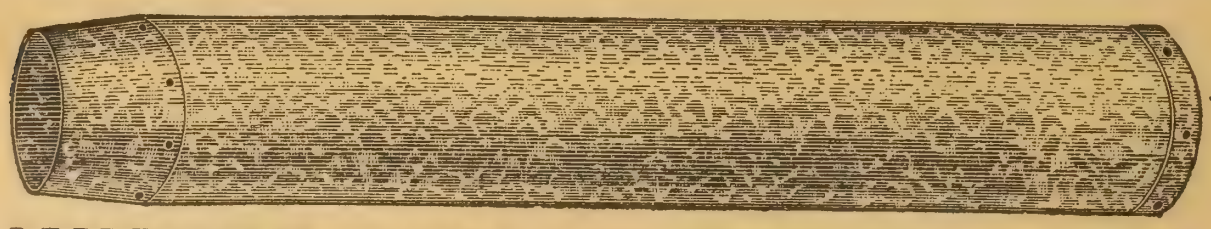

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SAVES WATER, GRADING AND TIME

The **only** way to **Irrigate Alfalfa. Cheaper** than **Flumes.** This is only **one** of our **specialties. We make Riveted Water Pipe** in lengths of **ten feet** from **single sheets.** Let us **prove** to you that we make **Pipe** and **Tanks right.** WRITE FOR CATALOGUE.

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Live Oaks Farm

Frank A. Meacham, Proprietor.

Importer and breeder of RED POLLED CATTLE, SHROPSHIRE SHEEP, RAMBOUILLET SHEEP, HORNLESS AMERICAN MERINO SHEEP. Both sexes for sale. Take electric car at Petaluma or Santa Rosa for LIVE OAKS STATION. Address all mail to

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New barley and alfalfa hay is being shipped from all sections of the Sacramento valley.

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For the Pacific Coast

We are the exclusive agents for the **A. I. Root Co., Medina, Ohio.** Our hives are manufactured from selected California Sugar Pine. Branch houses at Los Angeles and Elk Grove, Cal. Write for Catalog. We also manufacture orange, fruit and packing shook, drying trays, etc. Beeswax wanted.

Madary's Planing Mill,

Fresno, California

inches in the rows. The crop matures in July and August, when it is harvested like the onion, except that it is always sold in the dry state. I would consider it now too late for a successful crop for this season and especially when attempted by one having but little experience. The foreign population around the querist's own home would afford, in my judgment, a better market than Los Angeles, especially when attempted by one having but little experience. In my opinion it would be far more profitable for the querist to make his plans to grow vegetables for his neighborhood than to think of growing for the Los Angeles market. It is hard enough for the experienced grower, well established, to hold his own in the Los Angeles market. In this querist's case the freights and commissions would absorb all profit. Let him visit the gardeners who supply his locality and carefully observe how they do, and I think by careful honest methods he can build up a retail custom in his own neighborhood that will be much more profitable than to attempt to ship to Los Angeles. If he has learned a great deal in the seven weeks he has been in California what will he know after he has been here a year? By this I mean that it may be wise to go a little slow until one learns more of the conditions that prevail in a climate so radically different from Boston. The season is now past for the planting of many crops, but there is yet time for enough to keep one busy: Sweet corn, tomatoes, melons, sweet potatoes, beans, and all other vegetables that would be planted in the querist's old home in May can yet be grown, and some of them, as sweet corn and beans, can be planted in succession of intervals of three or four weeks apart. Proceed with caution until you have learned more of climatic conditions. Grow for your home locality and thereby get the retail price. Visit local growers and observe their methods and do not undertake too much until you have learned more of local conditions.—Q. A. L.

Worms Climbing Trees.

I think I read in the Cultivator sometime ago of an arrangement used around the trunk of trees and shrubs that will prevent worms, etc., crawling up the trunk and destroying the tree. If it will prevent cut worms or army worms doing so much damage as they are doing to trees and shrubs just now, your recommendation will be gratefully received.—J. J. F., San Diego.

There has been advertised a "tree tanglefoot" which is said to be exceptionally satisfactory as a preventive of insects climbing trees. It is smeared in a band around the tree and prevents practically all insects from climbing up.

Aphis.

I am sending leaves infested with small insects. They are quite thickly scattered through the orange trees. What are they and are they injurious? They are very thick on the young sucker growth.—Mrs. F., Highland.

The insects were duly received and are the plant louse or aphis which has been exceptionally persistent this entire season in all parts of California. They are easily killed, but reproduce so rapidly that the next generation populates the growth again. They secure their living from the sap which they extract from the young, tender growth of plants and trees. Whale oil soap or kerosene emulsion will kill them.

Fly Repellant.

Please give me formula for spray for cow to prevent flies attacking her. —Santa Cruz.

See answer to a similar query on preceding page.

Essex Hogs.

Where can I secure thoroughbred Essex hogs?—L. F. W., Monrovia.

The Cultivator has no information as to Essex hogs and asks for communication from subscribers.

Planting Peanuts.

Please tell me how to plant and care for peanuts.—K. K., Thermal.

See Cultivator of April 23, 1908.

Classified Liners

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ALFALFA—FRUIT—LANDS

10—20—40—ACRE TRACTS

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YOU OWN THE WATER SYSTEM

$25 PER ACRE

first payment, balance of $50 payable in 1—2—3 years, the crops will do this and more.

WE PAY YOUR EXPENSES TO INVESTIGATE THIS

We also have exceptional bargains in

ORANGE LANDS IN THE PORTERVILLE SECTION

In 20 acre tracts or more at

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On terms to suit. Land that is rapidly advancing.

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FOR SALE—ORANGE SEED SELECTed from choice groves, can supply any quantity at reasonable prices. K. W. LATTIN, 20 West 4th St., Alhambra, Cal.

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BLUE ANDALUSIANS, NORTHERN strain. Best egg machines for interior of California and Arizona. Eggs, $1.50 and $2.00 per 14; $2.50 and $3.50 per 28; incubator lots. Inquire, L. A. WILSON, Winters, Cal.

3000 CHINESE PHEASANTS, ALSO eggs for sale. Splendidly illustrated book 25 cents, just published. DILLAWAY'S PHEASANTRIES, Everett, Washington.

MAMMOTH BRONZE TURKEYS — Eggs fifty cents each. None in West larger or finer marked. Laid by old hens. MRS. LAURA E. HARDING, Brawley, Cal.

FOR SALE—INDIAN RUNNER DUCKS, first class stock, great layers. Write for prices. Eggs for hatching, $1.00 per dozen, $5.00 per hundred. GEO. BAUM, Mountain View, Cal.

PRIZE - WINNING WHITE MINORCAS. Eggs for setting, $2 for 15; $3 for 30; $6 per hundred, f.o.b. express. C. S. LANE, Santa Barbara, Cal.

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FOR SALE—SOME RARE SNAPS IN gasoline engines from 2 to 80 H.P. in slightly used, also complete stock of new Union gasoline engines, as well as air compressors, tanks, pumps and other machinery. Write, phone or call for our prices. BAILIE & BRANDT CO., Agents Union Gasoline Engines, 943 N. Main St., Los Angeles, Cal.

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A BEE MAN WANTED—THE USUAL wages paid and board furnished. About 300 stands. Address immediately, Box 695, Wasco, Kern Co., Cal.

TREES.

FOR SALE—300 FIRST CLASS NAVEL orange trees, ½ to ¾ inches in diameter at $1.25 each and 1,000 Eureka lemon, ¾ to 1⅛ inches in diameter at $1.10 each, if taken soon. Balled and sacked at nursery. Shipping expenses paid by purchaser. SANTIAGO FROSTLESS NURSERY, Santa Ana, Cal. R. D. 1, Telephone Sunset, Orange 354.

FOR SALE—A NICE LOT OF 2 YEAR Late Valencia trees, 150 Washington Navels, 80 lemon trees. Must apply at once as they will be sold at once, being an extra lot of trees. RIMPAU BROS., Anaheim, Cal.

FOR SALE—1500 EUREKA LEMONS, 1 and 2 years old; Blue gums, Sugar gums, and Red gums; street and ornamental trees, etc. GEO. B. WARNER, Santa Ana, Cal.

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PURCHASE THROUGH US—WE ARE a Mail Order House. We furnish anything desired from a spool of cotton to an automobile. Send for catalog. COLUMBIA COMMERCIAL COMPANY, 204 East 9th St., Los Angeles, Cal.

SWEET POTATOES.

FOR SALE—YELLOW SWEET POtato plants. J. W. BROWN, Home Phone 643, Downey, Cal.

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with my Portable Billiard and Pool Tables. Send for Catalog and let me show you good, practical Tables at the price of toys. Used anywhere. No special room required. **C. RIDDERHOF**
Merchants Trust Bldg., Los Angeles

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FOR RANCH USE

Tents
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Corduroy and Khaki suits to measure for men and women.

The Wm H. HOEGEE CO. Inc.
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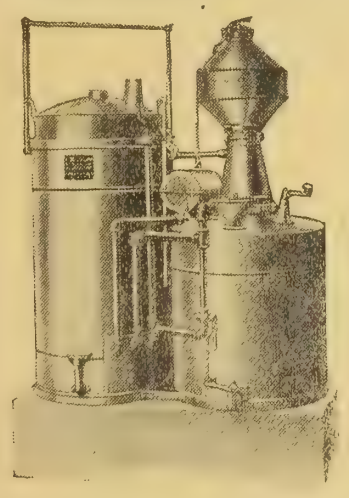
THE MODEL ACETYLENE GAS GENERATOR



Light Your Home With It

It is the **newest, most economical** and **safest,** being **accepted** by all Insurance Co's.

It's **new** feed mechanism **prevents** a waste of Carbide.

Send for a catalogue before you choose your generator and learn why and where the **Model** is **superior** and guarantees satisfaction.

An **exceptionally** large discount offered to salesman.

For further information address

J. M. Gillis
Box 573, - Stockton, California

Second Hand Irrigating Plants

Pipe, Pumps, Steam and Gasoline Engines. We have the largest A. I. stock of second hand machinery on this coast, and at the right prices. Tell us what you want and we will give you our best figures. Mention this paper.

Western Machinery Company
230 Main Street, San Francisco, Cal.

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Made from California Redwood or Selected Washington Douglas Yellow Fir

National Wood Pipe Co.

Machine Banded Stave Pipe **Continuous Stave Pipe**
LOS ANGELES OFFICE—404 Equitable Bank Bldg.
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SALT LAKE CITY OFFICE—Dooly Block.
PORTLAND, OREGON—210 Wells, Fargo Bldg.
Prices, specifications, hydraulic data and general information furnished upon request.

SECOND HAND PIPE

We will sell you pipe that can be used for any purpose. ***Satisfaction guaranteed*** or money returned. We handle all sizes of standard pipe and casing. Shipments made on same day as order is received. Price of pipe is low now. Write for our prices.

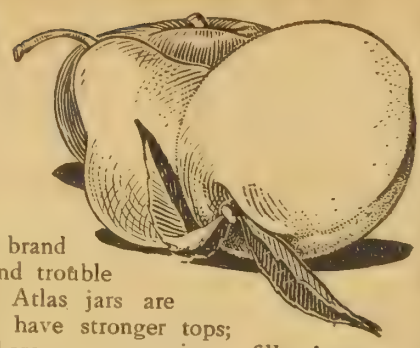
Pacific Pipe Company
S. W. Corner Howard and Main Streets, San Francisco, California

Mercer's Weed Process Foundation

If you would be successful with your bees use Mercer's Weed Process Foundation. Absolutely the best on the market. Send me your beeswax to make up.

H. J. Mercer, 948 East Second St., Los Angeles, Cal.
Dealer in All Kinds of Beekeepers' Supplies

The Best Jar For All Kinds Of Preserving



bears the name "Atlas." Use Atlas brand Jars and much of the uncertainty and trouble of preserving time will disappear. Atlas jars are better glass; have stronger tops; seal surer and are more *convenient* to *fill* and *empty* than any other name or make of jars. The

ATLAS
E-Z Seal Jar
(Lightning Trimmings)

is an especially good one. Machine-made and therefore perfectly smooth at the top—No danger to the hands and no particles of glass to fall inside when using the E-Z Seal Jar. It has a wide mouth and takes in large fruits without cutting or crushing them. The

ATLAS SPECIAL MASON

also has a wide mouth and is an equally good jar, but closes with a screw cap.

If your dealer cannot supply these jars, send $3, and we will express prepaid thirty (30) quart size ATLAS E-Z SEAL JARS to any town having an office of the Adams or U. S. Express Co., within the States of Pennsylvania, New Jersey, New York, Delaware, Maryland, Virginia, West Virginia, Ohio, Illinois, Indiana or Michigan, or we will quote delivery prices in other portions of the United States by freight or express.

A Book of Preserving Recipes
Sent free to every woman who sends us the name of her grocer, stating whether or not he sells Atlas Jars.

HAZEL-ATLAS GLASS CO., WHEELING, W. VA.

Professor David Starr Jordan
President of Leland Stanford University

The leading authority on fishes of the Pacific Coast, writes of the California Sardines, in "Fishery Industries of the United States," 1904, Page 567. "This Species is everywhere known as the Sardine or by the Italians as Sardinea. It is in fact almost identical with the sardine of Europe."

FOR SALE EVERYWHERE California Sardines THE GENUINE SARDINE

The Small Fish

Put up at various canneries on the Eastern Coast are not to be compared with the Genuine Sardines, caught along the Southern Coast of California.

Caught in Pacific Waters, along the Southern Coast of California. Noted for their choice quality. Very fat.

California Genuine Sardines

Put Up Under These Brands Only

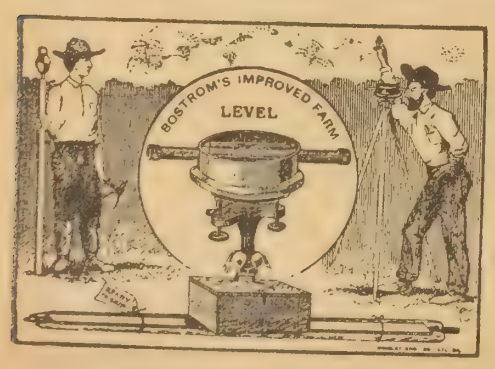
Gold Fish—Ravigote Style, Sunset—LeCroix Style, Senorita—Boneless, LaRouchelle, Mission, Sunset, Broiled Mackerel Style.

Cannery, San Pedro, Cal.
The only Cannery of Genuine Sardines in America and the only one that is operated 12 months in the year in the same line of business.

3 Colored California Post Cards Free

For Sale FOR SALE EVERYWHERE California Sardines THE GENUINE SARDINE **Everywhere**

California Fish Co. Henne Building LOS ANGELES



BOSTROM'S IMPROVED FARM LEVEL

Used for irrigation and drainage work. Cheapest and best level yet invented for farm use. Has the latest patented improvements in simplicity and usefulness. Can be operated by any one. Price including telescope tripod and target rod $15.00.

PALACE HARDWARE COMPANY
581 Market Street, San Francisco, Coast Agents. Send for Circular.

When writing advertisers, mention Cultivator.

Household Department

DYING IN HARNESS.

Only a fallen horse, stretched out there on the road,
Stretched in the broken shafts and crushed by the heavy load;
Only a fallen horse, and a circle of wondering eyes
Watching the frightened teamster goading the beast to rise.

Hold! for his toil is over—no more labor for him;
See the poor neck outstretched, and the patient eyes grow dim;
See on the friendly stones how peacefully rests the head—
Thinking, if dumb beasts think, how good it is to be dead;
After the weary journey how restful it is to lie
With the broken shafts and the cruel load—waiting only to die.

—John Boyle O'Reilly.

TROUBLE IN THE HOUSEHOLD.

IT WAS after dinner. The young man who had not been married very long sunk down into his brand new Morris chair with a sigh of comfort. He had on his brand new smoking jacket and his brand new house slippers, and as he gazed at his wife in her pretty and also brand new gown he felt very well pleased with himself and with life.

"That was a dandy dinner," he remarked.

He was a little surprised that the compliment did not draw her to his side, as such remarks usually did. She remained sitting in the weathered oak rocker and looked absently from her embroidery.

"Was it?" she inquired.

"Fine!" said the young man, with tremendous enthusiasm. He did not exactly understand why, but he felt an impulse to be blithe and emphatic. He felt there was something in the air.

"I am glad you liked it," said his wife.

The young man coughed and picked up the newspaper. For five minutes he read the advertisements upside down, frowning. He was thinking that Mabel certainly did not act as usual.

"Have you a headache?" he asked anxiously.

The young woman in the weathered oak rocker gave him a brief and fleeting glance. "I feel very well, thank you," she said, politely.

"Oh!" said her husband, a little blankly. "I'm glad. I didn't know. I—er—just thought I'd ask."

Over the edge of the paper he sent inquiring glances at her. He had never noticed it before, but when she looked down, as she was doing now, Mabel's profile certainly was severe. Perhaps it was because he was used to seeing her laugh. Now that he thought of it she hadn't laughed all during dinner. He wondered why.

"Were you alone all day?" he asked diplomatically. "Were you lonesome?"

"Three of the girls were here all afternoon," said his wife. "We had a very good time. No, I was not lonesome.

"Well—what—has anything gone wrong?" asked the young man.

"Oh, dear, no." said his wife, with polite carelessness. "Why, what could go wrong?"

"I didn't know," said her husband, "I though something might. Things do sometimes, you know. I thought you seemed so quiet."

"Oh, do I?" asked his wife, turning her embroidery about.

The young married man held his head. A horrible feeling of helplessness was stealing over him. He wondered with a sort of chill if this was a natural thing and to be expected. Maybe Mabel had grown tired of him already. Perhaps it was the usual thing to have one's wife grow cold and abstracted after a few weeks. But a whole lifetime of it!

The young married man made a great fuss over getting a cigar and lighting it, wandering around the room as he did so. When he passed Mabel he touched her hair lightly as he had a way of doing, but no answering upturned face resulted. Maybe she did not notice it, he concluded, for the touch was very light.

"I saw Billy Hamline today," he began briskly, as he sat down again.

"Did you?" said he wife.

"He told me a big piece of news," went on her husband desperately.

"Did he?" said his wife.

"See here," said the young married man hurriedly, "what's the matter, Mabel?"

"Nothing is the matter," said his wife.

"Yes, there is!" protested her husband. His tone was tinged with alarm. "Tell me what it is!"

"I don't see why you should think anything is the matter," protested his wife, raising her chin a trifle.

"Why, you act so odd!" insisted her husband. "Not a bit like yourself! I wish you'd tell me!"

"I'm surprised," said his wife with her chin still higher, "that you should even notice how I act."

"Why, Mabel?"

"Yes, I am! You—you've shown plainly enough—well, never mind!"

"Now, Mabel!" cried the young married man, standing anxiously before her, "tell me instantly what's wrong! What have I done?"

"You—you f-f-forgot to k-k-kiss me when you came home tonight for the f-f-first time since we were married!" sobbed his wife, dropping the embroidery and hunting her handkerchief, "and nev-never once said you still l-l-loved me! I think that's enough!"

"Great guns!" said the young married man contritely and relievedly. "I believe I did forget. What a villian I am!"

ALTERING CHILDREN'S DRESSES.

When you come to look over your little girls wardrobe this summer you will find that many of the little garments are so badly outgrown that they cannot be used again without being remodeled, and often a little work will make them almost as nice as new.

Cotton yokes are invaluable for lengthening dresses and underskirts. Cut circular and without fullness at the top. A nice way to lengthen a full skirt is to cut it apart four inches from the bottom and insert a straight or bias strip of some material to match the goods then a yoke, belt and cuffs can be made of the same material.

Vests may be set in waists when these are too small across the bust and back and a waist can be altered in this way for a child and straps placed across the back and front and the sleeves made short, then it can be worn over a separate waist that comes to the waist line.

Some little gingham and percale

THE SAVINGS AND LOAN SOCIETY
101 MONTGOMERY ST.
SAN FRANCISCO

BY reason of the interest paid on deposits, this institution affords the owner of money an opportunity to make it productive, combining moreover, absolute safety with the interest feature. Dividends at the rate of 4 per cent per annum were paid for the year 1908. Accounts may be opened by mail.

THE OLDEST SAVINGS BANK IN CALIFORNIA

Pioneer ROOFING

Of all ready Roofings, Pioneer "Rubber Sanded"—and Pioneer "Rubber Flaxine"—are best.

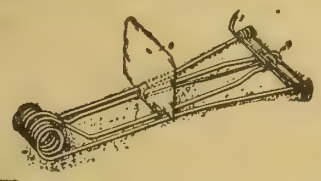
No other roofings compare with them in wearing qualities.

Before you decide on what roofing to use, it will pay you to investigate "Rubber Sanded" and "Rubber Flaxine."

Samples and Roofing Booklet "F" mailed free upon request.

PIONEER ROLL PAPER CO.
Department 11, Los Angeles
Manufacturers of Ready Roofings and Refiners of Asphalt.

MACABEE GOPHER TRAP



Small, simple, sure. At all dealers. If your dealer does not handle same, send 20 cents in stamps and mention your dealer's name and get sample by mail postage paid at special rates. Manufactured by.
Z. A. MACABEE, LOS GATOS, CAL.

FAIRMONT HOTEL SAN FRANCISCO

Scenic Hotel of the World
Overlooks San Francisco Bay and City
Five Minutes Ride from Ferries
600 rooms. Every room has bath
Rates—single room and bath—$2.50, $3.00, $3.50, $4.00, $4.50, $5.00, $7.00, $10.00.
Suites—$10.00, $12.50, $15.00, $20.00 and up.
Management
Palace Hotel Company

JAMES R. TOWNSEND
Solicitor of American and Foreign Patents Copyrights, Trademarks and Labels Registered. Rooms 428-433 Bradbury Blk Los Angeles. Phones: Home, A4619; Sunset, Main 347

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dresses that were still quite good, but outgrown and faded, were first boiled in strong suds to which a little soda was added to remove as much of the remaining color as possible, then they were pieced out to make them large enough and boiled in a strong solution of dark blue diamond dye for cotton and some boys waists were renewed in the same way and they were as serviceable as new garments. Faded muslins will take any of the delicate colors such as pink or any shade of green.

Blouses for the small boys may be let down and the bagging will conceal the piecing.

If the little girl has outgrown her hat you may remove the crown and take out a row of braid to allow it to fit the head. Then make a new crown of silkoline or any soft material and sew it to the brim. A nice Leghorn or any fine straw hat can be made over by making a new crown of chip and net weave and then adding two or three rows of fancy straw braid to the brim and these can be bought for a small sum at any millinery store.—Martha.

BREAD MAKING.

Every woman who has the responsibility of cooking should know how to make good bread. It is the staff of life; it is used at each meal and should be light, sweet and well baked. The requisites for good bread are good flour, fresh sweet yeast, pure water or milk scalded, and a good oven. Milk should never be used in any kind of bread without being scalded or brought to a boiling point before using.

Flour should always be kept in a dry place. Dough should be kept warm and not be exposed to drafts. People often fail in bread making because they use poor yeast. If it is dry or discolored, it is too old; if it is rank smelling, it will spoil the bread. The sponge should always be beaten till stiff. Knead the dough till it has a silky smoothness, is full of blisters and does not stick to the hands. Bread should double its bulk at the first rising in four hours, and at the second in one hour. It should be watched carefully while baking. In ordinary small ranges the loaves need frequent turning to insure even baking.

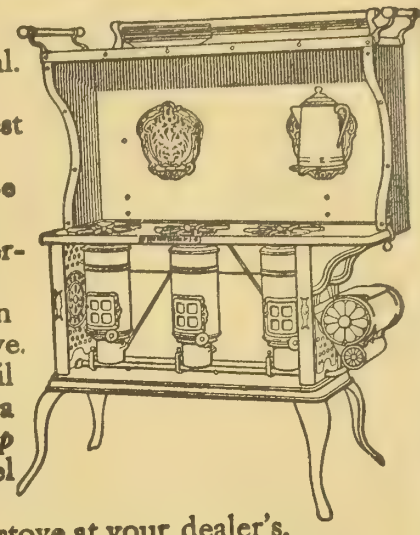
Bread should be baked 40 to 50 minutes. When it is safe to handle, it is safe to take out. Always take bread from the pans as soon as it is removed from the oven, then cover and allow to cool slowly. After it is cool, cover and keep in a dry place.—Farmer's Tribune.

RANDOM SHOTS.

I shot an arrow into the air, it fell to earth in the distance, I knew not where, till a neighbor said that it killed his calf, and I had to pay him six and a half ($6.50). I bought some poison to slay some rats, and a neighbor swore it killed his cats, and rather than argue over the fence, I paid him four dollars and fifty cents ($4.50). One night I sat sailing a toy balloon, and hoped that it would soar till it reached the moon; but the candle fell out on a neighbor's straw, and he said that I must settle or go to law. And that is the way with random shot—it never hits in the proper spot; and the joke you spring that you think so smart, may leave a wound in some fellow's heart.—Walter Mason.

The grange at Holley, Oregon, will hold its annual picnic May 19th.

USE A
NEW PERFECTION
Wick Blue Flame Oil Cook-Stove



Because it's clean.
Because it's economical.
Because it saves time.
Because it gives best cooking results.
Because its flame can be regulated instantly.
Because it will not overheat your kitchen.
Because it is better than the coal or wood stove.
Because it's the only oil stove made with a useful *Cabinet Top* like the modern steel range.

For other reasons see stove at your dealer's, or write our nearest agency. Made in three sizes. Sold with or without Cabinet Top.

The Rayo Lamp cannot be equaled for its bright and steady light, simple construction and absolute safety. Equipped with latest improved burner. Made of brass throughout and beautifully nickeled. An ornament to any room, whether library, dining-room, parlor or bedroom.
Write to our nearest agency if not at your dealer's
STANDARD OIL COMPANY
(Incorporated)

WOULD YOU LIKE TO SLEEP ON A MATTRESS

That is guaranteed to be absolutely hygienic?
That insures healthy, comfortable sleep?
That possesses all the good qualities of the finest hair mattress at about one-half the cost?
That is made in a factory where every precaution has been taken to insure the most perfect sanitary conditions?
That is made by skilled workmen in the most approved manner and the latest style?
That is guaranteed to give perfect satisfaction or your money promptly and cheerfully refunded?
That costs $15.00 for the full size, $12.50 for the ¾ size, $10.00 for the single size and is positively the best mattress made anywhere at these prices?

A Postal Card Addressed to the

John Breuner Co.

Sacramento, California

Will bring you a booklet describing their famous "Kapokeen" Mattress, which has all the good points mentioned and many more. Write today

SECURITY SAVINGS BANK
Security Building, Fifth and Spring Streets
Established 1889
Oldest and Largest in Los Angeles
Capital and Reserve, $1,300,000.00
Resources, over $22,000,000.00
Over 50,000 Depositors

4% Interest on Savings Accounts
And on Six Month's Certificates of Deposit
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Which accounts MAY BE CHECKED AGAINST without presentation of pass-book. Interest is paid monthly on the minimum monthly balances.

When writing advertisers, mention Cultivator.

San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, May 12, 1909.

Butter.

Butter still stands at 50 cents per roll with increasing quantity being received. Much is going into storage.

Produce Exchange wholesale quotations are as follows with actual selling price to the trade 2½c advance on Extras.

Creamery ex per roll	50
Firsts	47½
Cooking	20
Butterine	16@20

Cheese.

Southern California Anchor	18
Northern fresh	16½
Anchor Young America	19
Longhorn	21
Eastern singles	20
Cheddars	19
Swiss	17@18
Imported Swiss	30
Daisy	20
Limburger	21
Oregon triplets	18
Twin	18½

Eggs and Poultry.

The egg market is firm receipts liberal and much stock going into storage.

Hens per pound	15@17
Eggs local candled	26
Eggs extra selected	28

Dealers pay for live stock.

Hens per pound	15@17
Young roosters	16
Fryers per lb	23
Broilers per lb	26
Roasters	22
Old roosters	8
Turkeys	28
Geese	16
Ducks	16
Squabs	1.25@1.75

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs from 175 to 200 pounds	6½@6¾
Prime steers	4¾@5
Heifers	4@4½
Calves per pound	5
Sheep ewes per head	3.75@4.00
Lambs per head	3.25@3.50
Wethers	4.50@5.00

Potatoes.

Wholesale prices are:

Sweets per ctl	2.00@2.25
Sweets choice	1.25@1.50
Sweets Red	1.50
New per box	1.35@1.50
Early Rose local	2.50@2.75
Burbanks local	2.75
Lompocs	2.75
Highland fancy	2.50@2.75
Oregons Burbanks	2.75@3.00

Onions.

Wholesale quotations:

Imperial Bermudas per crate	1.00@1.15
Texas Bermudas per crate	1.00@1.15
Coachellas	1.15@1.25
White wax per crate	1.15@1.25
Garlic	10@12

Vegetables.

Artichokes per doz northern	50@75
Artichokes locals	35@50
Asparagus green	6@7
Beets per sk	1.00@1.10
Bell peppers per lb	15@35
Beans string	10
Brussels sprouts per lb	9@10
Cabbage per sk	85
Cabbage red per lb	2@3
Celery per crate	6.00@6.50
Chili per lb	18@20
Chili dried	9@10
Chicory per doz	35
Cucumbers per doz hot house	75@2.00
Cauliflower per doz	75@85
Carrots per sk	1.00@1.25
Endive per doz	25
Egg plant	20@25
Green onions per doz bunches	15@20
Horseradish per lb	13
Summer squash	1.25@1.50
Leeks	35@40
Lettuce choice	40@60
Mushrooms per basket	3.00
Oyster plant	25@30
Okra per lb	40
Peas per lb	1@3
Parsley doz	15@20
Parsnips	15@20
Rhubarb Northern per box	1.65
Rhubarb C. W.	75@1.25
Radishes per doz	15@20
Spinach per doz	15@20
Turnips sk	1.00
Tomatoes crate	1.15@1.25
Water cress	15@20

Citrus Fruits.

Tangerines halves	1.00@1.50
Grapefruit seedless	2.75@3.00
Grapefruit seedlings	1.00@1.50
Lemons fy	1.75@2.00
Lemons ch	1.25@1.75
Limes half box	1.50@2.00

Fresh Fruits.

Wholesale prices on the market are:

Baldwins 4 tier	1.35
Bellflowers	1.50@2.00
Newton Pippins	2.25
W W Pearmains	2.00
Spitzenberg	2.25@2.50
Jonathans	1.75
Cherries white	1.35
Cherries black	1.35@1.50
Aligator Pears per doz	3.50@4.00
Custard apples per lb	10@15
Guavas	4@6
Pineapples per lb	10
Loquats per lb	2@3
Pears box	1.75@2.00
Raspberries	5@8
Strawberries per crate	50@75
Strawberries Brandywines	90@1.10
Strawberries ch	3
Blackberries	8@10

Dried Fruits.

Wholesale prices are:

Apricots	8@10
Evap apples fy per lb	8½
Figs loose white	5
Figs blk	5
Peaches in boxes	6@8
Peaches sacks	6@7
Pears	9
Plums pitted	8@9
Nectarines	7½@9
Prunes 30's to 40's boxed	8
Prunes 40's to 50's	7½
Prunes 50's to 60's	7

RAISINS—Muscatels, 2-crown, loose, 50-lb. boxes, lb., 3½c; do., 3-crown, 4c; do., 4-crown 5c; sultanas, bleached, lb., 9c; do., unbleached, 3½@4c; new seeded raisins, 16-oz. packages, 6c; do., 12-oz. packages, 5c.

Beans Dried.

Wholesale prices are:

Limas per ctl	4.50
Black eyes	3.75@4.00
Lady Washington	5.15@5.25
Small White	6.15@6.25
Black eyes	3.75@4.00
Garvanzas	4.00
Lentils California	7.00@8.00
Lentils German	8.00
Bayou	3.50

Nuts.

Almonds IXL per lb	14@15
Ne Plus Uutra	14
Pecans polished	15
Peanuts Virginia	6½@7
Peanuts California	5
Peanuts Jap	6@6½
Walnuts No 1	11@12
Chestnuts	13@14

Honey.

Wholesale quotations:

Extracted water white	8
Extracted Light Amber	6½@7
Comb W W	16
Comb white	15
Beeswax	30

Hay.

Prices paid to producers f. o. b. Los Angeles are as follows:

Barley No 1	21.00@23.00
Barley No 2	18.00@20.00
Alfalfa northern per ton	14.00@15.00
Alfalfa local	15.00@18.00
Tame Oat No 1	22.00@24.00
Wheat No 1	19.00@21.00
Wheat No 2	18.00@20.00
New barley hay	13.00
New alfalfa	12.50

Grains.

Wholesale selling price f. o. b., Los Angeles:

Wheat new per ctl	2.40
Kaffir corn	1.85
Corn Eastern bulk	1.90
Egyptain corn	1.85
White oats	1.90
Seed Rye	1.80

Feed Stuff.

Wholesale selling price f. o. b., Los Angeles:

Cracked corn	1.95
Shorts	1.80
Bran	1.70
Cocoanut cake meal	1.85
Cottonseed meal	1.25
Oil cake meal	2.50
Feed meal	2.00
Cracked wheat	2.50
Rolled Barley	1.70

San Francisco Markets

SAN FRANCISCO, May 11, 1909.

Butter.

Butter advanced after last quotations to 24½ and has remained at that price till the present. Market is firm though nearly 100,000 pounds daily are received.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras per lb	24½
California firsts	24
California seconds	23½

Cheese.

California flats fy	13½
Firsts	13
Seconds	12
Cal Young America fy	17
Firsts	16½
Young American Oregon fy	16½
Eastern N. Y. Cheddars fy	17½
Oregon flat fy	16

Eggs and Poultry.

Eggs advanced nicely during the week but an attempt is made to hammer down the price at this time. The market is not strong and buyers demand concessions.

Official quotations of the S. F. Wholesale Dairy & Produce Ex. are:

Fresh ranch extras	26½
Eggs first per doz	26
Eggs second	24½
Eggs thirds	23½
Hens per doz	5.00@7.00
Hens extra	7.00@9.00
Young roosters	9.00@11.00
Old Roosters	4.00@5.00
Fryers per doz	6.00@8.00
Broilers per doz	3.00@5.50
Geese per pair	1.50@1.75
Goslings per pair	1.75@2.00
Ducks young	6.00@7.50
Live Turkeys	17@19
Dressed Turkeys	18@22
Pigeons young	2.00@2.50

Live Stock.

San Francisco prices gross weight:

Steers No 1	4½@4¾
Do second quality	4¼
No 1 cows and heifers	3¾@4
Second quality	3¼@3½
Hogs 100 to 140	7@7¼
Hogs 140 to 250	7¼@7½
Rough heavy	4½@5
Calves per lb	4@5¼
Lambs yearlings	5¼
Milk lambs	5½
Wethers No 1 unshorn	4¾
Ewes No 1	4¼

Potatoes.

Wholesale market quotations:

River white fy sacks	2.00@2.25
Early Rose	1.85@2.00
River Burbanks	1.35@1.50
Salinas Burbanks	2.40@2.47½
Sweets per crate	1.50@1.65
Oregons	2.25@2.50
New potatoes	2½@3¼

Vegetables.

Wholesale quotations:

Asparagus per bx	1.25@1.50
Bell peppers per lb	25
Brussels sprouts per lb	3@5
Cabbage per box	2.00@2.25
Cauliflower doz	75@1.00
Carrots per sk	65@75
Celery per doz	40@60
Cucumbers per doz	50@90
Chili peppers per lb	20@25
Egg plant per lb	20@22½
Green peas per sk	75@1.25
Mushrooms per lb	12½@25
Squash per box	90@1.25
Onions green per box	60@75
Rhubarb per box for bay	75@1.25
String beans	5@10
Tomatoes box Mexicans	75@1.25
Wax Beans	10@12½
Garlic new	8@10

Onions.

Onions Oregons	2.35@2.40
Australian Brown	4.00
Texas Bermudas per crate	1.25@1.35
New green per box	65
New red per sk	1.50@1.75

Citrus Fruits.

Navels fy	2.00@2.50
Choice	1.75@2.25
Tangerines per crate	75@1.00
Mandarins	75@1.00
Grapefruit seedless	2.00@3.75
Grapefruit seedlings	1.00@1.75
Lemons ch	1.75@2.50
Lemons fy	2.75@3.25
Limes	4.50@5.00
Limes Cal sm box	1.00@1.25

Fresh Fruits.

Bellflowers	1.00@1.35
Bellflowers No 2	60@1.00
Cherries purple Guigne	1.00@1.35
Cherries white	50@75
Newton Pippins	1.35@1.50
Ben Davis	1.25@1.65
Winter Nellis	1.25@1.65
Other Kinds	75@1.00
Strawberries Florin per crate	40@65
Malindas per chest	3.50@5.00
Longworths per chest	5.00@8.00
Pineapples per doz	2.00@4.00

Dried Fruits.

Prunes 4-size basis	2½
Santa Clara	2¾

½c premium for larger sizes

Apricots per lb; Choice 8½; fancy 7@10.

Peaches—Choice	4¾; fancy 6@7½
Apples evap	5@7½
Pears	5@8½
Figs	2½@4
Nectarines	5@6
Pitted Plums	7@8

RAISINS—1908 crop, f. o. b.: Fancy Seeded No. 16, cartons, 4½c; do, No. 12, 3¾c; do, Choice, No. 16, 4c; do, Choice, No. 12, 3¾c. 50-lb. bxs: Loose Muscatels, Standard, 4-crown, 4c; 3-crown, 3c; 2-crown 2½c; Seedless Thompson, unbleached, 3½c; Seedless Sultanas, unbleached, 2¾c; Dried Grapes, 2c; London Layers, clusters, 6-crown, $3; 2-crown, 90c; 3-crown, $1; 4-crown, $1.50; 5-crown, $2.50.

Nuts.

Walnuts S S No 1	9½
Walnuts No 2	6
No 1 hard shell	8½
No 2 hard shell	6
Almonds Nonp	11½
Almonds IXL	10½@11
Languedoc	9
Pecans	15@17
Chestnuts	7@9

Cream Separators, all sizes, all prices. O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

Beans Dried.

Limas	4.00@4.2
Pink	3.20@3.2
Small white	5.50@5.6
Large white	4.50@4.7
Black eyes	3.25@3.5
Red kidneys	3.50@3.7
Garvanzas	2.75@3.0
Bayo	5.00@5.2
Horse beans	2.00@2.2
Cranberry	4.75@5.0

Hops.

Hops 1908 crop	4@7
Old crop	2½@3½
1909 crop contracted for at	9½@1

Honey.

White comb	11@12½
Light Amber	9@1
Extracted W W	7@
Extacted light amber	6@
Beeswax No 1 per lb	28@3
Beeswax No 2 per lb	23@2

Hay.

General reports from all over the state are encouraging. While a good rain, generously distributed, would have given us one of the largest crops we have known of late years, the moisture in the ground and in the atmosphere will be sufficient to give us a plentiful supply, and we anticipate somewhat more than the average, in fact a large supply of hay, and rather impartially distributed throughout the hay-growing sections. While the Southern districts would like more rain, the Bay counties have had just enough.

Regarding future prices, it is extremely difficult to make predictions. We have received during the past week a few cars of the new volunteer crop. It is altogether too early to establish to market value on these arrivals, as such values can only be determined when the hay arrives in large quantities, bringing one section in competition with another. From reports of shipments, we anticipate that the coming week will bring in large quantities of volunteer and early grain hay, mainly from the southern section, which first produces these grades.

Choice wheat hay	23.00@25.00
No 1 wheat or wheat & oat	20.00@23.00
No 2 wheat or wheat & oat	17.00@20.00
Choice tame oat	21.00@23.00
Other tame oat	18.00@21.00
Wild oat	15.00@19.00
Stock hay	7.00@10.00
Alaflfa	13.00@17.00
Straw	60@80

Grains.

Wheat No 1	2.10@2.15
Barley	1.52½@1.60
Barley common to fair	1.45@1.55
Oats white	2.15@2.25
Oats gray	2.05@2.15
Rye new crop	1.80@1.85
Corn Egyptain	1.60@1.65
Corn Cal sm round	1.80@1.85
Alfalfa seed, Cal	16@18
Alfalfa seed, Utah	18@19
Mustard yellow	5¾@6
Mustard brown	3¾@4½
Millet	2½@3
Broom corn seed per ton	23.50

Feed Stuff.

Bran per ton	29.00@30.00
Feed cornmeal per ton	37.00@38.00
Cracked corn per ton	38.00@39.00
Rolled barley per ton	32.00@33.00
Rolled oats per ton	42.00@43.00
Oil cake meal per ton	38.50@40.00
Cocoanut cake per ton	25.00@26.00
Middlings	33.00@35.00
Mixed feed per ton	28.00@32.00
Shorts	31.00@32.50

Citrus Market

LOS ANGELES, May 12, 1909.

Oranges are going forward at very heavy rate. The output is proving much greater than anticipated earlier in the season. This excess of fruit which has to be handled soon is the cause of the forced shipments. Over 1500 cars of navels yet remain and they will not be cleaned up till well into June. Valencias go forward occasionally, but only when trees are overloaded.

Lemons are not demanded as keenly as in warmer weather. Higher grades command fair prices and lower grades go begging because as a rule they are poorer keepers.

Shipments.

Shipments since November 1, 1908, aggregate 23,784 cars of which 20,820 were oranges and 2,956 lemons.

NEW YORK, May 19.—Sixty-six carloads of oranges and five carloads of lemons sold. Considering size of offering the market held up extremely well, but was naturally somewhat easier and lower. Weather clear and warm. Extra fancy navels ranged from $2.10 to $3.60, average, $2.80; fancy, $1.85 to $3.20, average, $2.55; extra choice, $1.80 to 2.95, average, $2.30; choice, $1.60 to $2.55, average, $2.10.

BOSTON, May 10.—Twenty-seven carloads sold. Weather hot. Market is unchanged.

NAVELS—	Average.
La Mesa Riv Ex Riverside	2.30
Robusta AH Ex Pachappa	2.45
Quail OK Ex	2.35

For Mehring Foot-Power Milking Machines see O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

Lily QC Ex Corona 2.40
Tunnel ST Ex Fernando 2.80
Laurel QC Ex Corona 2.40
Gold Buckle RH Ex E. Highland .. 2.55
E. Highland A E Highland CFA .. 2.50
Standard National O Co 2.25
Rialto Girl Growers F Co 2.10
Pansy Colton OG Assn 2.00

ST. MICHAELS—
Champion A C Denman Sons 2.45
Aurora E Peycke Co 1.95
Climax do 1.85

ST. MICHAELS (Halves)—
Orchid Atland F Co 95
Tuscada 90

GRAPEFRUIT—
A-One E Peycke Co 2.40
E Highland A E High CFA 2.10
Crocus SB Ex (seedling) 2.30
Pine Cone SB Ex 2.55

LEMONS—
Economy Randolph F Co 1.40
Pet SA Ex 2.35
Greyhound 1.80

PHILADELPHIA, May 10.—Fourteen carloads navels, four mixed carloads and two carloads lemons sold. Weather warm. Showery. Market steady on navels.

NAVELS— Average.
Geisha J S Kuns 2.35
Rialto Girl Growers F Co 2.20
Greyhound SA Ex 2.05
Sugar Loaf Riv Ex Highland 2.35
Coyote OK Ex 2.20
Greyhound do 1.60
Cosmos SB Ex Yerkes Spur 1.95

LEMONS—
Las Fuentes CS Co Summerland .. 1.25
Montecito 85
Coyote OK Ex 1.60

PITTSBURG, May 10.—Market steady on navels, lower on lemons. It is raining.

NAVELS— Average.
Blue Mtn P. & McKevitt 2.20
Standard National O Co 2.10
Del Oro Sparr Ft Co 1.25
Greyhond SA Ex 1.95
Jasmine DM Ex Duarte 1.80
Fiesta Riv Ex Pachappa 2.25
Scroll do 1.60

SEEDLINGS—
Titus Ranch San Marino GPA 1.65
Circus Sparr Ft Co 1.45

TANGERINE (Halves)—
Tiger 90
Quail 70
Coyote 55

SEEDLINGS—Continued:
Jasmine 1.90

SWEETS—
Searchlight 1.45

ST MICHAEL (Halves)—
Jasmine 1.10

LEMONS—
Circus Sparr Ft Co 1.65
Del Oro 1.65
Duck SA Ex 1.25
Las Fuentes 1.00
Montecito 80

CINCINNATI, May 10.—Market weak, weather cool. Four cars navels, one car lemons and one car seedlings sold.

NAVELS— Average.
Searchlight SS Ex Orange 2.00
Blue Jay OK Ex 1.95
Coyote do 2.20
Pet SA Ex 1.85
Duck SA Ex 2.00

SEEDLINGS—
Rivera 1.55
ST Ex Rivera Burro 1.55

LEMONS—
Duck SA Ex 1.65

ST. LOUIS, May 10.—Weather favorable. Market weak on large sizes. Thirteen cars sold.

NAVELS— Avreage.
Greyhound SA Ex 2.40
Golden Riverside Ex Riverside 2.30
Castle Riverside Ex Riverside 2.20
Fruita Riverside Ex Riverside 2.25
Orchard National O Co 2.60
Golden Gate Redlands GO Assn 1.80

LEMONS—
Princess 1.95
Lily 1.50
Belt 1.60
Club 2.25
Valley 2.00

CLEVELAND, May 10.—Weather cold, rainy. Market is advancing on good stock navels, easier on lemons on account of the heavy offering. Thirteen cars sold.

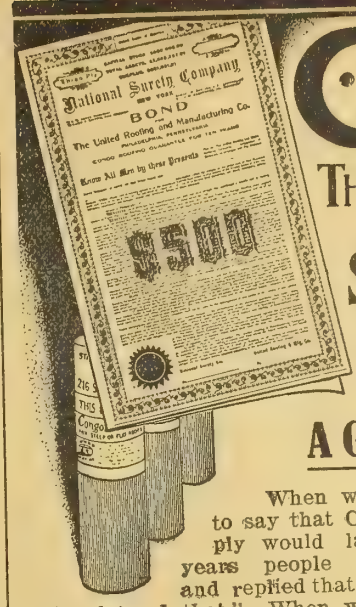
NAVELS— Average.
Cupid VC Ft Ex Santa Paula 1.95
Newsboy RH Ex Redlands 2.00
Ben Hur RH Ex Redlands 2.20
Redlands Oranges RH Ex Red 1.70
Royal Knight RH Ex Redlands 2.05
Newsboy RH Ex Redlands 2.10
Gold Buckle RH Ex Highland 2.50
Yuletide Redlands MO Co 1.95

GRAPEFRUIT—
Golden Flower Redlands GOA 3.05

ST. MICHAELS—
Puritan 2.65
Halves 1.10
Big R 1.05

LEMONS—
Century 1.45
Lemon Spray 1.25
Conqueror Ind Ft Co 80
Black Hawk AH Ex Prenda 1.75

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.



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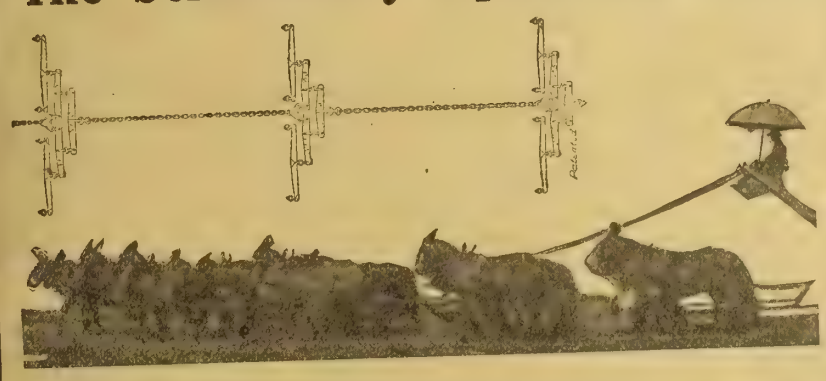

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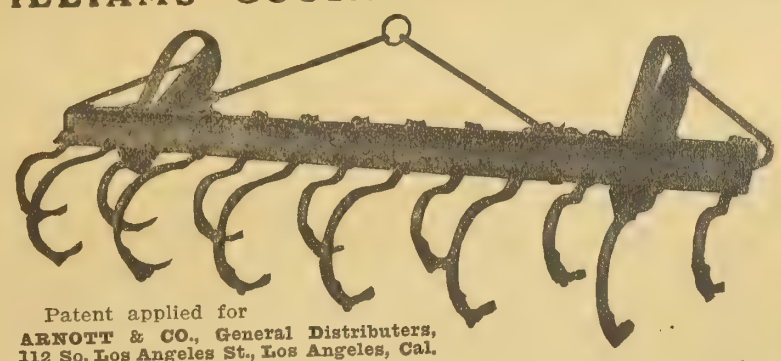

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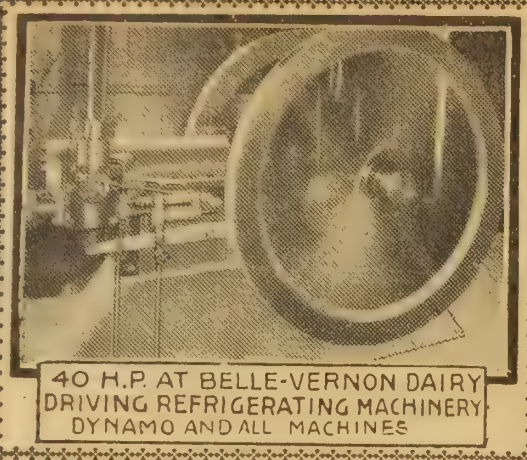
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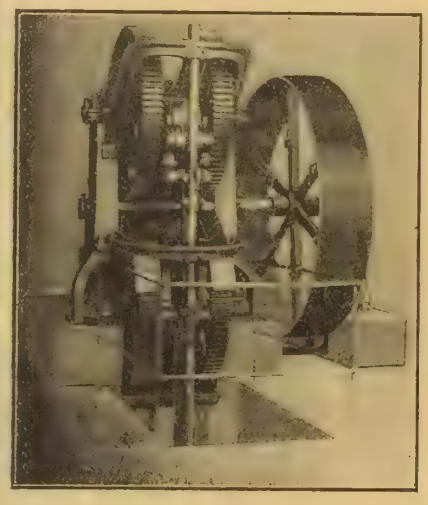
The Smooth Running, Noiseless Pomona Deep Well Pump



It is thirty to fifty per cent more efficient than any centrifugal pump ever made. No high speed bearings to cut out. All breakages and rod troubles eliminated.

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A deep well pump that has n valves or plungers to wear o get out of order, no gears, con sequently no noise or breakin of teeth.

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This type of pump is fast tak ing the place of Vertical Steam Deep well Plunger and Propel ler Pumps.

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Write or call on

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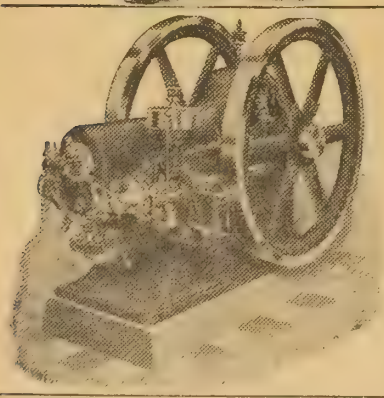

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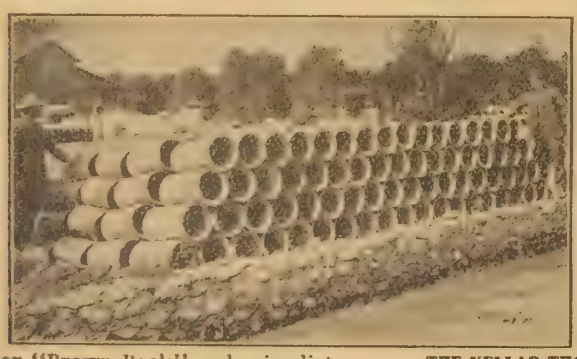

From photograph showing amount of

Ten-Inch Pipe

made by four men from 10 bbls. of cement in 9 hours — 280 two-foot joints, or 560 feet. This pipe was made with the

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An equal amount can not be made with any other tools in the same period of time. Write for "Brown Book" and price list.

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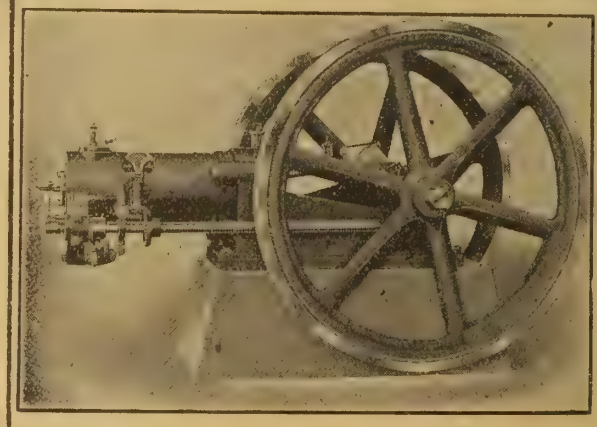

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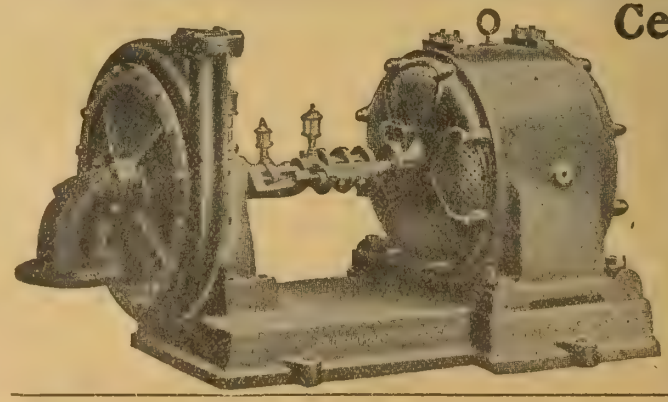

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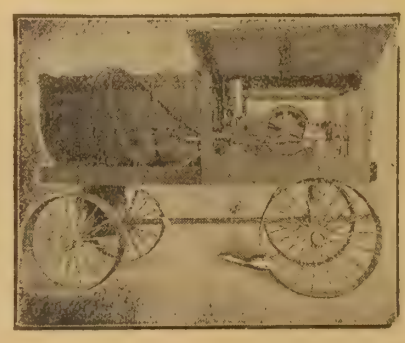

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Published Weekly — One Dollar a Year

Los Angeles — May 20, 1909 — San Francisco

Control of Weeds by Chemical Sprays

Mustard Easily Controlled but Wild Radish Much More Difficult. A 20 Per Cent Solution of Sulphate of Iron Does the Work

Wild Mustard — Wild Radish

THE control of weeds by spraying with a chemical mixture looks attractive. Unfortunately all weeds are not subject to control in that way. However, those which are may be handled most economically. Some weeds which are pests in grain or hay fields when cultivation is not possible, are in this class. The illustration above pictures two pests controlled by the sulphate of iron solution. This is not injurious to the grain, but does control the pest.

The solution must be applied with a powerful spraying machine, producing a real mist free from drops. The best pressure is 80-100 lbs. measured at the nozzle, not at the pump.

A properly constructed machine will deliver continuously the mist at 80 lbs. pressure, and at 100 lbs. the mist is driven onto the plants and ground and rolls over and over, wetting the underside of the leaves as well.

Depending on the facilities for preparing and handling the solution, a two-horse spraying machine will spray from twenty to one hundred acres of grain in a ten-hour day.

The success or failure in spraying grain crops to kill weeds depends on how the sulphate of iron is applied, and when. For instance, if the solution is applied in drops, as from a watering pot,

(Continued on Page 591.)

Disks 50 Times More Work

Washing 42 disks, and other bowl parts, from a disk filled "bucket bowl" machine. Other "bucket bowls" are about as bad.

Are you willing to wash and dry 50 to 100 times more tinware surface than you need to? If not, why not let "bucket bowl" cream separators alone and get a Sharples Tubular? Is thoroughly washing and carefully drying tinware so easy that you don't care how much you wash? Had you not rather wash a single piece, that has no more surface than the palm of a man's hand, than to wash 40 to 60 pieces that, together, have as much surface as a piece of carpet two yards long and a yard wide? That's a pretty big contrast for sure.

The disks in the full pan belong inside a "bucket bowl." The little piece in the other pan is all there is inside Sharples Dairy Tubular bowls.

But it shows truly the difference in the work of washing a common disk filled "bucket bowl" cream separator as compared to washing the light, sanitary, wear forever modern bowl used in Sharples Dairy Tubular Cream Separators. Look at the two dish pans and you'll see the point. Other "bucket bowl" separators are about as bad.

Considering the complication and weight of "bucket bowl" cream separators (and **all** cream separators **except the Tubular** are the "bucket bowl" kind) don't you think you'll save a lot of work, wear and expense by letting the "bucket bowl" sort entirely alone and getting a Tubular?

All there is to the Dairy Tubular bowl. Washed easily in three minutes. A few thrusts with the brush does it.

It is not surprising that Tubular sales exceed those of most, if not all, other separators combined. "Bucket bowl" sales have been so reduced, by Tubular popularity, that the leading maker of disk machines (the self-styled "original" disk maker) has found it necessary to commence suits against a catalog house and others that have been making and selling cheap separators with disks like his for a number of years. Why? Because he has lost his grip—taken a back seat—is so out of date that he's scrapping for trade with the catalog house and other cheap concerns.

The Tubular is made in the world's greatest cream separator factory. Branch factories in Canada and Germany. It is the world's greatest cream separator. It will give you greatest satisfaction—greatest profits—greatest wear. Get Catalog No. 260.

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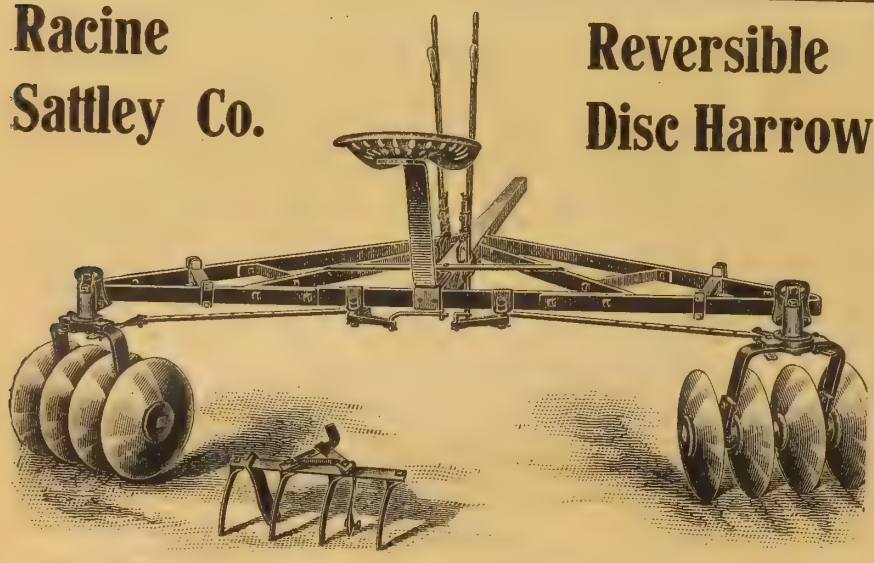

We sell this disc harrow under a very strong guarantee. That it will do as good or better work than any other implement of the kind on the market, or your money back.

Especially adapted to Orchard and Vineyard Use

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10-20 in. disc, 5 ft. cut, " " " " " " " "	$37
Extension Frame, Complete, extra	$5

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L. M. Davenport Co.

California Cultivator

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National Irrigation Congress at Spokane

An Appeal for Proper Consideration and Greater Interest in the Convention to be Held in August

Written by HARVEY W. SCOTT, of Portland, Oregon

NOWHERE in the world is agriculture so intelligent as in the irrigated regions; nowhere is it so productive, and nowhere else have the problems of poverty, isolation and failure been so effectually attacked."

Colonel Harvey W. Scott, editor of The Portland Oregonian and dean of journalism on the Pacific slope, who has been actively identified with practically every uplift movement in the Northwest during the last 35 years, says this in urging continent-wide co-operation and commenting upon the importance to the nation of the National Irrigation Congress, which will have its seventeenth session in Spokane August 9 to 14, under the presidency of George E. Barstow of Barstow, Texas, adding:

"If the people were interested in events in proportion to their importance the irrigation congress next August would plunge the whole country into wild excitement. One imagines, however, that our national equanimity will not be greatly perturbed by it.

"Although the subject to be discussed relates vitally to human happiness, although the way we finally answer the question which the eminent speakers at the congress will raise may decide whether 500 years from now the United States shall be a flourishing empire or a desert solitude, nevertheless it will not be easy to arouse more than a perfunctory public interest.

"The great names of the orators, the pomp of civic festivity, the display of governmental science will all be needed to hold the languid ear of the indifferent farmer, whom nothing short of an earthquake will compel to think or study. Irrigation would rain gold into his tubs if he would set them out, but he won't until he is harried and hounded into doing it.

"But the farmer is no worse than other men. Few of us take more than a feeble and spasmodic interest in the things that concern us most deeply. Consider how speedily an audience vanishes whenever a speaker touches on education, a subject whose import is even weightier than irrigation.

"If man were a truly rational being the minute he learned that irrigation would double the produce of his farm, even in such a favored region as the Willamette valley, he would rush to build dams and dig ditches, but he doesn't. He waits until somebody has pushed and prodded him.

"Think how long it has taken some of the rural brethren to begin spraying their apple trees. They know that a few doses of lead arsenate would save their fruit from ruin and line their pockets with dollars, but not a drop did they spray until a paternal government stepped in and gave them no choice. As a race we are just as lazy and shortsighted as we dare be, and most of us would far prefer to swing a heavy sledge hammer 10 hours rather than think for 10 minutes.

"Such congresses as the one which will meet in Spokane next August are more valuable for reiterating old truths than for revealing new ones. Iteration is all that saves the world from a relapse into barbaric squalor. Hearing the truth about irrigation or anything else once only does us not the slightest good. We must hear it a thousand times and in every possible key.

"The Massachusetts savings bank insurance scheme was based on the supposition that when life insurance was made cheap and easy every person who needed it would step up and buy it. No madder dream was ever dreamed. The project has been open many months, but only two banks are offering insurance, and there is nobody to buy. To persuade us to insure our lives and save our wives and children from destitution we need a brazen-tongued agent to ring an alarm in our ears.

"Mankind is like the starving pauper who was on his way to the graveyard to be buried alive for his indolence. The merciful judge offered to suspend sentence if anybody would feed the condemned. A kindly farmer offered a meal of corn. 'Is is shelled?' inquired the pauper, with languid interest. No it was not. 'Drive on then,' said the pauper. We need such gatherings as the national irrigation congress to shell our corn for us.

"Civilization originated in countries where men were forced to irrigate the land or perish. In Babylonia and Egypt were laid the foundations of every science and all the arts. The reason is plain enough. Irrigation drives man to think and plan on the one hand and to co-operate with his neighbors on the other. The habit of thinking about one subject leads him to exercise his brain on others, and presently he discovers the great truth that ideas are upon the whole beneficial to him rather than baneful.

"Co-operation is the only way out of most rural difficulties, and it is easier in irrigated regions than elsewhere for divers reasons. One is that irrigation depends from the beginning on co-operation. But also the farms are necessarily small, people live near together, contiguity develops confidence, the plane of public intelligence rises, the communal consciousnss sets to work and presently the whole neighborhood studies, buys, sells and thrives as one man."

R. Insinger, chairman of the local board of control of the National Irrigation Congress, says that while the four primary objects are to save the forests, store the floods, reclaim the deserts and make homes on the land, other matters of importance to farmers, orchardists and fruit growers in general will be discussed by the foremost men in the country, announcing also that considerable time will be given to discussing problems in connection with the reclamation of swamp lands, good roads, deep waterways and better husbandry.

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With the Citrus Growers

THE FLORIDA GROWERS.

FOR two weeks California orchardists entertained about forty-five growers who came to this state from Florida to learn as to marketing methods. Often it was spoken of as a trip to gain information as to growing of oranges, but we note our Florida friends were somewhat sensitive on that point, at least a recent issue of the Florida and Produce News states that the only reason for the delegation going to California was to gather information as to the packing and marketing problems.

In any case Florida growers came and have been received, so far as we have heard, with greatest cordiality and shown everything in sight which California orchardists had to show. This committee has now returned home and are perhaps engaged in formulating reports which will be made to the convention which will be held in Tampa, June 1st. At that convention a large attendance from all sections of Florida is expected. It is hoped a co-operative marketing organization will be perfected at that time which will lead to more profitable handling of Florida citrus fruits.

The party which visited California consisted of Mr. and Mrs. L. B. Skinner, Dunedin, Fla.; Mr. J. W. Sample, Bartow, Fla.; Mr. and Mrs. W. B. Gray, Carney Fruit Co., Tampa, Fla.; Mr. and Mrs. E. Holtsinger, Swan & Holtsinger Investment Co., Tampa, Fla.; Mr. and Mrs. L. W. Tilden, Tavares and Gulf R. R., Oakland, Fla.; Dr. and Mrs. F. W. Inman, Florence Villa, Fla.; Mr. H. A. Ward, Winter Park, Fla.; Mr. W. S. Hart, Hawks Park, Fla.; Mr. and Mrs. J. J. Heartt, Arcadia, Fla.; Mr .and Mrs. David Scott, Arcadia, Fla.; Thomas B. Quinby, Jacksonville, Fla.; Mr. M. Carney, Summerfield, Fla.; Dr. O. W. Sadler, Tangerine, Fla.; Mr. A. C. Clewis, Tampa, Fla.; Dr. and Mrs. M. O. Terry, Fort Myers, Fla.; Mr. Charles H. Walker, Florence Villa, Fla.; Mr. and Mrs. H. E. Heitman, Fort Myers, Fla.; Mr. G. M. Wakelin, Lake Harris, Fla.; Miss Bell Inman, Winter Haven, Fla.; Hon. and Mrs. Thomas Palmer, Tampa, Fla.; Mr and Mrs A. G. Smith, Wauchula, Fla.; Mrs. F. H. Abbott, Fort Myers, Fla.; Mr. F. A. Lane, Fort Meyers, Fla.; Mr. and Mrs. Joseph Bumby, Orlando, Fla.; Mr. and Mrs. W. D. Taylor, Ocala, Fla.; Mr. C. H. Thompson, Winter Haven, Fla.; Mr. H. Guy Nickerson, Florence Villa, Fla.; Hon. and Mrs. W. W. Clark, Bartow, Fla.; Mr. Arthur R. Rule, Jacksonville, Fla.

Nearly all sections of Southern California were visited and especial attention was given to packinghouse equipment. G. Harold Powell of the Department of Agriculture and Mr. Burton of the Fruit Growers Exchange acted as guides and gave all possible information to the visitors. Packing houses were wide open to inspection and all members made free use of the courtesies extended.

In order to make the investigation as profitable as possible Dr. F. W. Inman, who was really the chairman of the committee separated the work into departments and appointed committees to investigate as to each line of work. For instance, there was a committee on finance, on legislation, on picking, packing, grading, transportation, machinery appliances, precooling, advertising, selling and distribution, fertilization, irrigation and diseases and pests

At some of the points meetings were held and addresses were made upon methods of packing, marketing and other matters of interest.

Conversation with Florida men showed plainly that they were a bunch of representative men of which any state might feel proud, and they were quick to express appreciation for the reception given to them in this state.

FLORIDA CONDITIONS.

From an interview in the Riverside Press with one of the Florida Committee we quote:

"There are three kinds of soil in Florida, hammock, clay and pine barrens. There is but little irrigation necessary, but wells are sunk in many orchards and pumping plants established. Water is found within 15 to 100 feet from the surface. Often irrigation is necessary only once or twice a year. The irrigation is usually in April or May.

"Practically all groves are adjacent to streams, rivers or lakes, and while we have some good shell roads in Florida, motorboats are used as freely as automobiles in Southern California. This makes two handlings of the fruit necessary, but even then it is not expensive.

"There has been started in Lee county the first big central packing house built in Florida. This will pack from groves from an area of 35 miles around, the fruit all being delivered at the house by water. The house is built on piles in the river with railroad tracks laid close to it. A precooling plant is being erected with the packing house.

"California has it over us in the marketing matter. Every grower now packs and markets his own fruit, but we plan an organization on the lines of the exchange, and hope that this will help us out of some of our difficulties.

"The base of Florida's orange industry has gone south 100 miles since the big freeze in 1895. California has another advantage over us because of organization. When we have a freeze everybody knows about it who reads the papers. When there is a cold snap in California the fact is carefully concealed and is only learned through private sources.

"The equipment in Florida and California houses does not differ much, the sizes being much smaller with us. At Sanford is a brick packinghouse entirely equipped by the California made appliances.

"We have some diseases and scale pests that California does not have to contend with. The witherleaf is one of these, causing the tender shoots to wither and the fruit to look as if tobacco juice had been squirted over it. It is a fungoid growth. Then a surface bark disease, is another trouble we have that I understand has never found its way to California. We do little spraying and no fumigation for scale pests, relying on the native parasites of the scale to keep them down. The white fly is the worst pest we have, and California is fortunate indeed in having so successfully ridden itself of the fly last year. The umbrella tree is a bad host plant

and should it again appear in California these trees should be carefully watched. Defoliation will not accomplish its purpose in destroying the fly unless the foliage is carefully burned. At Deland, Florida, live flies were found on leaves that had been several weeks from the trees."

TEXAS ORANGES.

It appears that upwards of 1,000,000 orange trees have been planted in Texas, which would occupy 10,000 acres at the usual rate of 100 trees to the acre. Most of these are said to be of the Satsuma variety, which has but very slight demand in the American market. This fruit is grown to some small extent in California, but scarcely, if ever, is shipped in carload lots. It is an early orange, ripening in Texas, it is said, in October and November. It is a small, flat fruit of Japanese origin, and of the Tangerine type, which is perhaps better known to California readers.

From all the information published regarding the planting of orange orchards in Texas it would seem that the investors are likely to suffer great disappointment when most of the trees come into bearing, for there is no probability that the market demand will ever equal the supply. The Satsuma is decidedly inferior to the navel or any other standard variety of the orange grown in California.

The Texas boom in orange planting seems to have been started and kept up by real estate agents with lands to sell. Although some astonishing figures have been given out as to the returns from certain orchards of Satsuma oranges in the Lone Star State, running up to $1,000 per acre, according to report, such statements must be taken with a great deal of allowance. Even if correct, they afford no basis for a reasonable estimate of what may be expected when a large acreage of the fruit comes into bearing. They probably apply only to orchards of an acre or two, and the sale of Satsumas in small lots affords no assurance of a market for hundreds of carloads.—Sacramento Bee.

Palo Verde Valley is to have a government town site platted.

CENTRAL CALIFORNIA CITRUS SHIPMENTS.

The growth of the citrus fruit industry in California for the past fifteen years has been of phenomenal importance to growers of this fruit all over the state.

In Southern California the total output during the season 1893-4 was 5,871 carloads, which was increased to a grand total of 29,497 carloads for the season of 1907-8.

Figures for this industry north of the Tehachapi are available only for the past seven years with only incomplete figures for the present.

The following table shows railroad figures for total shipments by carloads and total boxes shipped from points north of the Tehachapi.

Year	Total cars	Total Boxes
1902-3	1304	500,736
1903-4	1567	640,128
1904-5	1734	665,856
1905-6	1564	600,576
1906-7	2333	895,782
1907-8	3150	1,209,600
1908-9	1949	748,461

(1908-9 crop figures do not include the crop of Valencias which are yet to be shipped, and which are estimated at about 200 carloads.—Porterville Messenger.

GROUND SQUIRRELS.

The ground squirrel question is being handled in some sections and the Cultivator is receiving some suggestions. We give below hints from practical workers:

From San Jacinto.

I hope the new squirrel law will be enforced. Squirrels are not a quarter as hard to kill as gophers, their holes are always wide open, and they will eat most anything.

I have killed them in several ways, but I prefer the following. Rolled barley 2 parts, flour 1 part, powdered strychnine, mix thoroughly, wet with molasses and warm water, a few drops of oil of anise or bergamot is a help. A dessert spoonful in every hole you can find, for there may be several squirrels in one nest, and there are always other nests near, and they visit each other, and will get all the poison.

If you go around the next day and partly fill the holes, then go again the next day you can see if you have killed them, but unless all the squirrels in a mile are killed at once the holes are liable to be occupied again in a few days.

If people had any idea how many eggs squirrels carry off, and eat in the hens nests, the women and boys would be after them more.—N. D. McNeil., San Jacinto.

Hughson Stanislaus County.

I have killed scores of squirrels this spring. My remedies are the shot gun and steel rat trap. Have gun handy while working in the field so as to get them while off their guard. I shot several while working with the team by carrying the gun. When an opportunity presented itself I get the squirrel. In that way it is possible to get within close range.

The advantages of the steel trap are that it waits for the squirrel, besides it can be used indefinitely, Squirrels are sometimes shy of traps for a few days, but later become bold and get caught. By keeping traps persistently set in the entrances of the holes, I average 1 to 2 a week per trap.—James C. Fritts, Hughson, Stanislaus County.

DOUBLE SATISFACTION.

Nothing is more satisfactory than to be able to secure honest goods at fair prices. Nothing is more satisfactory than to deal with a merchant whose guarantee on some particular line of goods is an obsolute protection because the manufacturer of the goods stands back of the merchant. This is the case in dealing with those merchants who handle Rex Flintkote Roofing.

This roofing has been on the market for many years, and it is worthy of note that the merchants who handle it and whose endorsements have appeared in these columns are all enthusiastic believers in the quality of Rex Flintkote Roofing and in the fairness of J. A. & W. Bird Co., the manufacturers of this celebrated prepared roofing. We advise you to ask your dealer about Rex Flintkote when you need roofing. He may tell you there are cheaper roofings; but he cannot say there are better or more durable ones.

We advise our readers to send for "Rex Flintkote" booklets to J. A. & W. Bird & Co., 00 India St., Boston, Mass., and not how this firm does business.

All About the Orange and Lemon

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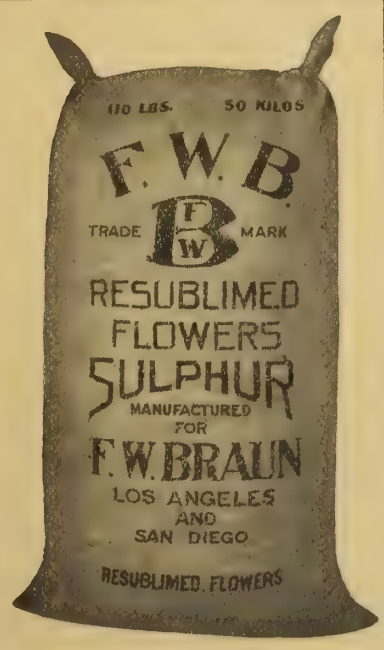

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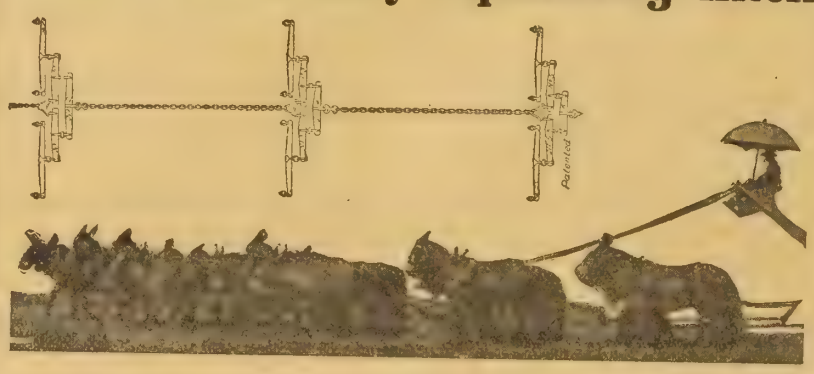

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By J. W. Mills

THINNING FRUIT.

IN fancy fruit-growing, the necessity for thinning will become more and more apparent as the acreage devoted to orchards increases and competition becomes more keen. While the wisdom of thinning peaches is no longer doubted, the growers are not so willing to take up systematic work in thinning apples and pears. But the time is coming when the fruit-grower will be forced to conclude that it no longer pays to grow poor fruit. Even now, the years that the grower makes a profit in shipping choice fruit, are the exception rather than the rule. There are but few localities where choice fruit cannot be grown, and wherever shipped, such fruit must generally compete with the home-grown product. On the other hand, localities where strictly fancy fruit can be grown are limited, and competition in this class is more impartial. The competition is between localities which are probably equally distant from the market, and the one producing the best fruit is the successful competitor.

To a certain extent, pruning is a method of thinning, but it will not take the place of hand-thinning entirely. The production of a fancier grade of fruit is not the only benefit derived from thinning; it encourages more regular bearing; lessens the loss from the breaking of limbs and gives the grower a chance to destroy insect infected fruit and thus check the spread of insects early in the season. The tree that has been properly thinned should produce a good crop of fruit buds each year, and if it has been properly trained and thinned it will never need a prop. While many have observed that apple and pear trees are inclined to bear alternate years, probably few understand the cause. Fruit spurs with terminal fruit buds, as those of the apple and the pear, generally bear only alternate years, and if the spurs are all full of fruit one year, the next must be an "off-year," as we say. Not only do the spurs fail to bear annually, but if the tree is overloaded, spurs that produce bloom, even though they fail to set fruit, may not be sufficiently nourished to produce fruit buds for the following season. If the tree bears only a moderate crop of fruit, spurs that produce bloom but no fruit, often develop fruit buds the same season. Where the tree is bearing a light load, spurs may mature fruit and develop fruit buds the same season. Varieties differ and, while some are regular bearers under almost any treatment, others show a stubborn inclination to bear alternate years. After the old tree has fallen into the habit of bearing alternate years it is no doubt harder to get it back to a regular bearing habit. "Off-years" are not uncommon with some of the fruit trees bearing from axillary fruit buds, but it is not so pronounced as with the apple and pear.

Thinning the Apple.

Fixed rules to be followed in thinning are hard to give. Much depends upon the general thrift of the trees, and, as in pruning, the grower will have to learn much by experience. If we thin to encourage annual bearing, it will be seen that all the fruit must be removed from some of the spurs and, at the same time, the number of fruits remaining must be reduced to such an extent that the tree is no overburdened. Some thin to leav the fruits so far apart, but a rule fix ing a certain space between apple will not hold good in all cases. If w were always sure the tree had bee properly pruned, we might be able t give a satisfactory rule to be follow ed, leaving the fruits so many inche apart. A plan the writer has trie and found very satisfactory is to s thin as to have a certain number o boxes of fruit on the tree. Suppos you decide that the trees should pro duce ten boxes of fancy fruit each. A fairly uniform grade of apples ranging from two and one-half to three inches in diameter will pack about 150 to the box, and by thinning two or three trees and leaving the 1,500 apples, actually counting them or estimating them as closely as possible, one learns what a tree properly thinned should look like. With these trees as a model it is surprising how close one can come to leaving just the right number. I think it is possible, by careful work, to come within a box of the ideal. But knowing how much the tree should produce is where the experience counts. Not many varieties of apples will require much thinning before they are ten years old, and at this age the average tree should produce about eight boxes of fancy fruit; some will produce more and some less. After the tenth year a gain of a box per year would be a conservative estimate. Of course, the yield will vary under different conditions; and, while this is not a rule that can be implicitly followed, it is surely more accurate than thinning to a certain distance. The thinner first removes defective or wormy specimens, and he should be supplied with a bag to carry the wormy ones from the orchard to be destroyed; then those from the tips of the limbs may as well be removed for they seldom make fancy fruit; and, if possible to do it and leave the required amount, thin to one fruit on the spur. June and early July is the proper season for thinning apples and pears. Experiments have shown that it pays to thin apples. The fruit is improved in both size and color; the trees bear more regularly, and trees that may break under heavy loads are saved. Some say it is expensive to thin; but, if one stops to think, it really costs no more to pick fruit in June than it does in October. A man can thin from ten to fifteen twelve-year-old trees per day, and the actual cost of thinning should not add to exceed two cents per box to the cost of production. It is true that the results the first season are often disappointing, for an unthinned tree may produce sixteen boxes of fruit that will grade 50 per cent fancy, while the thinned tree of the same age only produces ten boxes that will grade 95 per cent. fancy. It hardly seems profitable, but the next year will tell, and it is safe to say that two years running the thinned tree will produce as much fancy as the unthinned tree will produce of both fancy and choice.

Thinning Pears.

Methods of thinning pears differ little from methods of thinning apples; the principles are the same. As a rule the pear tree will produce about as many boxes of pears as will the apple tree of the same age produce boxes.

(Continued on Page 607.)

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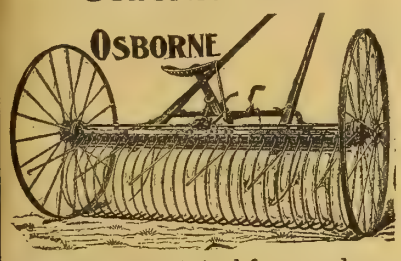

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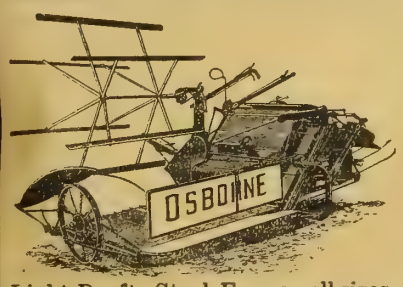

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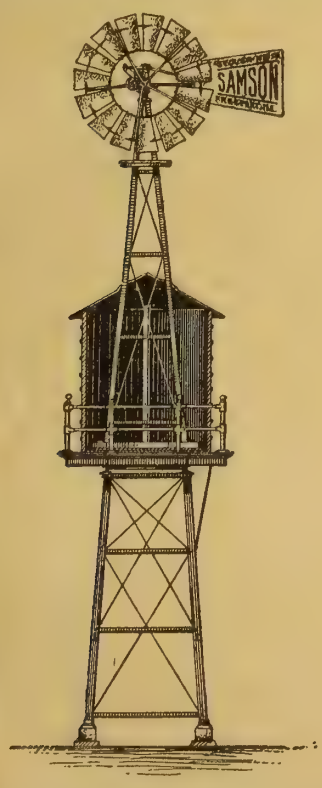

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Small Fruits and Vegetables

BACTERIOSIS OF BEANS.

FREQUENTLY the foliage, stems and pods of the common and Lima bean, are preyed upon by a bacterial disease, Pseudomnas phaseoli (Smith), known as Bacteriosis. The symptoms are such as to make it readily distinguishable from all other maladies to which the bean is heir.

There appear on the different parts of the plant, especially on the leaves, large, watery, brown patches or blisters that soon dry up and cause the tissue to become brittle and to curl, leaving the foliage ragged and good for nothing. The pods seem to furnish the best food supply for the microbes and it is here that we find the disease at its best. Small discolored spots appear at first, which spread very rapidly and produce large lesions with pink or reddish brown borders, and which have pale yellow or amber colored crusts over the affected areas. This crust is due to the accumulation of myriads of amber colored bacteria which have formed a layer over the broken down tissue. After a time the pod rots and the beans are worthless.

Warm, wet weather seems to favor the disease, for the germs grow best under these conditions, and the beans at this time produce succulent growths, which are more readily attacked. Rain and dew are doubtless agents in spreading the germs from one part of the plant to another by washing them from old lesions onto unaffected parts. Insects play an important part in disseminating the trouble, consequently any measures which tend to check these pests will aid in controlling bacteriosis. The distribution of the disease is further effected by dead vines and leaves carried on the wind; by the soil, and through the seed. New land which has never grown beans seems to be freer from the disease than old, and should always be used when available.

The seed used in planting should be selected by hand and all the lighter ones discarded, since experiments show that diseased seeds are less dense than sound ones. As yet no satisfactory method has been found which can be recommended for treating the seed to destroy the causal microbe which does not lower the viability of the seed.

Inasmuch as the germs of bacteriosis work on the outside of the plant, it is possible to reach them with a fungicide and spraying with Bordeaux mixture upon two and three-inch plants, followed by the same ten days later and again after blossoming. Dr. Halstead uses a Bordeaux mixture of the following strength: Copper sulphate, 6 pounds; lime, 4 pounds; water, 60 gallons.

Variety tests conducted by the New Jersey Experiment Station during the three years 1897-1899 with Green Flageolet, Currie's Rust-proof, Early Mohawk, Golden Wax, Extra Early Refugee and Saddleback Wax, showed the Green Flageolet the most susceptible, and the Early refugee the least.—Walter G. Sackett, Colorado Agricultural College.

RED RASPBERRIES.

A most delicious table fruit for sauce and "short cake"—and what farmer does not like "short cake"—is the red raspberry, just as good as the strawberry, says the "Farmer and Stock Grower," The same rule for growing the reds, so far as location, soil and the preparation, applies here equally with the rule for blacks, or with any crop. It is, however, found that the reds will do fairly well on a sandy loam with clay subsoil. So, if your raspberry lot is sandy, try the reds. With us, the Cuthberts are the favorites for all purposes possible—a good firm berry.

The group includes varieties which bear fruit of various shades of red, amber, yellow and purple. It is known to botanists as Rubus Strigosus. The fruit is generally red. It is a type more hardy than the Black Cap, the canes are upright, and the bark is of a light brown color. The method of propagation is different than with the blacks. The method is from root sprouts, grown one year and transplanted the next. Young succulent sprouts containing a portion of the mother root grow rapidly, but the safest way is to use the year-old plants. Of course, if you are a new beginner, you must get plants from a nursery or a grower. Be sure and get good plants with fine fibre roots. Don't let any one sell you poor plants if you wish to succeed.

The distance for planting depends very largely upon the purpose for which the plantation is intended. Three by three feet and three by four feet will give you room to cultivate. If you are only to garden it, it sometimes becomes desirable to combine in the same plantation other small fruits. This plan is not objectionable to the one who has little room or a small family to supply. Under these conditions plant distances may be lessened. Raspberries may be used very nicely as fillers between rows of peach, plum, pear or apple trees. If it is intensive farming you are practicing, try this plan. Much pains must be taken in handling the plants for selling. They are tender and easily injured. Lay them in a furrow made by a spade, the roots spread against the land side, as it were, firm the earth back carefully and they will come up straight. No need of any more care—only good cultivation.

The reds require pruning at two seasons—summer, during growing season, and winter or late fall—for the purpose of eliminating the canes which bore fruit. The summer pruning is to stop the young shoot at a growth of eighteen inches, inducing them to throw out side shoots.

But I may weary you with too many rules. Use your own good judgment in many things, but once again, grow some red raspberries.

CONTROL OF WEEDS BY SPRAYS.

Continued from Cover.)

the weeds will shed the drops without any damage being effected. Large drops strike the leaf and roll off; small drops run together and form large drops, but a mist from a good sprayer settles down upon and completely covers the leaves.

Spray on a bright, warm day, or on a dark, damp day; it does not matter so long as rain does not come within 18 or 20 hours. Spraying on dark, damp days gives quickest and surest results. Spraying on bright, warm days must be followed by dew the next morning to be effective.

The white coating, or spots, seen on leaves sprayed dry, warm days, is the dried out sulphate of iron; the dew dissolves this so it acts on the leaves.

It was formerly thought that the best time to spray was when the mustard plants were in the third or fourth leaf; now we know the best time is when the first buds appear on the majority of the plants, for then only is practically all the mustard seed in the soil germinated. To do the best work, apply 52 gallons to the acre.

To make the spraying solution, empty a hundred pound sack of the sulphate of iron into a kerosene, whiskey, or vinegar barrel, fill to the chine with water and stir with a hoe for a few minutes until dissolved. Strain through several thicknesses of cheese cloth tacked over manhole of the spraying machine.

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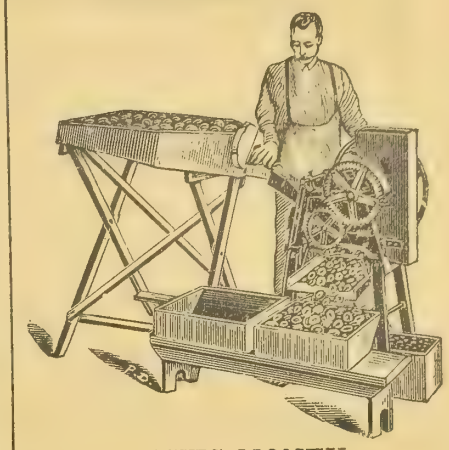

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Peterson & Emmington	Suisun	23.00
Lewis Hildreth	Talmage	90.00
Wm. Richardson	Tomales	100.00
John M. Cerini	Tomales	100.00
James McIver	Truckee	90.00
Geo. Vogelsaug	Tehama	75.00
Wm. Humphreys	Tudor	150.00
Frank Dias	Turlock	43.00
Jno. F. Selvera	Turlock	100.00
Jno. S. Gabriel	Turlock	100.00
Albert Fliflet	Turlock	50.00
Joe Enos	Turlock	30.00
E. H. Whiting	Turlock	50.00
G. Alexander	Turlock	100.00
W. D. Adams	Turlock	40.00
Manuel F. Preiva	Turlock	100.00
Joe Lewis	Turlock	50.00
O. J. Wideberg	Turlock	35.00
Joe R. Fernandez	Turlock	30.00
Joe Joseph	Turlock	27.90
Herman A. Reinan	Ventura	100.00
O. A. Wadleigh	Ventura	100.00
A. B. Hauser	Volta	150.00
E. Pedrotti	Waddington	24.00
Ulrich Campaul	Waddington	12.50
Horace Pedrotti	Waddington	30.00
F. A. Emery	Winsor	50.00
H. C. Stohlman	Yuba City	235.00
H. G. Heidrotting	Yuba City	75.00

References—National Bank of California, Los Angeles; Security Savings Bank, Los Angeles, First National Bank, Oakland; or any reliable bank in the State. Or any of the above members, all of whom have been paid losses by this Association.

Home Office, 608-9-10-11 First National Bank Building, Oakland, California

M. L. Wright, President and General Manager

Live Stock and Dairy

By Mrs. Minna E. Sherman

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

OUTSIDE.

SPRING with its bright flowers and abundant green grass is here. The hay is cut and the teams at work hauling it in to the barns. One field has on half of the thirty acres, five tons to the acre of barley. While the second half borders on the line of a neighbors, who is the man that will not annoy the squirrels by smoke or poison. This year after the barley was too high to see the little rascals they moved in and went to housekeeping and reduced the hay on a part of this land to about two tons to the acre. The value of little things on a ranch makes large holding less profitable than the smaller place where every corner can be watched and cared for in due season. The Bible tells of the mischievous "little foxes." In the human family they certainly mar a person's usefulness by some trifling manner or little habit that could easily be corrected. Squirrels have marred the barley hay this year, and only a few to work the damage. This week will end their life history for George is unhappy to think he did not find them when out last time with the smoker.

Calves.

In the Spring comes to many a man and woman a mania for making garden or for keeping a cow. Nature's striving to waken a sleeping world stirs in them new life. It is good for people to wake up if they will stay awake and not when the midsummer madness strikes them fly off to some new toy. Steady, steady, steady! Is a good word to apply to all our pursuits for it is only old Steady not Fliberty gibbets that wins out in the end. The Spring time brings a crop of calves in time to fight flies and be generally miserable. The happy time for a calf to be born is in the fall or early winter for then much of the troubles of his little life will be held in check by the cooler weather. All the little bugs, lice, flies and mosquitoes are not lying in wait to suck his innocent blood. A poor little thin calf tied to a stake by the road side is a common sight at this time of the year. These calves are too young to eat grass and are cheated out of their natural food by the family—that takes the milk. It is better to treat these calves as the city milk men do, that is end their innocent lives rather than give them no care. While calves can be successfully raised with little or no milk it requires care and someone to make a business of feeding them. When a calf is hand raised it usually falls on a woman to do it, often one already overburdened with work.

Stables.

The calves should have in the summer time a good shed well opened to the air and screened to keep out the flies, the floor tamped with oiled clay and several inches of clean sand on top to catch moisture. The sand becomes valuable as a fertilizer. The sides and ceiling are whitewashed and sprayed often with a cheap coal oil derivative. While carbolic acid is good to add to the whitewash it is not as good a destroyer of many of the bacteria as creolin and others of the petroleum by-products often cheap and prepared for the stock man. A barrel of one of these should be purchased for daily use for one never knows when it will be needed. Stables cannot be fumigated with any degree of success as the sides are not close enough to hold gas. Spraying is, therefore, the only perfect way to disinfect them completely and cheaply

Scours.

When scours attack the calves it must be promptly stamped out by disinfecting the buildings and surroundings. The land can be purified by the sun and wind, plow it up and sow crops that entail close cultivation and working of the soil by turning it over and over during the season. After a case of scours, no matter how well the calves recover they will never be safe until this is done. The germs will be in waiting for a favorable opportunity to develop, whenever they find a subject that is not immune. How shall the calves then best be made immune? By making their conditions healthy. The milk must be fed warm and clean. The pails must be kept perfectly sweet by giving them the same treatment that the cream cans and separator receives, washing and steaming them until their condition is one of perfect cleanliness. These cow babies need to be tenderly looked after if they are to remain healthy and to develop into vigorous cows.

Treatment of Scours.

Prof. Humphrey of the University of Wisconsin treats scours successfully by giving to the sick calf four tablespoons of castor oil in half a pint of warm milk. In four to six hours give one teaspoonful of a mixture of one part salol to two parts of sub-nitrate of bismuth. This is mixed in half a pint of warm milk, or it is placed as a dry powder on the back part of the calf's tongue and washed down with the milk. On the ranch olive oil is often used; half a pint mixed into an emulsion with two eggs. In two hours follow with half a pint of new milk with two eggs, yolk and white beaten up in it. Repeat either or both as often as necessary, to correct straining. If the calf is simply weak, new milk well warmed with a rennet tablet added is given. One rennet tablet or junket tablet is dissolved in a little warm water and added to the milk just before giving it to the calf. Junket or rennet tablets are sold by the grocers at ten cents a bottle. The scours rise from disordered stomach and constipation, watch them carefully and give them oil if needed without waiting for other troubles to manifest themselves. Newly dropped calves are often infected through the naval cord. It is well to use bichloride of mercury (corrosive sublimate) tablets. These come ready to be dissolved in water. Wet the navel cord of the newly born calf or colt with it thoroughly. A certain way to kill a calf that has scours is to give it laudanum or paregoric. I never knew one to recover that had been given a dose of either of these medicines. Put away the soothing syrup and paregoric bottles, if you have not courage to dump them into the drain, for they are not good for babies either human or bovine.—M. E. Sherman.

Future Citizens of Kerman, California

J. W. Brooks, J. B. Beardorff, J. W. Lamb, J. W. Cook, E. M. D. Smith, C. E. Wells, C. F. Anderson and L. W. Brooks, all of Towner Co., N. D. Together they bought 220 acres of land March 18, and will help to make Kerman the richest colony in California.

Do You Know

That the east is burning up with land hunger? That productive lands are getting scarce and hence higher? Do you know that the people east are just beginning to find out that there are agricultural lands in California and hence that we are on the eve of the greatest emigration movement California has ever experienced.

Do You Know

That as a consequence it behooves all who are landless in California but who hope sometime to enjoy the blessings of a landed home, to get busy and to secure the home before the other fellow gets it, and before prices have advanced to where they are prohibitive? That the easterners who are coming here now are astounded with the agricultural possibilities of "New California?" That they are buying themselves, and then going back home spreading the news of their find, and inducing others to come?

Do You Know

That ere long the man who owns productive land here will discover its value, and will refuse to part with it at several times the amount it now takes to "lift" it, and that when that time comes it will be everlastingly too late for many.

Do You Know

That the value of land depends upon what it will produce per acre? That land on the **Kerman Tract** is today the cheapest land in the United States, value of possible products considered? That this fact is becoming known, and that it is bringing more people here than have ever come to any other similar tract in the same length of time?

Do You Know

That the **Kerman Tract** excels when it comes to water right, quality and lay of soil, natural drainage, location, and in possibilities for fruit and alfalfa growing, dairying and poultry raising? That it is unsurpassed, if equalled, in the things that go to both home and money making? That it is being populated by the very best quality of people, the cream of the country? That undesirable people are not allowed to buy land here and that those who locate are protected against the scourge which has ruined so many otherwise promising colonies in California? If you do not know these things now

We Are Telling You

And we ask the privilege of further informing you. If you are interested we would like nothing better than the chance to satisfy you upon all these points, either by correspondence or by showing you over the tract. We consider it a pleasure to show interested visitors over the colony, and all comers are accorded courteous and considerate treatment. Our circular explains in detail what is here, and it is free for the asking. Write for it, and do it now. But, what is better, come here and satisfy yourself that the **Kerman Tract** is as represented, and that you are not missing something that cannot be retrieved by not taking advantage of this opportunity now. Either write to

Carnine & Storgaard

General Sales Agents

Kerman, California

Or call at one of the following offices:

Fresno Irrigated Farms Co., 505 Kohl Building, San Francisco, Cal.

Fresno Irrigated Farms Co., 553 So. Spring St., Los Angeles, Cal.

Dodd & Neu, 520 San Pablo Ave., Oakland, Cal.

H. J. Young, 222 Globe Building, Seattle, Wash.

Making Irrigation Ditches by Machinery on the KERMAN TRACT

On this tract, and in two months, over 6,000 acres of new land was put under water, and into fruit, vines and alfalfa.

The Aristocrat of Moderate Priced Cream Separators

We are often asked the reason for the great success of the

United States Separator

In a nut shell it is this:

U. S. Cream Separators are made of the best material, are most thorough in skimming and most durable in wearing qualities.

Every UNITED STATES owner will stand back of these facts.

In every line there is one best. Why? Because that one is the standard. So it is with Cream Separators, the **United States** is the **Standard Cream Separator.** Many thousands being operated in all dairy sections have established its value.

Promises and performances. There are cream separator manufacturers that promise great things—on paper—but in actual daily use their machines cannot fulfill their glaring claims.

When some glib salesman claims he has something equal to the **United States,** make him show you proof. *It is one thing to make a claim and another thing to prove it.*

The United States has the proof. For it ***Holds the World's Record*** for closest skimming in fifty consecutive runs, covering one month, at the Pan-American Exposition from the milk of ten different breeds of cows, a record never having been equalled.

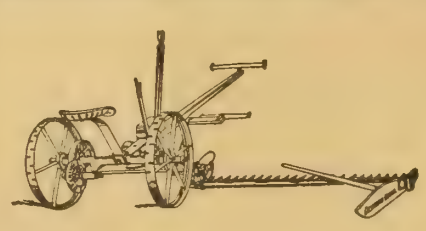
Before you decide examine the **United States** carefully. Ask any of the thousands of satisfied users and get their verdict, then have a **United States** selling agent place a **United States** in your dairy on free trial and it will prove all claims.

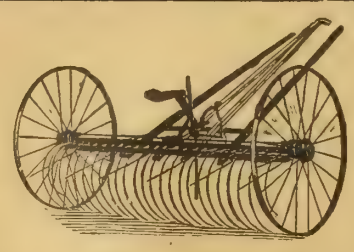
In the meanwhile send for illustrated Catalogue No. 20

VERMONT FARM MACHINE CO., Bellows Falls, Vt.

M

Prompt Delivery Assured California Customers from Stockton warehouse. No delays. Address all letters to Bellows Falls, Vt.





Seasonable Goods

Of special interest right now, are our Harvesting Machines, Hay Tools and Hay-Presses. We have made it our business to get hold of the best in these lines. We especially call attention to the following:

Deering Ideal Mowers; perfect shear-cut, ball and roller bearing—nothing better made.

Deering Ideal Self-Dump Rakes; strong, durable—fiirst class in every particular.

Dain Buck Rakes and **Stackers;** scores in use in Southern California. They are built right and will positively carry the teeth off the ground when heavily loaded. Power lift—easy to operate.

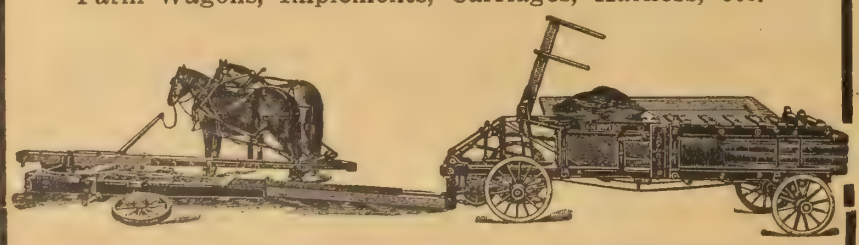
Southwick Hay-Press—without question the best horse-power press made. Many of our customers have averaged 30 tons per day or better for entire seasons' runs. We also have the Sandwich Engine power Belt Presses—of wonderful capacity. Smaller Presses, too—all steel, self feed.

See us or write us today.

Hawley, King & Co., Gen'l Agents

224-228 South Los Angeles, St., Los Angeles

Farm Wagons, Implements, Carriages, Harness, etc.



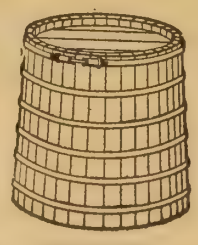
Tanks Tanks

WINDELER'S PLANING MILL AND COOPERAGE

GEO. WINDELER, Prop

Water Tanks, Wine Tanks made from carefully selected stock by careful and experienced workmen. "Tanks that are well made last a long time." It will pay you to get my prices before buying.

Geo. Windeler



Wine Tank **144-154 Berry St. San Francisco, Cal.** *Water Tank*

TEACHING A FARM DOG.

A good collie will be ready to begin to learn to drive sheep at about three months of age. He should be taught wholly by one person.

First teach him to lead, placing a string about his neck. He will soon learn not to try to get away and to come on hearing the word "Here," or whatever word is chosen, pulling on the string until he learns to come promptly.

Lessons of half an hour a day are enough and this first lesson should be learned very thoroughly, so that the dog will come from any part of the yards instantly on hearing the word.

Next he learns the meaning of the word "Go" by using the word when sending him through an enclosure, continually repeating the lesson until he acts promptly.

As a part of this lesson he should be taught to stop anywhere on the word "Halt," emphasized at first by pulling on the string, which should still be attached to his neck.

The word "Ho" is also used by some trainers to indicate that the teacher is through with him for the time being and the dog soon learns to understand it.

While driving sheep it is convenient to have the dog understand the word "Speak," which means that he is to begin barking, and he can be taught the word very easily by holding up something which he wants to eat and using the word.

The meaning of "Out" is easily taught when the dog is in the house, by opening the door and pronouncing the word.

After this preliminary education he may go out with an old trained sheep dog. By running with him, the pup will soon learn much about the business, but should be watched to see that he does not try to go to the heads of the cattle.

After letting him try with the older dog for a few times he should be taken to the sheep or cattle without the other dog.—Texas Stockman.

DAMP STABLES.

Damp stables are caused by a lack of sufficient circulation of air to take up the moisture. When the barber wishes to dry your face quickly, he uses a fan to circulate the air about your face and thus take up the moisture. Every cow is throwing off from seven to ten pounds of water every 24 hours. It will condense on cold walls unless sufficient fresh air is circulated through the stable and often enough to dry it up. There is no other way to take up this moisture or prevent it.

In regard to the temperature of a stable, keep it at 50 to 55 degrees. But in all these things a stable must be properly ventilated and there is no other system which fills the bill all around like the King system.

KALE FOR MILCH COWS.

Kale contains 2.05 per cent. digestible protein, 8.2 per cent carbohydrates and .04 per cent fat; corn silage contains .95 of 1 per cent digestible protein, thus you see that kale from the protein standpoint is twice as rich as corn silage. Forty pounds of kale with 15 pounds of good vetch or alfalfa hay will make a fair ration for a cow giving an ordinary flow of milk; this with four or six pounds of mill feed will make an excellent ration for a cow yielding a large amount of milk.

Reports continue to come in that are favorable to Arabian alfalfa.

ABSORBINE

Will reduce inflamed, strained, swollen Tendons, Ligaments, Muscles or Bruises, Cure the Lameness and Stop pain from a **Splint, Side Bone or Bone Spavin** No blister, no hair gone. Horse can be used. **Horse Book 2 D free.** $2.00 a bottle at dealers or delivered.

ABSORBINE, JR., for mankind, $1. Reduces Strained Torn Ligaments, Enlarged glands, veins or muscles—heals ulcers—allays pain. Book Free.

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Cure That Horse With Tuttle's Elixir

Lame horses Veterinarians have given up and which other preparations have failed to help, have been cured, made as sound as a dollar, with Tuttle's Elixir. It produces better results than anything else because it acts on a different principle. It is something more than a mere liniment. Let us explain and show you the proofs of its value in cases of Curb, Splint, Spavin, Sprains, Swellings of any kind. Also for internal ailments.

Horse Doctor Book Free

Write for it today. 100 pages, illustrated, filled with information valuable to every horse owner. Dealers keep Tuttle's Remedies. Don't experiment. Get Tuttle's.

Tuttle's Elixir Co.
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Anthrax and Blackleg
VACCINES

Are given the preference by 80% of California stockmen because they give better results than others do.

Write for prices, testimonials and our NEW booklet on Anthrax and Blackleg

The Cutter Laboratory
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Three Stroke Self Feed Hay Press

Two men can run it. All steel and iron. Smooth bales. Easy draft. Satisfaction guaranteed. Free trial. Ask for Catalogue 28.

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Petaluma, Sonoma Co., Cal.

HOLSTEINS

We Have For Sale a Number of Registered Young Bulls and Heifers **$100**

All our stock comes from the celebrated herd formerly owned by the Pierce Land and Stock Co., the premium herd of Holstein Friesians in California. **Oakwoods Stock Farm Co., Lathrop, Cal**

The Whiting Jersey Stock Farm Company

Is making the very best strains of blood fresh from the island of Jersey a specialty.
Whiting Jersey Stock Farm Co. Heber, Imperial Co., Cal

Hay For Sale. Buy your hay in car lots. Special attention given to supplying alfalfa to dairies.
E. R. LONG
Bakersfield, California

John Lynch Breeder of Registered **Shorthorns**
MILK STRAIN
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Berkshires--Shorthorns

My Berkshires took 9 First, 6 Second and 4 Third Prizes and both Gold Medals. 50 Head For Sale.
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Registered A. J. C. C. Jerseys

St. Lambert and Flying Fox Blood. Margery Golden's Fox heads the Herd. Young stock for sale. GUY H. MILLER, Prop., R. 3, Modesto, Cal.

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Thoroughbred Holstein Bulls and Heifers
Thoroughbred Berkshire Boars and Sows

The Schmeiser Portable Automatic Derrick

Comes nearer stacking hay without assistance than any other Derrick in the market.

Write for descriptive circular today and we will tell you how it can be done.

Schmeiser Manufacturing Co.
Davis, California

General Agriculture

THE MERRY COUNTRY MERCHANT AND THE MAIL.

Oh! lightsomely it's said that if he's
to earn his bread,
And pay his debts in season without fail,
The merry country merchant, be his
needs never so urgent,
Must not send his parcels through
the U. S. Mail.

Unless he pays Express rates on packages, I guess
(Tho' extortionate enough to make him pale
Like Death on a white horse), it'll follow in due course.
He'll be bankrupt and forever ever fail.

For the press still says "That's so,"
and of course it's all "no go,"
For a verse-maker 'gainst editors to rail;
And these ink-slingers all swear that our Congress dassent dare
To kill kind country merchants with cheap mail.

My! wouldn't it be awful if they could not get their craw full
Of gold dollars farmer-earned at the plow's tail!
So scrub politicians' jawful of fool talk says it ain't lawful
To carry farmers' parcels cheap by mail.

On their sending to Chicago must be put a strict embargo
And big tax of 16 cents per lb. by mail;
But the farmers only laugh at such silly d*** f*** chaff
And purchase thrice the goods by freight per rail.

For they get them at less cost than they would by parcels Post
In spite of all this silly, silly wail
Against the introduction by our Congress of instruction
To reduce the rates on parcels thro' the mail.

Then, my merry, merry merchants, won't you join with us insurgents,
And boost the Parcels Post at which you rail?
Stop your free "ad" of Chicago?—Save your big pay to Wells Fargo?
Won't it help you, too, to get goods cheap by mail?

If you must be small and narrow,—why,—haul your freight in a wheel-barrow,
Or pack it on a sheep with a broad tail.
If wise, just make concession! Keep up with the procession!
Americans! Have faith in your own Mail!

—Edward Berwick.

HOW TO PREVENT LAND FRAUDS.

Advocates of the Torrens system of land records in Chicago are pointing out that a repetition of the Van Vlissingen colossal mortgage forgeries in that city would be rendered impossible were the Torrens law of transfers generally invoked. In Illinois, according to the Appleton (Wis.) Post:

"The Torrens system provides for the title to real property being determined by a state court, and if found good, being guaranteed by the state, which issues as evidence of it, in the place of a deed—a certificate of stock. When property is sold the certificate is indorsed over to the purchaser. The purchaser takes it to the recorders' office, where the certificate is canceled and a new certificate issued in its place in the name of the purchaser. There are no abstracts. The certificate carries with it the state's guarantee of absolute title. When a man wants to borrow money on his property, under the system he puts up his certificate as collateral security and that is all there is of it. There is no mortgage."

One inferential objection voiced by the Evening Wisconsin is that in a comparatively new country like Australia, which originated the system, its adoption did not involve a revolution. The trouble with the law in Illinois is that its adoption is optional with property owners, and the abstract companies, as in California, control enough members of the legislature to prevent the Torrens system from becoming too popular by removing certain drawbacks. One feature, not yet included in California, is the state's guarantee that the title is perfect, a defect that Senator-elect Thompson of a local title and trust company should be invited to cure by a senate bill at the coming session of the legislature. It is certain that with the Torrens system in use the people in this county would save thousands of dollars annually, besides making it an easy matter to negotiate a loan. A Torrens land certificate with the title guaranteed by the state, as in Illinois, would be as good as a bond and as acceptable for collateral as a bank note. Forgeries of the Van Vlissingen type could not be practiced.

But, alas, the system is too simple, too economical, too convenient to hope for its general adoption. The opposing interests would never consent to be put out of business without striking a terrific blow for their abstract books, their guarantees and their fees. When we get honest tariff revision we only get the Torrens law. —The Los Angeles Graphic.

Apricots at Biggs will be short crop, all other fruits large.

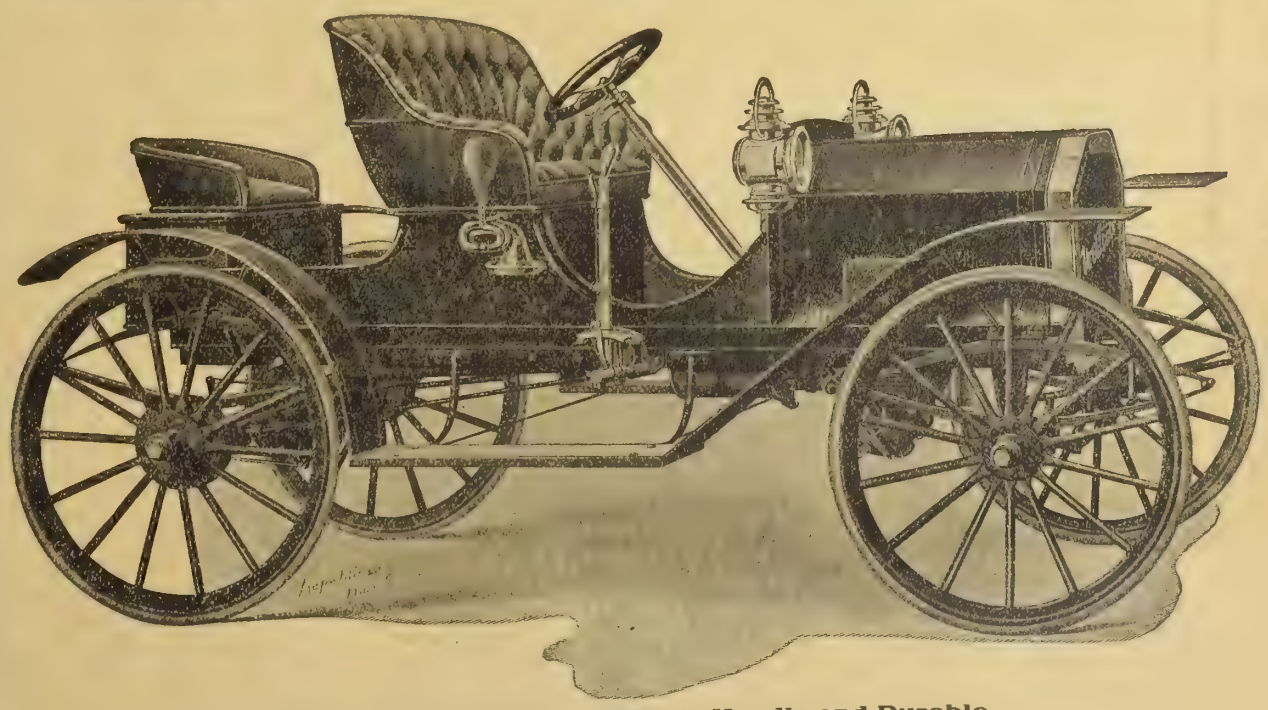
STATE FAIR.

Agricultural Park at Sacramento is now a very busy place. State Engineer Ellery and his staff have lost no time in getting to work on the new buildings at the State Fair grounds, and are now busy on the three structures that are to form the outlines of the grand court which it is intended to have open to the view of visitors from the main entrance of the park.

With the splendid new buildings, a complete water system, and some comprehensive landscape gardening, Agricultural Park will be an attractive place, and will prove as instructive as interesting. The fact that one admission will take the visitor to every portion of the show will prove an inducement to attend the coming fair, which even this early gives promise of being a record breaker.

The May issue of the Dairy Bulletin, published by the Vermont Farm Machine Co. to make better known the merits of the U. S. Cream Separator, is an unusually interesting and informative publication. Beside being well illustrated with half tone engravings, there are several well written articles that will appeal to every farmer and dairyman, (owners of Guernseys will be particularly interested in this issue) besides complete descriptions of the various models of U. S. Separators. A copy of this publication may be obtained free for a post card requqest by addressing the Vermont Farm Machine Co., Bellows Falls, Vt.

WESTCOTT AUTOMOBILES



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An Elegant Car with Easy Riding Qualities Unsurpassed.
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Shaft Drive, 90 inch Wheel Base, extra Road Clearance, Artillery Wheels with heavy Sidewire, solid Rubber Tires, High Grade Essentials and Details. Single Rear Seat or Double, as wanted.
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California Cultivator

ESTABLISHED 1889

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733 Merchants' Ex. Bldg., San Francisco.

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S. A. PEASE - Plant Diseases and Injurious Insects
MRS. FRANK METCALF - - - Poultry

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Contents

CONTROL OF WEEDS BY CHEMICAL SPRAYS. Cover.
NATIONAL IRRIGATION CONGRESS, 587.
CITRUS.—The Florida Growers; Florida Conditions; Texas Oranges; Central California Citrus Shipments; Ground Squirrels, 588, 589.
DECIDUOUS.—Thinning Fruit, 590.
VEGETABLE GARDEN.—Bacteriosis of Beans; Red Raspberries, 591.
LIVE STOCK AND DAIRY.—Outside; Teaching a Farm Dog; Damp Stables; Kale for Milch Cows, 593, 594.
GENERAL AGRICULTURE.—The Merry Country Merchant; How to Prevent Land Frauds, 595.
EDITORIAL.—Alfalfa; Hardwoods in California; Cooperate; Country Life Boosters; Wrong Impressions; Automobile Impudence; Irrigation Congress; Farmers Institute Workers, 596.
AGRICULTURAL NOTES OF THE PACIFIC COAST.—Northern, Central, Southern, the Coast, 597.
POULTRY.—Poultry Industry of California; Roup; Losing Feathers; Feed for Young Turks; White Guinea Eggs; How to Fail With Poultry, 598, 599, 600.
QUERIES AND REPLIES.—Government Land in Colorado; An Acre; Fungus Blight on Sycamore; Burning Charcoal; Wax for Wounds in Trees; Pomona Journal of Entomology; Oil Stains on Carpet; Time to Plant; Fertilizing; Onions from Seeds and Sets; Sulphuring Grapes; Mildewed Peas; Cheese from Two Cows; Avocado Leaves; Powdery Mildew; Diseased Apricot Leaves; Experience with Fly Repellant; Mildewed Pea Vines; Outfits for Canning Fruits, 601, 602, 603.
VETERINARY.—Growth Over Eye; Sores on Mule, 603.
HOUSEHOLD.—My Pa and I; One of Those Things Every Woman Knows; About the House, 604, 605.
PRODUCE MARKET.—Los Angeles Markets; San Francisco Markets; Citrus Markets, 607, 608.

ALFALFA.

The next subject which will be given special attention in the series of articles similar to the plowing and irrigation articles which have been given within the past few weeks, will be alfalfa. There are many questions connected with alfalfa seeding and culture which are worthy of debate, and we have been requested to take this up in a similar manner to the treatment accorded the other subjects. To the end that this may be as valuable as possible, we ask those who are specializing on alfalfa and are able to give some particular points, to communicate with us within the next two or three weeks with such information as they may have.

We have in hand now a letter from Mr. C. K. Meyer of Tuolumne, in which he refers to an Arabian alfalfa and his experience with it as follows: "A recent editorial in the Cultivator discussed Arabian alfalfa and expressed a doubt as to its hardiness. I have had it growing here in a small way for the last three years and find it hardier than the common variety. The first heavy frost will kill what remains of the summer growth; then it will start a new growth and remain all winter and be a foot high before the common variety starts at all. It also seems to grow better on dry ground than the ordinary alfalfa. I have tried to get it to make seed here the past two seasons without success. It blossomed freely but made no seed."

Information on such points, especially as to its habits of winter growth, are of great value, particularly to those located in colder sections. The last sentence of Mr. Meyer's article shows his experience to be along the same lines as that of a Holtville, Imperial county, grower who has been unable to get this plant to seed. Subscribers who have had similar experience or who have been able to make it seed will extend the usefulness of this plant if they will tell others what they have learned.

HARDWOODS IN CALIFORNIA.

The Pacific Coast will soon be the scene of an interesting tree growing experiment. The United States Forest Service is planning to introduce a number of the more important eastern hardwoods into California, and writes us that the service will this year experiment with chestnut, hickory, basswood, red oak, and yellow poplar or tulip trees. Small patches of these trees will be planted near the forest rangers' cabins on the National Forests,, and if these do well larger plantations on a commercial scale will soon be established on wider areas.

There are over 125 different species of trees in California, a number of which produce some of the most valuable varieties of lumber in the country. Although considerably over one-half of the species are hardwood or broad-leaved trees, yet, with the exception of the exotic eucalyptus, there is not a single species of hardwood here ranking in commercial importance with the leading eastern hardwoods. Climatic conditions in many parts of California are undoubtedly favorable for the growth of a number of the valuable hardwoods, and the absence of these trees is due mostly to unfavorable factors of seed distribution.

If the experiments are successful, a valuable asset will have been added to the forest resources of this State, which should prove of special benefit to the local furniture and vehicle industries. Chestnut and red oak are highly esteemed for furniture, while with hickory, basswood, and eucalyptus at its command, California should lead all other states in the vehicle industry.

CO-OPERATE.

Farmers never gave so much thought and effort to securing co-operation in disposing of their products as they have for the past few years. There have been enough pronounced successes along this line to give encouragement. There have also been, as was always the case, enough failures to discourage the weak-hearted. But the greater intelligence which has been called into being by these endeavors, is making a showing of results which will greatly aid future efforts along this line. One great danger lies in unscrupulous or designing people masquerading under the guise of friend to the farmer in the effort to secure personal advantage, but if the farmer will use due intelligence and secure the aid of only men known to be honest and to have ability, there is no reason why he cannot market his products through his own organization to vastly greater advantage than through the old method of taking whatever the tradesman had to offer.

COUNTRY LIFE BOOSTER.

The Spokesman Review of Spokane, Washington, has inaugurated a novel and desirable feature in its paper. It is the securing of a great number of members to its "Boosters Club!" The creed or the injunction which every member has to subscribe to is contained in the injunctions as old as the scriptures: "Whatsoever things are true, whatsoever things are honest, whatsoever things are just, whatsoever things are pure, whatsoever things are lovely, whatsoever things are of good report; if there be any virtue, and if there be any praise, think on these things.

"To think well of country life, to speak well of it, is the first important step in boosting for it. This underlies progress in all departments of life."

That is a good creed and if every reader of the Cultivator will live fully up to it we believe country life will be made purer and stronger thereby. If there is any place in the world where one can find things that are true, honest, just, pure, lovely, it is under the blue skies which are untinged by sooty smoke and are practically always over the heads of those dwelling in the country and rural districts. The "Good Report" is not so all-prevailing, for sure it is if there is any place in the world where evil is spoken of its own community it is in the rural districts. The inhabitant of the city becomes so imbued with the spirit of growth and progress in his own community that he gives it undue importance and becomes even boastful. Let the farm home maker be as satisfied with his own surroundings, for they are well worth receiving greatest praise.

WRONG IMPRESSIONS.

The management of the Alaska-Yukon-Pacific Exposition has taken exception to the action of the Post Master General in accepting the design which he has for the postage stamps issued in commemoration of the A-Y-P Exposition. The central figure on the stamp shows a seal standing by a cake of ice, in deference to the popular impression of the conditions in Alaska. The Exposition management maintains that the whole object of the Exposition is to show the agricultural possibilities of Alaska and to give a more intelligent view of the resources of that valuable country. To that end they do not wish the prevailing prejudices as to ice-bound conditions to be given impetus by this design on the postage stamps. They are taking all steps possible to secure a reversal of the decision and the adoption of a new design.

It is said that among the exhibitions from Alaska made during the Exposition will be a large agricultural display, especially of live stock, and they will show photographs of scantily clad Indians picking strawberries, and other such features to endeavor to advertise agricultural Alaska.

AUTOMOBILE IMPUDENCE.

In the effort to secure better control of automobile speeding parties, Santa Barbara officers have been very alert and have made many arrests. This has resulted in more wholesome respect for the laws in Santa Barbara county which as a rule have been fully supported by the more responsible and reputable automobile owners. The speed maniacs, however, have objected to any control of their desires, and a few have decided to boycott Santa Barbara county by going around it on their trips north or south. To such drivers, we presume Santa Barbara officers will only say "good riddance." The automobile is too valuable a machine to have its usefulness impaired by these reckless drivers, and Santa Barbara's action should be supported and imitated.

IRRIGATION CONGRESS.

The Seventeenth National Irrigation Congress will be held in Spokane, Washington, U. S. A., August 9 to 14, inclusive, 1909. The four great objects of the Congress are to "save the forests, store the floods, re-claim the deserts and make homes on the land."

It aims to demonstrate to the West, the wonderful development possible through irrigation, drainage, forestry, deep waterways, good roads and home-building; and to show to the East the economic importance to the whole country of this development.

California has always had full representation and we doubt not it will this year.

FARMERS INSTITUTE WORKERS.

The next annual meeting of the American Association of Farmers' Institute Workers will be held at Portland, Oregon, August 16 and 17, 1909. At the same place and beginning August 18 will be held the annual meeting of the Association of American Agricultural Colleges and Experiment Stations.

This is the first time that the Association of Farmers' Institute Workers has met upon the Pacific coast.

Agricultural Notes of the Pacific Coast

Northern California

The plum crop this year will be large.

Alfalfa is selling in the cock in Sutter county at $8.

Yolo country is planning for a good county fair to be held this fall.

Pastures of Marin county are rapidly drying from lack of rain fall.

One shipment of 190,000 eucalyptus trees was recently received at Marysville.

The Santa Rosa Creamery Company has secured control of the creamery at Auburn.

The next meeting of the Sonoma County Grange will be at Geyserville on Saturday.

The attack of glanders among the horses about Gridley is demanding heroic measures.

A new and substantial dam will be built during the coming summer at the outlet of Lake Tahoe.

Work has been started on a new winery of 500,000 gallons capacity at Dry Creek, Sonoma county.

Condemnation proceedings are about to be begun at Yuba City, Sutter county, to condemn land for right of way for drainage.

Entomological experts who have been investigating the thrips plague are hopeful that the pest may be brought under complete control.

The new firm handling the creamery at East Auburn, Placer county, is Tupper and Stevens. This is one of the best creameries in the state.

It will take 1,700 enumerators to take the U. S. census which will be in order next year. The census must be taken in two weeks from April 15, 1910.

The Crocker National Bank of San Francisco has begun suit against the defunct Coldbrook Creamery of Humboldt county on account of money loaned.

A hydraulic miner who disregarded the State's law for discharging slickens into the navigable streams recently made good by depositing a fine of $500.

The Sierra Water Supply Co., in El Dorado county, has proposed to furnish free water to farms under ditch system in order to save crops endangered by the continued drouth.

The shortage of hay last year has resulted in an almost complete clean-up in all the markets. The late rains holding off as they have will also make crop rather short of previous anticipation.

The widespread prevalence of glanders is causing much loss and great concern. Several counties are more or less affected. On one large ranch there were recently destroyed 154 horses valued at $10,000.

The Government Inspector who has charge of the passing upon butter for the Navy manufactured at the Central Creamery is now called to Eastern work and his place will be taken by J. H. Severin of San Francisco.

Entomological experts from twelve states recently convened at Berkeley in the first session of the Pacific Coast Entomological Association. Prof. C. W. Woodworth, of the University of California, is President and Prof. W. B. Hermes, also of California, is Secretary.

Central California

Visalia prunes will be above the average crop of prunes this year.

The county sheep inspector of Kern county reports the dipping of over 400,000 sheep.

Reports from Santa Clara valley prune orchards indicate a heavy crop of large sized prunes.

Most of the apple growers of Watsonville have finished the first spraying for the coddling moth.

Terra Bella, Tulare county, is making a good showing of winter sowing grain. The harvest will be big.

Delano recently had a rabbit drive and make a round up of something less than 10,000 of the varmints.

The Fair Oaks creamery at Tulare has been sold, or at least a gentleman from Chicago has purchased a half interest.

Lucerne Cream & Butter Co. at Hanford recently made its record run by an output of 4,806 lbs. of "extra" butter.

The Weather Bureau will establish observation stations in the mountains for the purpose of measuring the fall of snow.

A coporation has been formed for the purpose of securing irrigation waters from Tulare lake. The water will be pumped.

The Tule River Citrus Association of Tulare county has voted to dispose of its coming crop through the California Fruit Growers Exchange.

Fourteen thousand acres of some of the richest land in the San Joaquin valley covered with growing grain was recently flooded by a break of the levee.

A Stockton man has a valuable variety of Capri figs planted some 35 years ago which is said to be an exceptionally fine form of this fertilizing variety.

San Joaquin Valley papers are appealing to the farmers to raise berries sufficient for the local market. At present most of the berries are shipped in from the south.

Large sums of money will be spent during the coming summer in the construction of roads, trails, telephone lines and other permanent improvements in the National Forests.

The Santa Clara Valley Pet Stock Association is planning for a big meeting, in fact an all day session, on June 3rd at Agnews. A model poultry farm will be one of the principal attractions.

Fruit growers are discussing the advantage which came to the raisin people from the recent advertising campaign and asking wherein the same advantage may be secured by other fruits.

The contention between the Board of Horticultural Commissioners of Tulare county and shippers of orange trees has resulted in the trees being cleaned to the satisfaction of the commission and they are now allowed to be planted.

The Kingsburg Co-operative Creamery Association and the Selma Dairy Association in Southern Fresno county and the Traver Co-operative Co. have consolidated. Hereafter the butter will be made at Selma, the other two points being used as separating stations.

Southern California

Coachella grape vines are loaded with fruit.

Cabbage growers have struck it rich all through the season.

A great many apricot trees were planted during the past season.

Potatoes have proved a profitable crop about Brawley, Imperial county.

El Centro claims that she will ship about 500 cars of cantaloupes this year.

Onion growers of the Coachella Valley have received two cents per pound, net.

San Bernardino apple growers are having great trouble this year with wooly aphis.

The Lima Bean Association has decided to form a corporation with $250,000 capital.

The Queen Colony Fruit Exchange of Corona shipped over 200 cars of citrus fruit during April.

The American Beet Sugar Co. of Oxnard recently entertained about 500 guests, mostly employees.

Brawley potatoes planted in the middle of January were dug on the 10th of April and were of fine size.

Chino, San Bernardino county, has a big grain crop and is arranging for threshing machines from the outside.

The Egg Association formed at Los Angeles recently is getting into shape for handling the products of its members.

An Oxnard sugar beet grower has patented and is manufacturing a new form of beet cultivator said to be most satisfactory.

The Richland Walnut Grower's Association will build a new packing nouse and have it completed in time for the coming crop.

Dr. Perley Spaulding, pathologist of the Bureau of Plant Industry, is in Los Angeles investigating as to damping off and other diseases of eucalyptus.

Forest Supervisor Charlton of Los Angeles has announced that on June 16th civil service examination will be held for thise wishing place in the forestry service.

A slight shock of earthquake caused an upheavel in the mountains near Santa Paula so that the entire face of the mountain and a canyon have been greatly changed.

Complaint comes from all portions of California, that the army worm is doing great damage. The damp cloudy weather of the last few weeks is favorable to their increase.

The high winds prevailing for some days in the Imperial Vallely have been exceptionally hard on the bees which are unable to fly against the wind, heavily laden with honey.

Work is progressing on the spreading of flood waters on the upper Santa Ana river, on waste land which will carry the water into the lower levels from which it may be discharged during the later summer months.

Since the State Pure Food law has become effective, egg dealers have been busy inquiring as to what constitutes a storage egg. One dealer wishes to know if he puts his eggs in the refrigerator over night if he must label them cold storage eggs.

The Coast

Portland potatoes have advanced in price and are quoted at $1.60 per hundred.

Clarkston, Washington, sheep are averaging about 12½ pounds of wool apiece.

One potato grower in Glenwood Springs recently sold five cars of spuds for $1.65 per hundred.

Ninety per cent of the Utah spring clip of wool has already passed from the hands of the wool growers.

The U. S. Forest Service is joining with the stockmen of Arizona and New Mexico in a campaign against prairie dogs.

The State Experiment Station at Puyallup, Wash., now has 13,000 incubated chicks in its experimental plant.

By recent order of the Interior Department a vast quantity of land will soon be available under the new Homestead law.

The officers of the state penitentary of Washington are selling jute sacks at 6 cents delivered anywhere in the state. The sacks are the standard size 22x36 inches.

North Yakima hopes for an early reclamation of 5,000 acres of land through conducting to it of water from the Klickitat river.

The Bureaus of Agriculture and Forestry of Hawaii is making a collection of native woods to form a part of the display at the A-Y-P-Exposition.

The Horticultural inspector at Walla Walla, Washington, has served notice on the fruit growers that coddling moth must be more completely controlled this year.

Hundreds of thousands of dollars in property was destroyed and scores of ranchers forced to flee for their lives as the result of a bush fire near Kamloops, British Columbia.

The Northern Pacific and the Great Northern join in demonstration train service which will be run during the most of the month of June in farm sections of Washington.

The 5th annual horse show at Waitsburg, Walla Walla, county, Washington, held on May day was a complete success. Over $100,000 worth of high bred animals was exhibited.

The Senate and House of Representatives of Hawaii recently united in a joint session to listen to an address on Conservation of the National Resources given by the Governor of the territory.

Hawaii publications urge the taking advantage of shortage in the California potato crop owing to the heavy floods in San Joaquin and Sacramento valley by planting large acreage on the islands.

Peach growers at Dayton, Wash., and Snake River valley are thinning peaches of a part of the enormous crop which has set. The Eastern part of Washington will have no peach crop at all on account of severe cold weather.

The famous Hazel Fern farm near Portland, Oregon, which comprises about 460 acres of fine farm land and a large number of the finest Jerseys in the world, recently sold for $2,000,000. Its great value was largely due to its nearness to the city of Portland.

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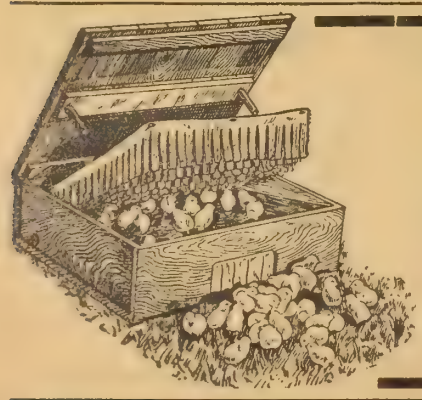

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Cuttings of alfalfa made over the Sacramento valley have been exceptionally heavy.

The Egg Producers Association of Santa Ana, Orange county, is perfecting its organization.

Profit in the Poultry Yard

By Mrs. Frank Metcalf

We solicit short articles of a practical nature from the fancier and utility breeder, giving their experience with poultry. All inquiries pertaining to feed, management, disease and its prevention will be answered through these columns.

POULTRY INDUSTRY OF CALIFORNIA.

MR. L. C. BYCE, president of the Petaluma Incubator Co., and often called Father of the Poultry Industry of California, recently prepared an address on the poultry industry and it is so full of fact that we quote in full:

Since its inception, only a comparatively few years ago, the poultry industry of the State of California has made advancement greater than that of any other section of the world. Thirty years ago if one wished to procure 500 or 1000 hens to stock up a poultry ranch they could not be obtained except by having them shipped in from the east, and even now if a poultryman has for sale a like number of fowls he scarcely needs to go beyond his neighbor to find a customer. In the great chicken centers of Petaluma and Santa Rosa, with their nearly one and one-half million hens, one would very naturally expect to be able to buy any number of fowls desired, but there, as elsewhere in the state where fowls are kept, the local demand is so great for stocking up the ranches being started in the immediate neighborhood that only the old hens—too old to be productive—ever leave the vicinity and buyers from remote sections are somewhat surprised at not being able to find anyone willing to sell laying pullets.

There is a reason for all this, or it may be said there are many reasons, all of which contribute to make California the most desirable place for poultry raising. Who ever heard of poultry ranches in any other state in such numbers and carrying from 800 to 8000 fowls on a ranch. Tributary to Petaluma and Santa Rosa there are over 800 poultry ranches having from 1000 to 8000 laying hens each. Other sections are rapidly coming to the front as great poultry producing centers. There is no part of our great state that is not adapted to extensive poultry culture, even the mountainous parts having some of the most favored places and poultry is not simply engaging the attention of those of small means or those whose health has failed them and are seeking outdoor employment, but owners of very extensive tracts are fast finding that no crop can be rasied nor can the producers of their acres net them as much as is secured through a well conducted poultry business. This is opening up the way for employment of a great many men competent to manage or conduct such places.

The soil of many of our valleys, large and small, together with the hill sides, are especially well adapted. The climate is particularly propitious. Housing is less expensive than elsewhere, markets are good and everything tends to make poultry raising easy and profitable to those who intelligently engage in the business. There is no room in the poultry business, however, for the careless or shiftless or those who think that "anybody can raise chickens."

Selecting a location is of great importance; oft times there is such a demand in the local market as to exceed prices paid in the larger cities, while feed is correspondingly cheaper, therefore it does not follow that one must locate near to the largest market to obtain the greatest profit for his efforts. It has become an old story to hear it said, "A hen will pay $1.50 per annum." There are numbers of poultrymen whose word would be accepted on any other subject as truth who say they have made as high as $2.25 net per hen per annum, and the man who cannot show more than $1.00 per annum belongs to some other line of work than in poultry raising. The prevailing high price of feed for the past year has not been without its beneficial side. While poultry products are bringing uniformly good prices and feed moderate in price, poultrymen were somewhat inclined to be satisfied with the good returns, but when feed made very material advancement in price the thoughtful and considerate poultrymen immediately began to weed out all old and limited producing fowls, thereby resulting in a largely increased average for the flock as well as a decreased consumption of food and a resultant satisfactory profit.

But what of the future. It is a fact that California is producing less than half of its present requirement in the poultry line. A leading Chicago paper recently deplored the fact that the American hen had completely failed in her duty, hence eggs were commanding a price of 36 cents per dozen wholesale in that city. Corresponding reports come from other places clearly defining the fact that over production is something for future generations to worry over. This is not only true for our own United States, but the report comes from one consul general, Richard Guenther of Frankfort, that Germany is not able to supply her home demand for eggs and in 1907 imported $34,643,000 worth of eggs.

In view of all this, little need be said of the future for California as a poultry producing state. With eggs reaching a maximum in the San Francisco market of 57 cents per dozen, the long continued range of high prices, the insufficiency of home supply; the shipment of eggs into the eastern markets at favorable times, the apparent lack of supply everywhere to meet prevailing conditions, the unusually favorable climatic conditions of California, the adaptability of soil so universal throughout the state, the freedom from disease and the assurance of good market conditions should appeal to every right calculating man that our state is truly the poultryman's paradise.

POULTRY QUERIES.

Roup.

What is a good cure for roup? What is the matter with my little chickens when they become lame for two or three days at a time.—M. S., Vacaville.

There are several good roup cures advertised in the columns of this journal; why not try some of these? Should suspect over-feeding of rich food, in the case of the little chicks, which causes liver trouble, and resultant lameness. Many chicks die from over-feeding during the first

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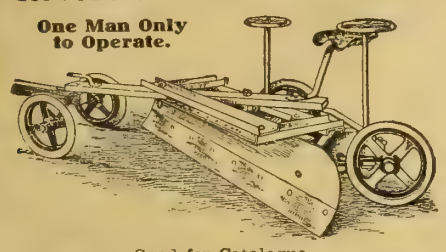

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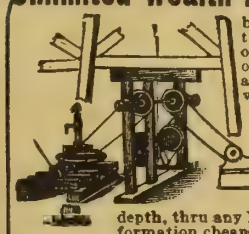

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weeks, and a diet confined to chick food, and water is safest for the first three weeks, gradually adding meat and mashes, after this period.—Mrs. F. M.

Losing Feathers.

Have some chickens that are losing feathers on their backs, and when so affected, are unfit for food.—V. V.

You do not state your case very clearly, and I must answer at random. If your chickens are hens, they are suffering from a too attentive male who scratches the feathers off their backs, and he should be taken out part of the time. If you are up against the depluming mite, which is an insect invisible to the naked eye, which eats the fluff off the feathers, making them look scraggly and hideous, I am sorry for you, for I was troubled with it, and found no remedy until I made a strong tea of tobacco stems and washed the hens in that. Of course their beauty was gone until they got a new coat of feathers. It in no way affected their health, and they would have been all right for the table, but were extra good breeders, so I kept them. They show no signs of it this year, and I think the tobacco tea "fixed" the insect, all right.

To make the tea, I procured at a cigar factory a pound of stems, which I steeped in two gallons of water, and put into a tub holding perhaps ten gallons although it was not more than half full. Then I washed those birds thoroughly, rubbing it into the feathers well, which is no easy task, for feathers object to wetting through, and it takes time and patience to get every little feather soaked to the skin, yet that is just what must be done. The water was kept at nearly blood heat, so as not to chill them, and the work done in the hottest part of the day, so they could sun themselves dry, and not one took cold. This is also a good plan to kill the body lice, but is rather apt to smart the eyes, and they should not be allowed to swallow any.—Mrs. F. M.

Feed for Young Turks.

Will you please tell me if cracked Egyptian corn is good for young turkeys? I have been told that it is not. What is the best to feed them?—Mrs. Wm. H.

In the Cultivator of Dec. 17, 1908, is given a method of feeding turkeys which was so successful that I consider it worth repeating, and those who have saved the issue in question must excuse the repetition.

It was written by D. H. Hammons of Highland, a gentleman who has the modest ambition to own a 6,000,000 hen plant some day, to which end he is now beginning with a little $100,000 broiler factory which will be described in these columns later on.

He is a medical college graduate, but discarded his diploma for hens, and is putting all the energy of a keen, educated brain into these hen problems and as he is a tireless worker, success is sure to be his.

He says: "I will tell you how I feed my turkeys and the results therefrom: To start with, we never brood turks in the natural ways, but use the cold brooder, which gives far better results. The wobbly little fellows are taken from the hen, whether chicken hen or turkey hen, and dusted with insect powder, and the bedding in the brooder is also dusted. Then the turks are placed in the brooder and allowed to snooze for 24 hours, not less than 15 being placed in a brooder

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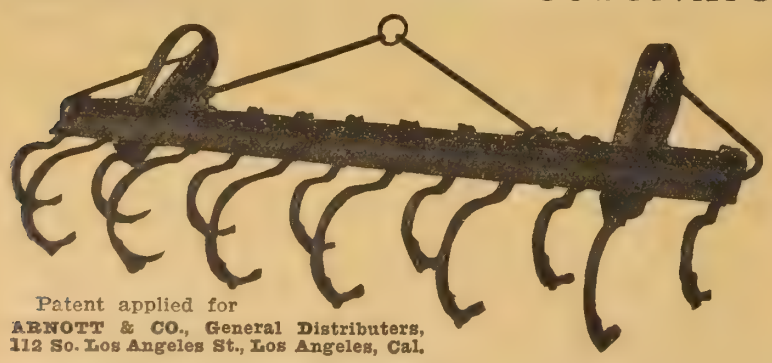

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18 inches square. The next morning the little brooder door is opened and out they tumble. Then they get their first meal, which is a light one, as they do not eat much the first two or three days, and is made as follows: Stale bread, 40 per cent; hard-boiled eggs, 40 per cent; onion tops 10 per cent, and lettuce, 10 per cent. This is ground fine, and sprinkled with sand.

"The turks are fed four times a day on the same ration the first three weeks, then we gradually shift to cracked wheat and cottage cheese. This is fed until they are about eight weeks old. After this they are fed wheat, barley and beef scraps from a hopper. At first they are only let out of the brooder 20 minutes at a time, as they chill easily. After they have learned to go back to the brooder themselves, when cold, the brooder door is left open all day. As soon as the turks are strong enough to run about, the brooder is put out on the lawn, where they can pick clover, etc.

"From 53 eggs hatched from three hens and a tom, 50 were raised to maturity. Two were weak, and one was drowned, the ones sold netting $5.00 each. (N. B. My wife raised these turkeys.)"

White Guinea Eggs.

Where can I obtain white guinea eggs for sale?—C. E. U., Hanford.

We know of no place and we ask our subscribers to give us information on this subject as to what they know of such birds.

HOW TO FAIL WITH POULTRY.

1. Endeavor to keep two fowls where room for one only can be obtained, that is, saving expenses by cheapening the cost of houses and space.

2. Buying fowls from other farms and thus bringing disease and lice into the flock.

3. Overfeeding, the fowls being supplied with the greatest abundance under the supposition "the more feed the more eggs."

4. Cold draughts over the fowls at night with a view of supplying fresh air.

5. Wasting time with sick fowls instead of destroying all birds that cannot be quickly cured.

6. Disregarding the breeds by keeping anything that is a fowl.

7. Lack of exercise, the fowls being idle, discontented and consuming food because they have no warmth in winter, a season when eggs are highest.

8. Feeding three times a day, the result being indigestion and the introduction of disease into the flock.

9. Lice, both mites and the large lice that are found only on the bodies of the fowls, and at all seasons of the year.—The Ranch.

Protein feeding means providing fowls with albuminous ingredients such as meat foods, certain kinds of vegetables and clover. Grains contain protein too but not in sufficient quantities to make a strictly grain diet economical for egg-production nor for the best normal development of growing chicks.

Sulphate of iron, which can be purchased at almost any grocery store, and costing about 5 cents per pound, is a good tonic and mild disinfectant to put in the poultry drinking water. A solution of chlorate of potash in vinegar is good for canker sores in the mouth and throat of fowls.

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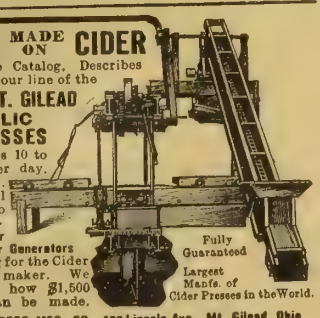

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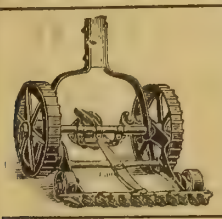

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Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Government Land in Colorado.

I notice in the Cultivator that there has been 200,000 acres of land thrown open to public entry in Colorado. Can you tell me who to apply to and where to write for information regarding this?—E. J., Hanford.

We can give you no definite information on this subject but think that by writing to the United States Land Office, Denver, Colorado, you may get the desired information.

An Acre.

Please advise me through your columns the exact dimension, in yards, of one acre of ground. A says an acre is ten rods wide and sixteen long. B says it is ten rods square.—F. B. B., Princeton.

A and B should not have quarreled over so simple a proposition as this. The old arithmetic or reference to the dictionary would quickly have settled the whole scrap. Webster says an acre is a piece of land containing 160 square rods or 4840 square yards. It is well to remember that an acre of ground is 43,560 square feet. The dimension in yards is exactly 60½ by 80 or in rods, 10x16.

Fungus Blight on Sycamore.

A subscriber noticing the defoliation of large sycamore trees in the Arroyo Seco running from Los Angeles into the mountains north of Pasadena sent samples of the leaves and asked if there was any way of preventing this defoliation. The leaves were curling up and dying and some were eaten apparently by insects and were occupied by small white worms. The matter was referred to Prof. R. E. Smith of the Southern California Pathological Laboratory and he writes:

The sycamore leaves which you sent me recently are affected by the fungus blight which is universal on these trees all over the world. The disease varies in intensity from year to year, but almost always defoliates sycamore trees everywhere at this season. A new crop of leaves is at once put out and there is no very serious damage.

Burning Charcoal.

Will some one please inform me through the Cultivator how to burn charcoal out of hard wood.—A. L., Chino.

Make a chimney by piling fine, dry wood and around that stand on end the other wood or if cut in short lengths stack up as high and as close together as possible end on end. Cover wood with about two or three inches of straw or leaves and cover with six inches of soil. Start the fire through the chimney and after well started cover top of chimney the same as the rest of the pile. Care must be taken that the fire does not break out or the entire pile will burn up. Close watch must be kept night and day until entirely burned out, which takes a week or more. The larger the pile the longer it takes. Soil which has body to it is better than light, sandy loam which is very liable to sift through and be hard to keep in a compact covering. It must not be opened until the fire is entirely out as a spark left in the kiln may consume the entire pile as soon as it is exposed to the air.

It is probable you will make a failure of the first attempt and one who has had experience advises securing skilled help for the first burning.

Wax for Wounds on Trees.

What is the best thing to use for painting over fresh cuts on citrus trees? Is there a mixture of resin and beeswax and one other ingredient? Please tell me what this is and how it is made.—W. A. L., Cucamonga.

Bailey says lead paint and tar are desirable. He seems to prefer them to grafting wax which is the wax you refer to. The wax you speak of is made as follows: One pound of beeswax, five pounds resin, 1 pint linseed oil. Some add a little turpentine or a little lampblack or a little flour and some prefer tallow to linseed oil, but the above formula is the regular formula. Mix with the aid of gentle heat. Use when grafting or pruning. When used for a coat over wounds keep warm enough to apply easily with a small brush. This may be done with a small oil lamp under a regular heater, or a tin dish on hot brick will answer.

Pomona Journal of Entomology.

Where may I secure copies of the Pomona Journal of Entomology of which you speak in the Cultivator of April 29th?—E. E. B., Escondido.

The Pomona Journal of Entomology is a quarterly publication and may be had by addressing Prof. C. F. Baker, Managing Editor, Claremont, California. The price is $1 per year.

Oil Stains in Carpet.

I note query for oil stains in carpets. I find the old time remedy of buckwheat flour or of fine corn meal stirred up in scalding water and applied hot, at once, is a good one. When dry scrape off and the oil comes off in the meal. We are afraid to use gasoline in a living room as the gas is given off for sometime and when lights are used may prove dangerous. —M. E. S.

Time to Plant.

When is the best time to plant onion seed to have them ready to transplant in November? Can mangel seed be planted after the first rains in fall or will frost injure plants.—A. H. N., Tropico.

Onion seed after planting requires about two months before being ready for transplanting. In most sections of California the mangel may be planted after the first rains as it requires quite a frost to injure them. If the frost holds off until the plants are a few inches high there is no danger whatever.

Fertilizing.

Please inform me if better results are obtainable by using potash and phosphoric acid, chemically pure, instead of plain fertilizer rich in the above mentioned elements. If so, kindly state best time to apply it. Also how much of each ought a tree to have that is about 15 years old?—O. E., Ontario.

The best information we can give on this subject is to refer the writer to a long article, written by Mr. Frank

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Suisun, Salano county, is putting up strong opposition to the drainage scheme proposed for the Yolo Basin.

Palmer of North Pomona, and published in the Cultivator of May 14 and 21, 1908. That treats of the fertilizing question in a way most practical and touches especially upon the use of the simples. Unless one understands the needs of the particular kind of fruit, the use of a complete fertilizer would be safer. As the inquirer does not say what kind of trees or their condition or the nature of the soil it would be impossible to give an estimate as to how much of the various elements to apply. It would be impossible to apply "chemically pure" potash or phosphoric acid. Potash is usually bought in the form of muriate or sulphate and the phosphoric acid either in phosphate rock or bone meal.

Onions from Seeds and Sets.

When is best time to plant onion seed to raise sets, to plant in October? And how many pounds of seed (Australian Brown) will it require to raise enough sets to plant five acres? Will they require irrigation? or is it not better to simply irrigate enough to germinate seed? Do you think it cheaper to huy or raise sets, everything being equal?—An Old Subscriber.

Seed should be planted not later than May 1st. A month earlier would be better. It requires about 300 pounds of sets to plant one acre—or about five pounds of seed. Whether they will require irrigation depends entirely on the character of the land. The most successful growers of onion sets have land with water near enough to the surface to supply all the needed moisture by capillary attraction—consequently no irrigation is needed. Such sets are worth more than when grown by irrigation. Unless one is skilled in the work it will be cheaper to buy the sets. The skill and knowledge is where this querist will discover that things will not be otherwise equal.

Any one, with only the limited experience indicated by these questions, to attempt to grow five acres of onions and make a success of it, will find the venture unprofitable. Better far, confine the work to one acre, until you learn how. The novice has no conception of the labor involved in growing an acre of onions, even under the most favorable conditions. I should think to grow the Australian Brown by sowing the seed about February 1st would give better results than to plant the sets in October. Planted in October will bring them too early. The market demands this variety for fall and winter use. The New White Queen or the White Bermuda are better planted in October.—Q. A. L.

Sulphuring Grapes.

I had much trouble with rotting of prapes. Have been told it is mildew. Could not apply Bordeaux last season but will next. When should I sulphur?—H. S. T.

Sulphur at once. The amount of vineyard to be sulphured has something to do with the way it is applied. We are using a Cyclone horse powder machine in the vineyards here. While some of our neighbors are still using the old time hand bellows and others the tin sprinklers. The Vilmorin and Julian knapsack machines are also in use. If there are only a few vines it could be done with the sulphur tied up in a piece of gunny sacking. However remember this will only check the spread of the mildew and will not restore the shoots or leaves already injured. Mildew has finished its destructive work when it can be seen by a casual observer. When it completes its work it throws off spore that carry the disease to other vines, starting into life when conditions of heat and moisture are right. Sulphuring now puts the sulphur where the warm sunshine volatilizes it into fumes that quickly destroy the mildew starting into activity. By having it there to work every day and all day during the hottest hours it will stop the trouble. Sulphur will in a measure check the black rot of the grapes. Bordeaux spray in the winter helps a lot. Put the sulphur on early in the morning and stop when the dewy freshness passes out of the air. In buying sulphur, test it for fineness by rubbing it in the palm of the hand. Its color may be yellow or nearly white and be equally good, if it is velvety and fine it is good vineyard sulphur. Sulphuring is all you can do now and it may take two or possibly three applications to hold down the trouble. While this may seem a trouble still each time some of the mildew is prevented from reproducing itself and there is a gain in that.—M. E. S.

Mildewed Peas.

What is the best time to plant American Wonder peas? How shall we prevent the bugs from getting into them? Is Bordeaux mixture good to spray the peas to prevent mildew before blooming, also is it good to prevent mildew on any kind of beans?—Subscriber, Arroyo Grande.

So near the Coast, American Wonder Peas can be planted at any time. To state any one time as best, I should want to know whether grown for market or home use. Peas are usually most abundant in the market in latter part of March and during April and May. Grown out of the usual season, when the locality will permit, will give the best price—if grown for market.

I cannot tell how to prevent the bugs from getting into the peas, but they can be destroyed by fumigating with bi-sulphide of carbon. The peas should be put into a box or other tight vessel and a piece of waste or cloth saturated with the bi-sulphide placed inside and the box covered. Do not have a light or fire about as the gas is highly explosive.

Sulphur is the sovereign remedy for mildew and will do as well for beans as peas. It is the heat of the sun that fumes the sulphur and destroys the spores of mildew. It should be used as a preventive, as when the spores have once developed no amount of sulphur will destroy those particular spores. Bordeaux is used for fungus of another kind.—Q. A. L.

Cheese From Two Cows.

Will you please inform me if a farmer can make cheese from the milk of two cows? Is it profitable on such a small scale, and what is required for it?—A Subscriber, Selma.

Cheese making on a small scale is not profitable unless a special market can be built up for some of the fancy cheeses. In San Francisco or Los Angeles this could be readily done. The requirements are a simple press, hoops, cheese or curd knife, and other appliances. The greatest difficulty here is in curing the cheese, as the high temperature in summer is not favorable to making a good quality. The best bulletin I have seen on the subject is one issued by the Government some years ago. The latest book dealing with it is "The Science and Practice of Cheese Making" by Drs. Van Slyke and Publow. Price $1.75. I do not know the publisher's name. The Short Dairy Course at Davis offers great advantages to students.

Avocado Leaves.

I send leaves from my avocado (alligator pear) trees which are badly infested with some sort of scale. What is it, and what may I do for it?—Old Subscriber, Santa Barbara.

These leaves are plainly not infested with scale but show an appearance somewhat resembling that of fungus growth. Consequently, the leaves were forwarded to Prof. Ralph E. Smith who replies:

The avocado leaves are not affected by scale, nor by any fungus or other parasite. They look as though they had been injured by frost, wind or some other climatic condition.

Powdery Mildew.

I send leaves from my vines. Will you please let me know what it is that infests them, and the remedy? How often should I sulphur here along the coast?—J. S., Norwalk.

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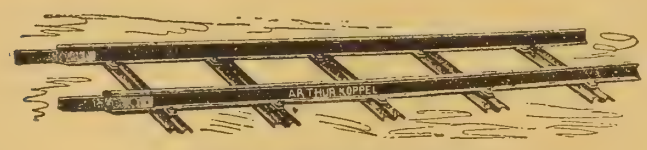

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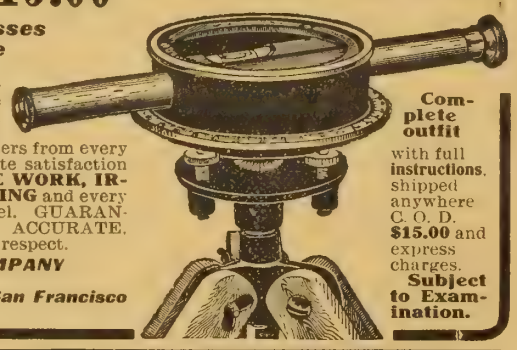

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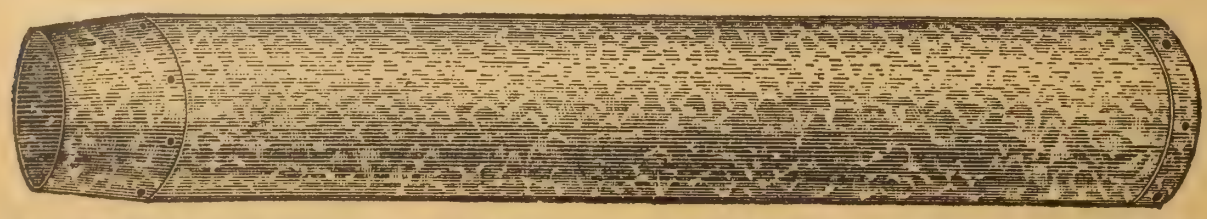

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To this Prof. Smith replies: "The grape vine leaves are affected by powdery mildew, for which sulphur is a specific remedy, except, that cool cloudy weather prevents the action of the sun on the sulphur and thus we do not obtain its maximum effect under such conditions. Your correspondent should send to Berkeley and obtain bulletin 186, which covers this subject."

Diseased Apricot Leaves.

I send leaves of apricot trees affected with brown and dead edges. What is this disease, if it is such, and is there a remedy? I had one tree similarly affected two years ago, which ultimately died. This year there are ten affected in the same way. The trees are old, but apparently healthy otherwise.—A. K., Selma.

This inquiry was referred to Prof. Ralph E. Smith of the Southern California Pathological Laboratory, and he replies as follows:

The apricot leaves from the Selma correspondent are not affected directly by any parasite, but apparently have become unhealthy on account of not receiving a proper supply of sap from below. From what is said in the letter I imagine that there is something wrong with the roots of these trees and that the trouble is gradually increasing. I would advise your correspondent to dig down about the trees, examining the roots and also investigating the moisture condition of the soil as to whether the ground water is possibly too high at times.

Experience With Fly Repellant.

In response to the request in the current number of the Cultivator, I give the result of my experience with the fly repellant.

It did the work effectively—one good application kept the cows practically free from flies for from 24 to 48 hours. But I found two difficulties in using it.

In the first place I was unable to spray it on, it being too thick to spray, so I put it on with a paint brush.

In the second place, on hot days the cows suffered terribly from the heat, having great difficulty in breathing. I concluded that this was because the pores of the skin were closed by the oil.—W. P. Russell, Claremont.

Mildewed Pea Vines.

A subscriber called at the office recently with roots and lower branches of pea vines which had died or at least lost their productiveness, and wished to know if the small lumps or nodules on the roots were the cause of the poor condition of the vines, and if so, how might it be controlled. As a matter of fact the nodules were to the advantage of the vine and had added to their nitrogen gathering power. In other words, the appearance of nodules on the roots of leguminous plants is an indication of thrifty growth. These vines would have done well had they not been affected with mildew which showed very plainly on the leaves. The specimens were referred to Prof. R. E. Smith, and he writes:

"The trouble with the pea vines is a combination of mildew and the so-called "black mildew" (Ascochyta). The nodules on the root are those formed in connection with nitrogen assimilation and are therefore, beneficial rather than otherwise. It is difficult to control the two diseases mentioned in moist cloudy weather, such as we are now having. The usual remedy is sulphur dusted over the vines but this is not always effective in such weather."

Outfit For Canning Fruits.

Can you tell me through the columns of your paper where I can obtain outfits for canning fruits on a small scale?—J. S. W., Willowbrook.

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Veterinary

Answers in this column by Dr. R. T. Whittlesey, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Growth Over Eye.

I have a fine Norman colt one week old. It was born with a growth of some kind over its eyes. On one eye it has reached the centre of the eye almost covering the pupil and with this eye can see very little if any. On this growth there is a protuberance. On the other eye the growth only comes a short distance below the upper lid and with this eye it can see. The growth looks like a membrane and like the ball of the eye when bloodshot. In all other respects it is a strong beautiful mare colt.—G. F., San Benito.

It is impossible from your description to make certain diagnosis, but I think the growth is the "nictitating membrane" or eye washer that you can see in any horse's eye by a little pressure to the ball, it will come out from the inner corner and flash across the eyeball. Its function is the voluntary cleaning of the eye.

From various diseased conditions this is forced out and is unable to entirely return to its normal position. Its protrusion is one of the first symptoms noticeable in lock-jaw or tetanus and if that is the cause in your colt, it will proabably be dead before you read this. If not it is very likely due to some local inflamatory condition and I should advise the use of the following solution four or five times daily with a medicine dropper, only a few drops at a time.

Adrenoline one dram, water one ounce.

In some cases it becomes chronic and the only thing is to cut them off, this should only be resorted to after a long trial of other treatment.

Sores on Mule.

I have four-year-old mule who has apparently inflammation of bladder. Penis protrudes slightly, head is scalded, with white flakes on sheath, and an almost constant dribbling of whittish, thick fluid. Otherwise animal is in good condition, fat and willing to work. Pressure over kidneys seems to cause no pain.

Also what was the cause of death of two six-year mares I lost last year. I had a V. S. who knew how to charge, but not to cure. The mares both got thin and lazy, had difficulty in making water and finally died in great agony, one of them falling as though paralyzed after much staggering. The veterinarian I had called it inflammation of kidney. It looked to me like paralysis of neck of bladder.

I wrote Dr. Fox, V. S., Sacramento, and he said it was Azoturia, though no reliable book has any mention of the disease.—H. R. B.

There are probably sores inside of the sheath, you will have to make a thorough examination—not guess at it. If you find the sores, wash thoroughly and then use a solution of sulphate of copper and water on them. Make solution as strong as possible. The sheath should be washed daily and dioxide of zinc rubbed into the sores. You may find this line of treatment difficult, but it is necessary if you want to cure it.

As to the mares that died last year I think from your description that Dr. Fox was right. Any book that does not mention Azoturia is far from being reliable as the disease is almost as common as colic in some localities. —R. T. W.

DR. WHITTLESEY'S VETERINARY REMEDIES.

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Household Department

MY PA AND I.

My pa he didn't go down-town
  Last evening after tea,
But got a book an' settled down
  As comfy as could be.
I'll tell you I was offul glad
  To have my pa about!
To answer all the things I had
  Been tryin' to find out.

And so I asked him why the world
  Was round, instead of square?
And why the piggies' tails are curled?
  And why don't fish breathe air?
And why the moon don't hit a star?
  And why the dark is black?
And just how many birds there are?
  And will the wind come back?

And why does water stay in wells?
  And why do Junebugs hum?
And what's the roar I hear in shells?
  And when will Christmas come?
And why the grass is always green,
  Instead of sometimes blue?
And why a bean will grow a bean,
  And not an apple, too?

And why a horse can't learn to moo?
  And why a cow can't neigh?
And do the fairies live on dew?
  And what makes hair grow gray?
And then my pa got up, an' gee!
  The offul words he said!
I hadn't done a thing, but he
  Jes' sent me off to bed.

ONE OF THOSE THINGS EVERY Woman Knows.

"NO," said the young woman with the blonde puffs, "we hain't got a shawl in the store. They're not worn now, and we don't have no call for 'em."

Mahlon Jilson gazed helplessly around at the dazzling array of feminine wearing apparel with which the department store was filled. He had thought that a warm gray woolen shawl would be just the right present for his wife, and to be informed that "shawls are not worn" was decidedly disconcerting.

The young woman with the blonde puffs noticed his hesitation.

"If you're looking for a present for a lady," she said, as she shifted her gum to the other side, "you can't do better than take one of these waists. There isn't a stylisher thing in the store. I took one of 'em for myself the minute they came in."

She held up a flimsy confection of pink silk and white lace.

Jilson shook his head.

"It's—it's for a married woman," he stammered, struggling with a realization of the gulf which stretched between this frivolous creature and his Elvira.

"Why, that doesn't make any difference," responded the girl, cheerfully, she'll simply go crazy over one of these waists—any woman would! About what size is she?"

"About your size, I guess," said Jilson, a strange hypnotic influence stealing over him.

Just what happened after that he never could tell exactly, but a short time later he found himself walking proudly and happily up the street with that gorgeous pink white thing in a box under his arm.

By the time Jilson had unhitched his team from the rail in front of the postoffice, he was conscious of a slight doubt as to whether a black silk waist would not have been a more suitable choice than pink.

By the time he had driven the seven frozen miles that lay between town and home he was face to face with the grim fact that gingham wrappers, rather than silk and lace, were the customary and fitting habiliments of a woman whose days were spent in cooking, cleaning and mending.

The bald place on Jilson's head was plainly visible below the back of his hat, but in all the years of their married life he had never once failed to give his wife a birthday present—always something practical, of course—Elvira was a practical woman. Hopelessly plain and colorless, even in her youth, she had wasted little time or thought on personal adornment. She had ignored the very existence of pompadours, elbow sleeves and sheath skirts, and her black winter hat was of the crop of 1903.

And now he was going to give her a pink silk waist! She would surely think him crazy.

He hid his purchase in the haymow and groaned whenever he thought of the contemptuous look which would overspread the face of the sensible Elvira as soon as she saw it.

Suppose she should ask how much it cost! Four ninety-eight for a thing like that, and a mortgage still on the farm!

He grew so depressed thinking about it that his wife became worried over his health and almost forced him to take a dose of quinine.

With a feeling of dread, on Elvira's birthday Jilson produced his parcel, thrust it into his wife's hands and fled to the barn. It was half an hour before he could muster up sufficient courage to return.

"Might as well go back and have it out with her," he muttered doggedly, as he opened the back door.

Elvira was not visible. The breakfast dishes were still unwashed. Upon the floor by the stove lay the box and some tissue paper.

"I'll bet a dollar," sighed the miserable man, "that she's put the fool thing into the fire!"

"Well, Mahlon," said a voice from the bedroom, "I guess you think I ain't too old for fancy clothes yet! How'd you know so well what I wanted?"

Jilson turned and stared. Was this Elvira? She had slipped on the waist and loosened her tightly twisted hair about her face. There was a smile on her lips, a light in her eyes and a becoming flush on her cheeks—perhaps a reflection from the waist.

"Gosh!" he exclaimed. "I wouldn't have believed it, but the girl with the hair was right—any woman would!"—St. Louis Times.

About the House

IN many homes at this season of the year the air is full of commencement talk—the high school commencement—for nowadays the high school has annexed many of the time honored customs and ceremonies that have always been supposed to belong to the colleges and universities. So now in most high school communities, in the spring months, there is little thought of or talked of, but baccalaureate sermon day, the faculty reception, the senior banquet, class parties, final examinations, or the arrangements for class day—that day so fraught with pleasures to the members of all the classes.

The busy, anxious, seniors, and the important, bustling juniors work night and day while the critical sophmores and the excited freshmen share the

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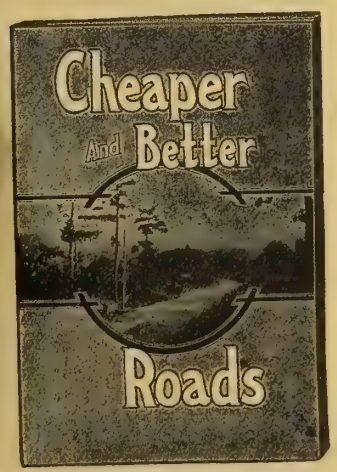

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responsibilities and pleasures of the hour. The last few weeks of school are a hurry and a whirl, ending with the commencement exercises and the alumni banquet where the "new class" takes its place with those of former years, and toasts and speeches and general merry making close the evening.

And in all the worries and all the pleasures and all the responsibilities the fathers and mothers have their part. And right gladly and willingly do they do their share, and see too that the boys and girls have all that they can give them—whether it is time or money, or clothes or parties—or love or counsel—all these the parents give in full measure, and to the credit of the boys and girls—all that I know, at least, the parents bounties are worthily bestowed.

Perhaps for some of the school festivities some tested recipes for home made creams and ices may be useful.

Ice Cream.

One quart rich cream, 1 pint milk, ¾ cup of sugar, 1 tablespoon of vanilla and ¼ teaspoon of lemon. Heat a little of the milk and in it dissolve the sugar. When cool add to the rest of the ingredients and place in the freezer.

For freezing creams use 5 parts ice to one of salt.

To make strawberry cream add one box of crushed strawberries, sweetened to taste, and a little red fruit coloring dissolved in a little water, to the recipe for ice cream given above.

Frozen Custards.

One quart of milk, 1 cup sugar, and three eggs. Beat the eggs, add the sugar and milk and heat, but do not boil. Cool, add desired flavoring and freeze.

To make Pistachio cream add to this custard 1 cup of Pistachio nuts and 1 teaspoon of almond flavoring. A good substitute for the Pistachio nuts are pecans with a little green fruit coloring added.

Another variation may be made by adding to the plain custard a cup of English walnuts and dried or preserved figs chopped fine, or English walnuts, and candied cherries or seeded raisins chopped. Apricots or peaches may be added—in fact almost any fruit, remembering that if there is much acid in the fruit it must not be put with the custard until the custard is pretty well frozen.

Ices.

One pint of fruit juice, 1 pint water, 1 cup sugar, 1 tablespoon gelatine. If the fruit is very sweet add the juice of one lemon. Soak the gelatine in a little cold water. Put the water and sugar on the stove and let boil a moment, take off the stove and add the gelatine, strain and when cool add the fruit juice and freeze. To make a "sherbet" add to this ice mixture, when partly frozen the beaten whites of three eggs.

In freezing ices and sherbets use three parts of ice to one of salt.

Strawberry Punch.

Strawberries are plentiful in May and June, and strawberry punch is a delicious drink. Use berries that are fully ripe, and to every quart of fruit add a cup of cold water and cook until the berries are very soft. Strain through a cloth then measure the juice and put on the fire. For every two cups of fruit juice take one cup of sugar and when the juice has boiled for five minutes add the sugar and cook to a syrup. Strain through a cloth and if you want to save the syrup for future use bottle while still hot, but if you want to serve at once cool and to each cup of syrup add the juice of one lemon. Dilute with water to taste, and serve in small glasses with a tablespoon of cracked ice in each glass.—Elbepe.

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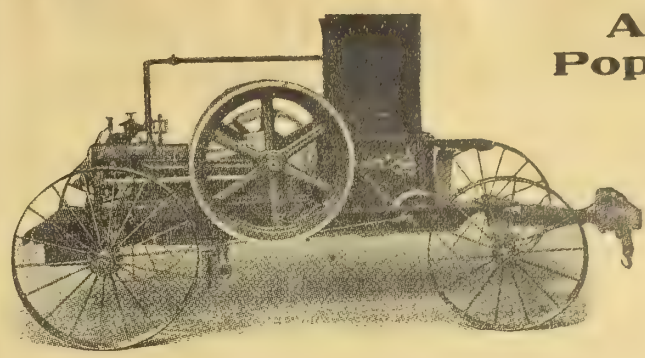

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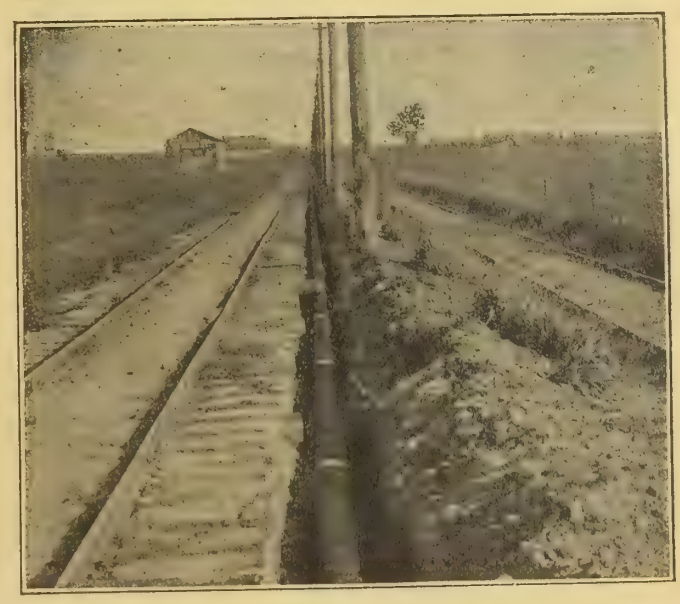

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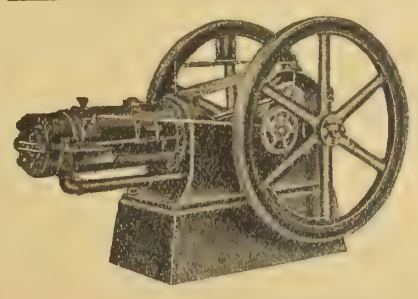

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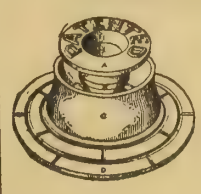

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If you would be successful with your bees use Mercer's Weed Process Foundation. Absolutely the best on the market. Send me your beeswax to make up.

H. J. Mercer, 948 East Second St., Los Angeles, Cal.
Dealer in All Kinds of Beekeepers' Supplies

San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, May 19th, 1909.

Butter.

Butter stands at last week's quotation, though sales are not brisk. The daily receipts are 35,000 to 40,000 pounds.

Produce Exchange wholesale quotations are as follows with actual selling price to the trade 2½c advance on Extras.

Creamery ex per roll	50
Firsts	47½
Dairy per roll	24
Eastern extra	47½
Cooking	20
Butterine	16@20

Cheese.

Southern California Anchor	18
Northern fresh	16
Anchor Young America	19
Longhorn	21
Eastern singles	20
Cheddars	19
Swiss	17@18
Imported Swiss	30
Daisy	20
Limburger	21
Oregon triplets	18
Twin	18½

Eggs and Poultry.

Eggs advanced slightly during the week and again sagged till they remain exactly as last week. Market is firm.

Eggs local candled	26
Eggs extra selected	28
Case count buying price	22

Dealers pay for live stock.

Hens per pound	15@17
Young roosters	16
Fryers per lb	23
Broilers per lb	26
Roasters	22
Old roosters	8
Turkeys	28
Geese	16
Ducks	16
Squabs	1.25@1.75

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs from 175 to 200 pounds	7¼
Prime steers	4¾@5
Heifers	4@4½
Calves per pound	5
Sheep ewes per head	3.75@4.00
Lambs per head	3.25@3.50
Wethers	4.50@5.00

Potatoes.

Wholesale prices are:

Sweets per box	2.25@2.50
Sweets choice	1.25@1.50
Sweets Red	1.50
New per box	1.25@1.35
Early Rose local	2.50@2.75
Burbanks local	2.75
Lompocs	2.60@2.75
Highland Fancy	2.25@2.50
Oregons Burbanks	2.60@2.75
Watsonvilles	2.75
Utah's	2.50

Onions.

Wholesale quotations:

Imperial Bermudas per crate	1.00@1.15
Texas Bermudas per crate	1.00@1.15
Coachellas	1.15@1.25
White wax per crate	1.10@1.25
Garlic	10@12

Vegetables.

Artichokes per doz northern	50@75
Artichokes locals	35@50
Asparagus green	6@7
Beets per sk	1.00@1.10
Bell peppers per lb	15@35
Beans string	7@9
Beans wax	7@9
Brussels sprouts per lb	9@10
Cabbages per sk	85@1.00
Cabbage red per lb	2@3
Celery per crate	6.00@6.50
Chili per lb	25
Chili dried	9@10
Chicory per doz	35
Cucumbers per doz hot house	35@1.60
Cauliflower per doz	85@1.00
Carrots per sk	1.00@1.25
Corn per doz	40
Chives per doz	1.00
Endive per doz	25
Egg plant	20@25
Green onions per doz bunches	15@20
Horseradish per lb	12
Summer squash	1.25@1.50
Leeks	35@40
Lettuce choice	60@65
Mushrooms per basket	3.00
Oyster plant	25@30
Okra per lb	25
Peas per lb	2½@3
Parsley doz	15@20
Parsnips	15@20
Rhubarb Northern per box	1.75@2.00
Rhubarb C. W.	50@80
Radishes per doz	15@20
Spinach per doz	15@20
Turnips sk	1.00
Tomatoes crate	1.75@2.25
Water cress	15@20

Citrus Fruits.

Navels fy	2.00@2.25
Navels ch	1.25@1.50
Tangerines halves	1.00@1.50
Grapefruit seedless	2.75@3.00
Grapefruit seedlings	1.00@1.50
Lemons fy	1.75@2.00
Lemons ch	1.25@1.75
Unpacked	1.00@1.35
Limes half box	1.50@2.00

Fresh Fruits.

Wholesale prices on the market are:

Apricots per crate	2.00@2.50
Baldwins 4½ tier	1.50@2.00
Bellflowers	1.50@2.00
Newton Pippins	2.25
W W Pearmains	2.00
Spitzenberg	2.25@2.50
Jonathans	1.75
Cherries white	75@85
Cherries black	75@90
Cherries per lb	6@8
Aligator Pears per doz	3.50@4.00
Custard apples per lb	10@15
Guavas	4@6
Pineapples per lb	10
Loquats per lb	2.@3
Pears box	1.00@1.50
Raspberries	5
Strawberries Brandywines	50@75
Strawberries ch	8
Blackberries	7@8
Gooseberries	8@10
Loganberries	10@12
Currants per crate	3.00

Dried Fruits.

Wholesale prices are:

Apricots	8@10
Evap apples fy per lb	8½
Figs loose white	6
Figs blk	5
Peaches in boxes	6@8
Peaches sacks	6@7
Pears	9@10
Plums pitted	8@9
Nectarines	9@10
Prunes 30's to 40's boxed	8
Prunes 40's to 50's	7½
Prunes 50's to 60's	7

RAISINS—Muscatels, 2-crown, loose, 50-lb. boxes, lb., 3½c; do., 3-crown, 4c; do., 4-crown 5c; sultanas, bleached, lb., 9c; do., unbleached, 3½@4c; new seeded raisins, 16-oz. packages, 6c; do., 12-oz. packages, 5c.

Beans Dried.

Wholesale prices are:

Pink No. 1	3.75@3.85
Limas per ctl	4.50
Black eyes	3.75@4.00
Lady Washington	5.15@5.25
Small White	6.15@6.25
Black eyes	3.75@4.00
Garvanzas	4.00
Lentils California	7.00@8.00
Lentils German	8.00
Bayou	3.50

Nuts.

Almonds IXL per lb	14@15
Ne Plus Uutra	14
Pecans polished	12@18
Peanuts Virginia	7
Peanuts California	5
Peanuts Jap	6@6½
Walnuts No 1	11@12
Chestnuts	13@14

Honey.

Wholesale quotations:

Extracted water white	8
Extracted Light Amber	6½@7
Comb W W	16
Comb white	15
Beeswax	30

Hay.

No old hay is being received and wheat and barley are selling f. o. b. cars about as quoted below.

Prices paid to producers f. o. b. Los Angeles are as follows:

New barley hay	13.50@15.00
New alfalfa	11.50@15.50

Grains.

Wholesale selling price f. o. b., Los Angeles:

Wheat new per ctl	2.40
Kaffir corn	1.85
Corn Eastern bulk	1.90
Egyptain corn	1.85
White oats	1.90
Seed Rye	1.80

Feed Stuff.

Wholesale selling price f. o. b., Los Angeles:

Cracked corn	1.95
Shorts	1.80
Bran	1.70
Cocoanut cake	1.35
Cocoanut meal	1.85
Cottonseed meal	1.25
Oil cake meal	2.50
Feed meal	2.00
Cracked wheat	2.50
Rolled Barley	1.70

PEELING ONIONS WITHOUT TEARS.

The work of skinning onions, which usually ends in tears, can be made a pleasure by pouring boiling water over them and covering a few minutes before peeling.—Woman's Home Companion for May.

If a mountain refuses to come to some men they put up a bluff of their own.

Cream Separators, all sizes, all prices. O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

San Francisco Markets

SAN FRANCISCO, May 18, 1909.

Butter.

Butter is firm at a cent and a half advance over last week's quotations. Receipts aggregate 144,000 pounds per day.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras per lb	26
California firsts	25½
California seconds	24

Cheese.

California flats fy	12½
Firsts	12
Seconds	11½
Cal Young America fy	16
Firsts	14½
Young American Oregon fy	16½
Eastern N. Y. Cheddars fy	17½
Oregon flat fy	16

Eggs and Poultry.

Eggs are in lighter receipt and a cent advance is noted for the week.

Official quotations of the S. F. Wholesale Dairy & Produce Ex. are:

Fresh ranch extras	27½
Eggs first per doz	26
Eggs second	24
Eggs thirds	23
Hens per doz	5.00@7.00
Hens extra	8.00@10.00
Young roosters	9.00@10.00
Old Roosters	4.00@5.00
Broilers per doz	3.00@5.00
Fryers per doz	8.00@9.00
Geese per pair	2.00@2.50
Goslings per pair	1.75@2.00
Ducks young	6.00@8.00
Live Turkeys	17@19
Dressed Turkeys	18@22
Pigeons young	1.75@2.00

Live Stock.

San Francisco prices gross weight:

Steers No 1	4½@4¾
Do second quality	4@4½
No 1 cows and heifers	3¾
Second quality	3½@3½
Hogs 100 to 140	7@7¼
Hogs 140 to 250	7¼@7½
Rough heavy	4½@5
Calves per lb	4@5¼
Lambs yearlings	5
Milk lambs	5½
Wethers No 1 unshorn	4¾
Ewes No 1	4

Potatoes.

Wholesale market quotations:

River white fy sacks	2.00@2.25
Early Rose	1.85@2.00
River Burbanks	1.35@1.50
Salinas Burbanks	2.40@2.47½
Sweets per crate	1.25@1.50
Oregons	2.35@2.50
New potatoes	2½@3

Vegetables.

Wholesale quotations:

Asparagus per bx	1.75@2.00
Bell peppers per lb	25
Brussels sprouts per lb	3@5
Cabbage per box	2.00@2.25
Cauliflower doz	75@1.00
Carrots per sk	65@75
Celery per doz	40@60
Cucumbers per doz	75@1.00
Chili peppers per lb	20@25
Egg plant per lb	20@22½
Green peas per sk	75@1.25
Mushrooms per lb	12½@25
Squash per box	1.00@1.25
Onions green per box	40@50
Rhubarb per box for bay	85@1.00
String beans	8@10
Tomatoes box Mexicans	1.00@1.40
Wax Beans	10@12½
Garlic new	8@9

Onions.

Onions Oregons	2.35@2.40
Australian Brown	4.00
Texas Bermudas per crate	1.25@1.35
New green per box	65
New red per sk	1.25@1.35
Silverskin	75@85

Citrus Fruits.

Navels fy	2.00@3.25
Choice	1.75@2.25
Tangerines per crate	75@1.00
Mandarins	75@1.00
Grapefruit seedless	2.00@3.25
Grapefruit seedlings	1.00@1.75
Lemons ch	1.75@2.50
Lemons fy	2.75@3.25
Limes	4.50@5.00
Limes Cal sm box	1.00@1.25

Fresh Fruits.

Bellflowers	1.00@1.35
Bellflowers No 2	60@1.00
Cherries purple Guigne	60@75
Cherries Black Tartarian	75@1.00
Cherries loose black per lb	5
do white	3½
Cherries white	50@65
Newton Pippins	1.35@1.50
Ben Davis	1.25@1.65
Winter Nellis	1.25@1.65
Other Kinds	75@1.00
Strawberries per crate	50@65
Malindas per chest	3.50@5.00
Longworths per chest	4.00@7.00
Pineapples per doz	3.00@5.00
Raspberries per crate	2.00
Gooseberries per drawer	40@65
Currants	1.50@2.00

Dried Fruits.

Prunes 4-size basis	
Santa Clara	2
½c premium for larger sizes	
Apricots per lb; Choice 8½; fancy 10½@11.	
Peaches—Choice 4¾; fancy	6@7½
Apples evap	5@7½
Pears	5@8½
Figs	2½@
Nectarines	5@
Pitted Plums	7@

RAISINS—1908 crop, f. o. b.: Fancy Seeded No. 16, cartons, 4½c; do, No. 12, 3¾c; do, Choice, No. 16, 4c; do, Choice, No. 12, 3¾c. 50-lb. bxs: Loose Muscatels, Standard, 4-crown, 4c; 3-crown, 3c; 2-crown 2½c; Seedless Thompson, unbleached, 3½c; Seedless Sultanas, unbleached. 2¾c; Dried Grapes, 2c; London Layers, clusters 6-crown, $3; 2-crown, 90c; 3-crown, $1; 4-crown, $1.50; 5-crown, $2.50.

Nuts.

Walnuts S S No 1	9
Walnuts No 2	
No 1 hard shell	8½
No 2 hard shell	
Ne Plus Ultra	10
Almonds Nonp	11
Almonds IXL	10½@1
Languedoc	
Pecans	15@1
Chestnuts	7@

Beans Dried.

Limas	4.10@4.2
Pink	3.15@3.2
Small white	5.75@6.0
Large white	4.75@4.8
Black eyes	3.25@3.5
Red kidneys	3.85@4.0
Garvanzas	3.00@3.5
Bayo	5.25@5.2
Horse beans	2.00@2.
Cranberry	4.85@5.

Hops.

Hops 1908 crop	5@
Old crop	2¼@
1909 crop contracted for at	9@1

Honey.

White comb	11@12½
Light Amber	9@1
Extracted W W	7@
Extacted light amber	6@
Beeswax No 1 per lb	28@3
Beeswax No 2 per lb	23@2

Hay.

Somers & Co. say under date of May 15: No. 1 qualities of new volunteer oat and barley hay are being freely offered for delivery here, at from $14.00 to $16.00 per ton. As opposed to this holders of old hay are asking from $22.00 to $25.00 per ton. The result is that the new hay is finding ready sale and consumers are all taking hold of it with the greatest activity, while the old hay drags and sales can only be effected at reductions in price, and with the greatest effort. It is natural to suppose that the consumers here will exert every energy to obtain and use the new hay where there is a saving from $8.00 to $10.00 a ton on every ton which they feed.

Crop conditions are apparently good. The supply of hay will be probably about a normal crop, our advices indicating that in those section where the yield will be light, the increased acreage will more than compensate for the difference in the yield. It is absolutely impossble to predict market conditions and prices, other than that the generous supplies of new hay which will be increasing every day will undoubtedly cause the market to assume a rational condition, and hay will sell as it has normally in previous years. In many ways this season is an unusual one. Looking over our files, we notice that for the last four years the first car of new hay arrived from May 16th to June 6th. This is now only the 15th of May, and yet we have had on our market several hundred tons of new crop, and advices are of many hundred tons on the move in toward this city. In view of the fact that this is rather a late season, these early arrivals in such quantity show clearly the unusual activity in those sections where hay is maturing early, and the efforts that are being made to take advantage of the shortage in the old crop.

Alfalfa has practically come to a standstill, as there is no demand for the first cutting and the second and third cutting are not yet ready for the market. It will probably be some weeks yet before the market is firmly established. Straw is in good demand and sells readily at quotations. Quite a little demand has developed lately, and this article is doing better.

Owing to irregular arrivals and unsetled conditions of the market on new hay, we quote the general range of prices on today's market on the old crop only as follows, viz:

Choice wheat hay	22.00@25.00
No 1 wheat or wheat & oat	20.00@23.00
No 2 wheat or wheat & oat	17.00@20.00
Choice tame oat	20.00@23.00
Other tame oat	18.00@20.00
Wild oat	15.00@19.00
Stock hay	7.00@10.00
Alaflfa	13.00@17.00
Straw	60@80

Grains.

Wheat No 1	2.10@2.15
Barley	1.52½@1.60
Barley common to fair	1.45@1.55
Oats white	2.15@2.25

Oats gray	2.05@2.15
Rye new crop	1.80@1.85
Corn Egyptain	1.60@1.65
Corn Cal sm round	1.80@1.85
Alfalfa seed, Cal	16@18
Mustard yellow	5¾@6
Mustard brown	3¾@4½
Millet	2½@3
Broom corn seed per ton	23.50

Feed Stuff.

Bran per ton	29.00@30.00
Feed cornmeal per ton	37.00@38.00
Cracked corn per ton	38.00@39.00
Rolled barley per ton	32.00@33.00
Rolled oats per ton	42.00@43.00
Oil cake meal per ton	38.50@40.00
Cocoanut cake per ton	25.00@26.00
Middlings	33.00@35.00
Mixed feed per ton	28.00@32.50
Shorts	31.00@32.50

Citrus Market

LOS ANGELES, May 19th, 1909.

The tone of the orange market is somewhat more favorable, and while the prices may not be considered higher, there is a feeling prevailing that the worst of the season has passed. The demand is better and lower grade fruit does not remain unsold so long as formerly. The further in the season we go the more evident it becomes that the crop this season will be a record breaker. There are yet to go twelve hundred or more cars of seedlings, sweets, Mikes, bloods, and other varieties. The Valencia crop will probably be double that of last year. These have not been put on the market yet excepting in small quantities where the growers have been compelled to lighten the trees so that they could carry the coming crop. It is possible that the Valencias may not command as good a price as last year.

Lemons are in rather a bad way owing to weather conditions. The only thing which will lift them out of the hole is good warm weather which cannot be depended upon in the East until the warmer days of June.

Shipments.

Total shipments to date this season since November first 25,072 cars of which 21,927 were oranges, and 3,145 lemons. Total at same date last season, 21,755 of which 19.280 were oranges and 2,475 lemons.

NEW YORK, May 17.—Forty-nine cars oranges and two cars lemons sold. Market steady on good stock, about firm on poor grades. Steady on lemons. Weather cool, cloudy.

NAVELS—	Average.
Lion Head I L Lyons Sons	2.20
Tiger Head do	1.80
Uplander Orange Growers' Ft Co	1.90
Old Mission C C Chapman	2.25
Golden Eagle do	1.85
Independent Growers' Ft Co	2.15
Rialto Girl do	2.25
Laverne Heights L V H P Co	2.50
Homegrove S A Ex	2.00
Family QC Ex	2.10
Violet DM Ex	2.15
Quail OK Ex	2.10
Queen Bee QC Ex	1.80
Green Crown ACG Ex	1.55
Ben Hur AH Ex	2.10
Fiesta Riverside Ex Riverside	2.15
Riverside Ogs Riverside Ex	1.50
La Paloma Riverside Ex	1.80
Quail OK Ex	2.05
Sweetheart AF Ex	2.60
La Mesa Riverside Ex Riv	2.15
Pointer ACG Ex	1.70
SEEDLINGS—	
El Narajal R W Blan selected	1.55
LEMONS—	
Independent Growers' Ft Co	3.05
Choice	2.20
Orchard Run	2.55
ST. MICHAELS—	
Aurora	2.25
Climax	2.10
Old Mission	2.50
Golden Eagle	2.25
TANGERINES (Halves)—	
Black Hawk	1.10
Quail	.95
GRAPEFRUIT—	
Extra Choice	2.00
Blue Seal	1.35
Southland Beauties	2.35
Tallyho	1.80
Humming Bird	1.35
BUDDED—	
Red Globe	1.60
Humming Bird	1.65
Red Globe	1.65
SEEDLINGS—	
Extra Choice	2.00
Standard	1.90
Yankee Doodle budded seed	1.30
SWEETS—	
Eagle	1.55
Blue Globe	1.75
LEMONS—	
Homer	1.80
Camel	1.40

ST. LOUIS, May 17.—Weather favorable. Market weak on large sizes. Thirteen cars sold.

NAVELS—	Average.
Selected N W Blanchard	1.65
Newsboy R-H Ex Redlands	1.90
Belt R-H Ex E Highlands	2.00
Greyhound San Antonio Ex	2.05
Plain Ends R-H Ex E High	1.50
Select San AntonioEx	1.70
LEMONS—	
Circus Sparr Ft Co	1.30
Senorita do	1.30
Palm Tree Arlington Heights Ex	1.45
Arab San Antonio Ex	1.65
Select	1.90

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

CINCINNATI, May 17.—Weather warm, market weak, declining. Five cars navels and two cars lemons sold.

NAVELS—	Average.
Duck San Antonio Ex	1.40
Swan Riverside Ex Riv	2.05
Greyhound San Antonio Ex	2.00
Select do	1.85
Orchard Run Riv Ex Riverside	2.00
California Orange do	2.00
Owl OK Ex	2.05
LEMONS—	
Owl OK Ex	.95
Cry Baby Flagler Ft Co	2.05

BOSTON, May 17.—Twenty-eight cars sold. Deather cool, cloudy. Market is practically unchanged.

NAVELS—	Average.
Orchard National Orange Co	3.00
Standard do	2.40
Knight Ely Gilmore Ft Co	2.25
Anemone California Cit Union	2.15
E High B E High C F Assn	2.05
Flower Ely Gilmore Ft Co	2.00
Golden Orchard Independent Ft Co	2.00
Gold Buckle R-H Exchange High	2.40
Highgrove Riverside Ex High	2.15
Crocus San B Ex Yerkes Spur	2.30
BLOODS—	
La Mesa	2.20
Sugarloaf (half boxes)	1.05
GRAPEFRUIT—	
La Mesa	3.10

LEMONS—Tunnel, Semi-Tropic Exchange, Fernando, $2.05; Urchin, $1.30; Pet, San Antonio Exchange, $2.85; Greyhound, $1.70; Duck, San Antonio Exchange, $1.50; Bridal Veil, orchard run, Limoneira Co., $1.40; White Cross, $1.20.

CLEVELAND, May 17.—Weather cool. Market unchanged on good stock, lower on poor stock. Ten cars sold.

NAVELS—	Average.
Tiger San Bernardino Ex Colton	2.30
Gavilan Riverside Ex Riverside	1.55
Golden Riverside Ex Rvierside	1.90
Royal Knight R-H Ex Redlands	2.20
Belt R-H Ex E High	1.95
Cluster San Antonio Ex	1.65
GRAPEFRUIT—	
Primrose, Duarte-Monrovia Ex	2.45

PITTSBURG, May 17.—Twenty cars sold. Market very steady on oranges and lemons. Weather favorable.

NAVELS—	Average.
Orchard National Orange Co	2.85
Blue Mountain P & McKevitt	1.85
Victor SA Ex	1.85
Coyote OK Ex	2.25
Pride of Cal Riv Ex Riverside	1.90
Jasmine DM Ex Monrovia	1.80
Homegrove SA Ex	2.00
Select SA Ex	2.00
Swallow OK Ex	1.90
Volunteer SA Ex	1.75
Captain do	2.00
Owl OK Ex	1.95
Standard National Orange Co	2.40
Pansy Colton OG Assn	2.05
Violet DM Ex Duarte	2.30
Cal Orange Rix Ex Riverside	1.95
Dan Patch AF Ex Bloomington	1.85
Owl OK Ex	2.00
Victor SA Ex	1.85
Coyote OK Ex	1.60
Captain SA Ex	1.75
Duck do	2.00
Cluster do	1.85
LEMONS—	
Blue Jay OK Ex	1.50
El Modena SS Ex El Modena	1.55

PHILADELPHIA, May 17.—Sixteen cars navels, three cars St. Michaels, three cars lemons and one mixed car sold. The weather was favorable, market unchanged.

NAVELS—	Average.
Pointer ACG Glendora	2.40
Coyote OK Ft Ex	1.90
Pointer ACG Glendora	2.27
Blue Jay OK Ex Ft Ex	2.10
Coyote do	1.95
Poitner ACG Ft Ex Glendora	1.10
Colonial San Antonio Ft Ex	1.75

LEMONS—On Honor, Lemon Grove Fruit Growers' Association, Lemon Grove, $1.60; Standard Growers, Lemon Grove Fruit Growers' Association, $1.20; Sunside, Santa Paula Citrus Association, Santa Paula, $1.55; Anemone, extra choice, California Citrus Union $2.85; Sardonyx, choice, California Citrus Union, $1.35.

TANGERINES—Quail, O. K. Fruit Exchange, 80 cents, half boxes, 65 cents.

VALENCIAS—Pointer, Azusa-Covina-Glendora Fruit Exchange, Glendora, $2.60.

GRAPEFRUIT—Stag, Azusa-Covina-Glendora Fruit Exchange, Glendora, $2.85; Anemone, extra choice, California Citrus Union, $2.75.

ST. MICHAELS—Argonaut, Semi-Tropic Fruit Exchange, Fullerton, $2.50; Manzanita, $2.35; Anemone, extra choice, California Citrus Union, $2.65; Monogram, California Citrus Union, seconds, $2.55; Aurora, fancy, orchard run, E. Peycke Co., $2.35; Victory, orchard run, E. Peycke Co., $2.35; Victory, Orchard run, California Citrus Union, $2.30; Climax, choice, orchard run, E. Peycke Co., $2.15.

The thing that goes the farthest
Toward making life worth while,
That's worth the most that costs the least,
Is just a pleasant smile.
'Tis full of worth and goodness, too,
With manly kindness blent,
'Tis worth a million dollars,
And it doesn't cost a cent.
—American Grocer.

THINNING FRUIT.

(Continued from Page 590.)

of apples. The fruit is generally picked on the installment plan, and it is possible to mature a large crop of fancy fruit; and fruit that is small may be left until it reaches the decided size. Pears running from 135 to 150 to the box are considered ideal size, and pears for such a pack must measure from two and one-fourth to two and three-fourths inches in diameter. Pears larger than three inches are really not as desirable for the fancy fruit trade as those of smaller size. The fruit stands like a pear that can be sold at a profit, two for five cents, and there is no profit to be made in selling the larger ones for that price, and they are not large enough to sell for five cents each.

Thinning Peaches.

In growing peaches much of the thinning is done with the prunning shears during the pruning season, but additional hand-thinning is absolutely necessary. A good grade of peaches should run less than 90 to the box, and we may say it seldom pays to ship smaller fruit. A size that will pack less than 80 to the box is desirable. The young peach orchard that has been properly pruned will do well to average a box of fruit to the tree during its fourth season's growth, and the yield should increase at the rate of about two boxes per tree per year. Unless the trees have been exceptionally well pruned and cared for, they will rarely more than hold their own after the eleventh or twelfth year. The one object of thinning, as practiced with the stone fruits, is to produce better fruit. The thinning should be done before the foliage gets too heavy and before the pits begin to harden. By carefully thinning a few trees and estimating the number of fruits left, one can soon form an ideal to work by. The pruning shears may be used as a help in thinning, and fruiting wood not necessarily needed may be removed entirely.—O. B. Whipple of Colorado Agricultural College.

Intense Cultural Methods Pay.

Mr. A. R. Wilfley of Denver last week paid $35,000 for the Wilson & Heltman grove of 11 acres located at Whittier. This is the "top notch" so far as price for orange property is concerned. The grove is set solid to 16 year old Valencia trees, no buildings. The crop now on trees is estimated at 8,000 field boxes. This grove has been brought to its present high productive state by good care and the liberal use of fertilizer, twenty pounds per tree, of the A. C. W. Special Mixture, applied in two ten pound applications, winter and summer.

Mr. Wilfley purchased the grove as an investment and is continuing the methods of the former owners in fertilization, irrigation, etc.

The price paid for this grove points out forcibly that a grove that has good natural conditions together with proper help that will produce 7,000 to 8,000 boxes is worth a good deal more than one that can only produce 2500 or 3000 boxes. In other words the best is the cheapest, as the fixed expenses are the same in both cases.

One other grove in Southern California, Mr. Wilfley made an offer to purchase was Collins Bros., "El Dorado" grove at Charter Oak. The offer was refused as the property is not for sale. This is a nine year old grove of Valencias, crop now on the trees estimated at 7,000 boxes.

This grove has been a wonderful producer. At eight years it made 5,000 boxes, at six years 4,221. The grove has had two good dressings of manure in nine years and A. C. W. fertilizer is applied at present, at the rate of twenty pounds per tree of a special mix to order of the owners. The trees have had fertilizer twice a year from time of planting.

For Mehring Foot-Power Milking Machines see O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles,

---

OPPOSED TO SLANG.

Donald had been to Sunday school, and on coming home was asked what he had learned. The lesson was the story of Joseph, and the small learner was evidently very full of his subject.

"Oh," he said, "it was about a boy, and his brothers took him and put him in a hole in the ground; and then they killed another boy, and took the first boys coat and dipped it in the blood of this boy and—"

"Oh, no, Donald, not another boy!" his sister interrupted, horrified. But Donald stood his ground.

"It was, too," he insisted. Then he added, "The teacher said 'kid,' but I don't use words like that."—Woman's Home Companion for May.

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Enjoying the balmy air of the South or the cool and bracing air of the North.

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DYNAMO AND ALL MACHINES

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WESTERN

We have no sliding scale of quality. The changes that have been made in the design, material and construction of our engines have all been in one direction—that of producing the highest possible ***efficiency, economy*** and ***endurance,*** for the lowest possible cost. Ask the users of ***Western*** engines if we have succeeded.

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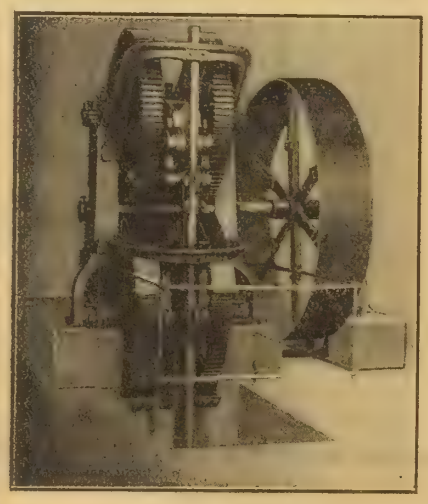
Northern Branch: San Francisco, Cal. **Los Angeles, California**

The Smooth Running, Noiseless Pomona Deep Well Pump



It is thirty to fifty per cent more efficient than any centrifugal pump ever made. No high speed bearings to cut out. All breakages and rod troubles eliminated.

This is the only pump you can afford to buy if you consider your own interests. Hundreds of satisfied users testify to this.

Used by the best water companies who know what a good pump is.

Send for a catalog or what is better come to POMONA and let us show you some of these plants in operation.

POMONA MANUFACTURING CO.
POMONA, CALIFORNIA

THE
Latest Deep Well Turbine Pump

Guaranteed to deliver from 100 gallons per minute upwards, depending on the diameter and capacity of well, from a depth of 50 to 300 feet below the surface. Can be either belt driven or direct connected to electric motor as occasion requires.

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A deep well pump that has no valves or plungers to wear or get out of order, no gears, consequently no noise or breaking of teeth.

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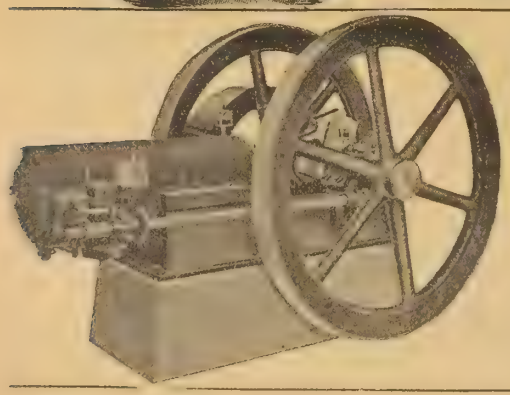

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The Right Engine at the Right Price

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The Hercules Gas Engine Works
351 Market St., San Francisco
Telephone Douglas 3630

From photograph showing amount of

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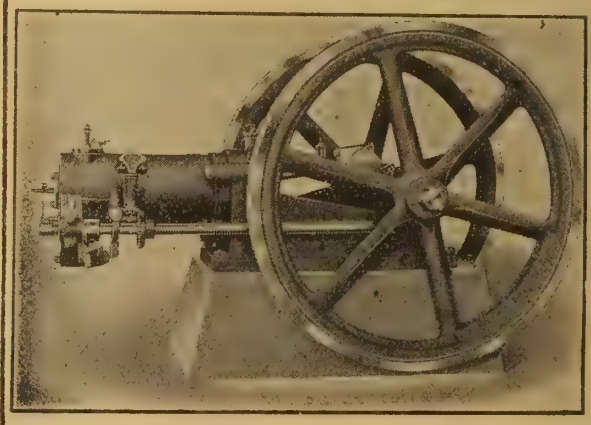
made by four men from 10 bbls. of cement in 9 hours — 280 two-foot joints, or 560 feet. This pipe was made with the

"K T" Moulds

An equal amount can not be made with any other tools in the same period of time. Write for "Brown Book" and price list.

THE KELLAR-THOMASON MFG. CO., Covina, Cal



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Hoisting and Marine

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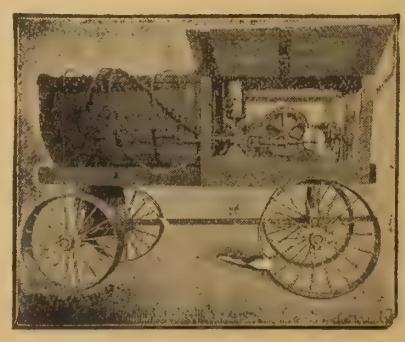

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Equipped with their air-cooled engine, which is a great advantage, making it much lighter and easier to operate. Send for circular and Price List 6802 to

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California Cultivator

Published Weekly — One Dollar a Year

Los Angeles — May 27, 1909 — San Francisco

"The Painted Woods Enshadowed or Agleam"

Just to lie quietly and half a-dream,
Without a thought or care;
To listen drowsily ;
To view from half-shut eyes
The painted wood enshadowed or agleam.
So lies a babe against the bosom fair
That nourishes—now lists the lullabies
With lowered lids, now slowly doth upraise
Its long still wondering gaze
Unto the heaven of its mother's eyes.

And now again—O softly breathe !—I see
Across yon leafy path that winds the wood
A shy brown mother-quail come forth to lead
Her pretty brood.
Alas ! the alien meets her startled ken,
And lo, in an eye's twinkling every one
Has disappeared, has gone,
Has turned a crumpled leaf—all's still again.
Aha, my woodland babes, I see you feed
(I know the lore of fairies) on fern-seed.

—Marion Cummings Stanley in Out West Magazine.

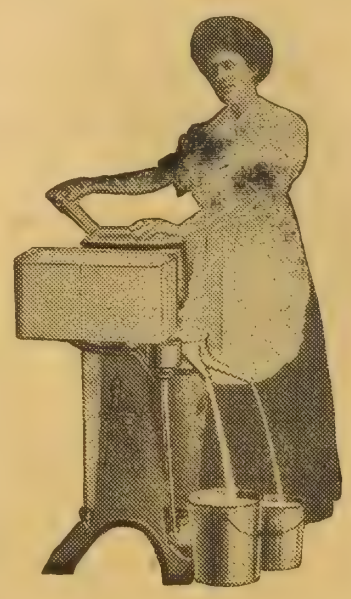
Sticks in Your Eye

THE BEAUTY and convenience of Sharples Tubular Cream Separators stick in your eye. You simply can't forget them.

The supply can is so steady and easy to fill. It need never be moved to take the Tubular apart. All separators, except the Sharples, have cans set right above the bowls---such cans must be lifted off before the machine can be taken apart, which is doubly unhandy if the can happens to be full.

The few, simple running parts are all enclosed in a dust proof case in the head of the Tubular. They are entirely self oiling, needing only a spoonful of oil poured right into the gear case once a week. The gear case cap lifts off without unfastening anything. This makes Tubulars very neat.

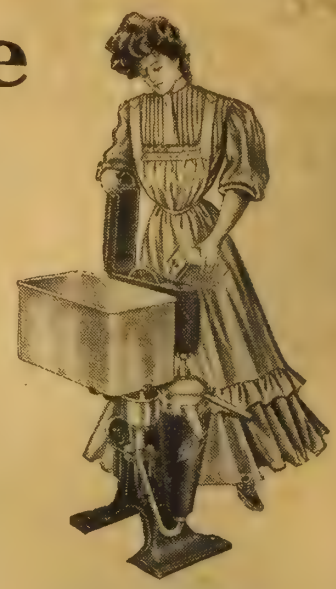
The light Tubular bowl, hung from a single frictionless ball bearing, and driven by self oiling gears, makes Tubulars so light running that the medium sizes can be turned by one who is seated.



The top of the supply can, on the largest dairy Tubular, is only 3 feet 3 inches above the floor. Observe the plumb bob on the back of this Tubular "A" for quickly leveling the machine and keeping it level—another exclusive Tubular advantage.

Your wife will appreciate that, and also the light, quickly washed dairy Tubular bowl which contains one tiny, instantly removable piece very much like a napkin ring in shape and size.

Tubulars run remarkably easy because they are **built remarkably well and in the only right way.** They skim twice as clean because **they develop twice as much skimming force.**



To oil the Tubular, simply pour a spoonful of oil into the gear case once a week. The gear wheels throw this over themselves, and the ball bearing supporting the bowl.

Avoid wishing you **had** bought a Tubular by **buying** a Tubular. Built in the world's greatest separator factory. 1908 sales way ahead of 1907—out of sight of most, if not all, competitors combined. Our handsome 1909 Tubular "A" is making 1909 better still. Write for catalog No. 260.

The Sharples Separator Co.

Toronto, Can. **West Chester, Pa.** Portland, Ore.
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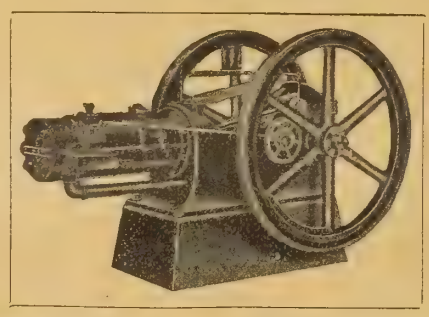
Not too Light
But Just Right

Send for Bulletin No. 12.



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A word in favor of the **Columbia Ann Arbor Belt Power Hay Press:** Three years ago we started to sell these power presses. We now have in the field, and orders written up which will go into the field within the next ten days, 34 of these presses. Last year one of our 17 x 22 steel frame power presses balled 3800 tons of hay, and averaged a little over 53 tons per day. This is a record that we can assure you no other press has ever made in this territory, or anything near it. If you are a friend to yourself you will thoroughly investigate the power hay presses before placing your order for a press with anyone. We court the closest investigation, as we have the conclusive evidence that we have what you are seeking. You will find us at 110-112 North Los Angeles St.

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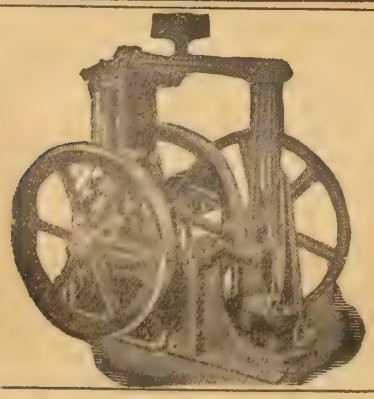

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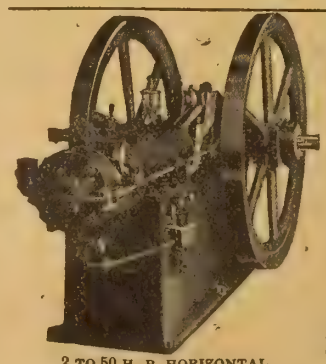

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California Cultivator

Vol. XXXII—No. 21 Los Angeles, California, Thursday, May 27, 1909 Subscription $1 a Year

A Review of American Country Life

Written by Judge Peter J. Shields of Sacramento and Read at the Last State Fruit Growers Convention

LIFE in the open country, under the clear sky and in the midst of green fields, has never failed to excite the praise and move the fancy of the world. There industry does not hum, but is full and abundant; life is peaceful, but of a measureless range; and the silent forces of nature stir only man's best impulses. Such a life requires no praise or appreciation.

No Defense Needed.

Nor shall we here attempt any praise or defense of farm life, nor of the men who live it. With outdoor conditions has ever gone a type of manhood that was clean in its morals, sturdy in its courage, useful in its industry and loyal in its patriotism. Country life has given to America its ideals, and our institutions are peculiarly its product. Its freedom and independence and repose are everywhere expressed in our Nation's aim and purpose. It has all of its strength and reserve and courage. While we remain a Republic, dedicated to justice and equality, we must remember from whence our strength and power came; and we must foster our country life that it may supply the influences which will keep our Nation ever vigorous and young.

But, mindful of these conditions, we are mindful too that this life has its weaknesses as well as its strength, and our purpose today is not to rhapsodize or appreciate its better side, but to study its conditions as they are, to endeavor to determine its value and to indicate, if we can, how its condition, good as it is, can be made better, and its usefulness, great as it is, may be enlarged. On its weaker side it may be said of farm life that it lacks social advantages and educational opportunities. The life is too often solitary and isolated, and the range of its activities narrow and circumscribed. Too much of its labor is mere drudgery, and it lacks the alluring prospect of easy profits or large wealth; its earnings are too often small; its work hard, and its hours of labor long and monotonous, lacking stimulation or enthusiasm. Many elements of the home life are meagre, the farm women lack companionship; their work is hard, and routine uninteresting. A combination of these influences tends towards a general atmosphere of repression. Over wide areas these conditions happily do not prevail, and everywhere they are becoming outgrown. When we were going through that phase of our country life in which these conditions were most prevalent, our cities began to grow and our youth in a steady stream left the, to them, unatractive farms for the pleasures and opportunity of the apparently larger life. Under the influence of this desertion rural conditions further degenerated, farm life languished and the cities grew apace. This disproportion, this condition of social and industrial unbalance excited first interest and then alarm. Our people began to study the consequences to the individual and the state of rural decay, we began to see country life with a better understanding and consequently a new appreciation. We began to see that the country produced a different although not necessarily a better man than the cities, a man indispensable to our social soundness. The full industry of the country, its beauty and its sweetness, its dignity and its peace were reflected in the character and personality of the man who grew up there, and gave him a depth and earnestness and sincerity which made him big and effective.

Moral and Creative.

We saw that the country was free from those temptations which beset the path of the city youth, and that a simple honesty was characterisic of it. Its industries were moral and creative, its wealth was cleanly realized from the very elements by the application of honest toil. With a new force we saw that its products fed the industries of the cities and created the commerce of the Nation. With the continued growth of our cities their social problems began to develop. Crime increased, and the overcrowded tenement districts and large numbers of helpless poor beban to appear. The question of what to do with our great mass of dependent children began to press for solution, and divorces so multiplied as to become a national scandal. And we then observed that these conditions did not arise in rural communities, that its wholesome industrial conditions forbade them, that they were the sole product of the cities, and that the country's only part in their existence was to pay the price of their correction and support. We came early, too, to realize the political value of a country citizenship. It early appeared that it cast a steady and conservative vote. Without passion or hysteria, having peculiarly high patriotic and moral ideas, it moves to the solution of governmental problems slowly but sternly. We saw that it was the nation's hostage against the forces of revolution and unrest.

These considerations newly realized or newly learned gave to country life an enlarged appreciation and a new eminence, and lay at the base of a revived national desire and purpose to foster it as the very foundation of the nation. As a result of these considerations the question is constantly, though crudely, asked as to the relative advantages of the two types of life, as to which produced the better man. This admits of endless discussion, but one without profit. It is readily apparent that both conditions are indispensable to a large national existence and symmetrical social growth. That a man should follow that life in which he can find the most happiness and do the best work is self-evident, and if that be a city life or a country life, that is for him the one to follow. There is enough in each to furnish the materials of a useful and happy life, of distinction and greatness. The one undisputed fact in their comparison is that success in either is a question of interpretation, of seeing large. Our great cities are rich in stimulation for those who can feel it. If the city boy once knows the thrill of the high life about him, he may pursue its best purposes to distinction. If the country boy once catches the inspiration of his noble surroundings; if he once sees the size of the factors with which he is dealing, the big thought makes him a big man, and masterfully and with an enthusiasm which ennobles his labors, his life tends naturally to fine achievement.

Manifestly the thing to do is to cease comparing the two and go about controlling the forces back of each that the youth of both shall hear the right call and that their progression be directed towards the high places. Each at its best is good enough and the nation is more concerned in knowing that each is lived to its best than that either is the more meritorious. The general welfare is served when governmental and social forces are so formed that city and country life, each in its own field, shall be perfected and when both working together shall round out a sound and useful society.

A Better Day.

Growing out of this new national purpose to strengthen agricultural life many influences conspired to effect its betterment. The city man regarded his country brother with a new respect; the country man felt a new pride in his calling. Having more friends, in its prosperity many strong influences combined to aid it. Commerce ramified and extended and the farmer learned business from the city merchant. Transportation facilities multiplied and gave the farmer new and better markets and enlarged the range of his life. Agriculture was given a place in the President's Cabinet, and the Department in recent years has been doing a great good to the industry which it was created to serve. Agricultural newspapers have everywhere increased in number and improved in quality until they have become an invaluable aid in improving farming conditions. And then the improvement and multiplication of agricultural schools and colleges has come to do all that can be done to prepare the country man to live a country life.

The Commission.

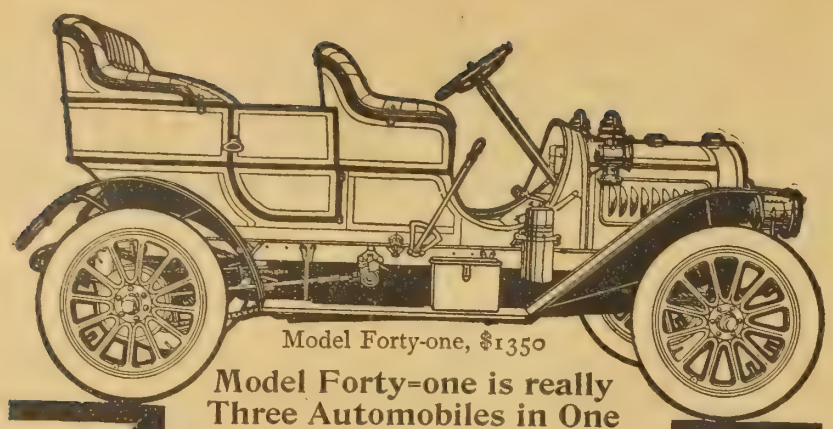
The latest agency which has offered itself to the out-of-door man, the latest evidence of the nation's concern for the farmer, was the appointment by the President of the Country Life Commission which visited us.

To determine how this commission can be of help to country life, we have only to recall the unfavorable features of that life and inquire how they may be remedied. These disadvantages are pretty generally set forth in the letter of the President and the correspondence of the commission. Happily they have little reference to California conditions. Among them is the isolation and lonesomeness of farm life. This the Commission may point out as it has been pointed out countless times before, but it cannot recommend legislation for its correction. Nor can it favor laws abolishing unintelligent methods, long hours and heavy, unprofitable and uninteresting work. These are personal and industrial conditions, beyond the reach of legislation. Health restrictions may be legally and practically enacted to improve city conditions, but if the rural sanitation is bad, laws promise little more remedy than mere suggestion. The President suggests a study of the condition of the rural schools. They are now good, and substantially meet the demands made upon them. Of what avail to improve a course of study if the school is open too short a time, or if the children, at work on the farm, do not attend it? Of what use to commend a more capable teacher if the people cannot afford to pay the price of his employment?

Good Roads A Factor.

Our people are now building better roads as fast as they feel the need of them, appreciate the loss they sustain through the use of poor ones.

(Continued on Page 612.)



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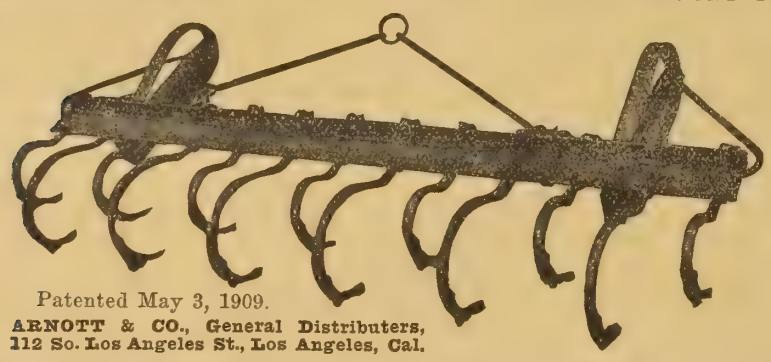

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With the Citrus Growers

FRUIT ACREAGE.

FROM report of the State Board of Equalization the Riverside Press makes up the following summary of the fruit acreage of the state. The acreage in oranges figures out 113,500, with 17,000 in lemons. The leading citrus growing counties with the acreage in each are as follows:

County—	Oranges	Lemons.
San Bernardino	36,500	2,600
Los Angeles	24,835	5,115
Riverside	21,400	1,400
Tulare	12,500	800
Orange	10,000	1,300
Butte	2,275	....
San Diego	700	2,100
Ventura	1,300	1,250
Santa Barbara	....	1,600
Fresno	890	240
Yuba	750	....
Placer	580	....
Sacramento	560	....
San Luis Obispo	90	300
Stanislaus	300	....
Tehama	150	....
Sonoma	110	....
Colusa	100	....
Kern	80	....
Merced	80	....
Solano	80	....

The acreage in peaches figures 72,455. The leading counties in acreage of this fruit are as follows:

Placer	15,760
Tehama	7,700
Santa Clara	6,320
Tulare	5,560
Solano	3,750
Butte	2,450
Kings	2,345
San Joaquin	2,200
Los Angeles	2,200

In French prunes the total acreage is 71,100. The leading counties are as follows:

Santa Clara	43,800
Sonoma	6,000
Solano	3,500
Tulare	2,250
Alameda	1,700
Santa Clara	950
Eldorado	880
Kern	460

The acreage in apricots is given as 22,600, and the leading counties are as follows:

Santa Clara	5,550
Orange	2,000
Los Angeles	1,750
Alameda	1,130
Fresno	950
Ventura	900

The acreage in apples is given as 20,400 and the leading counties are as follows:

Santa Clara	7,000
Sonoma	2,800
Los Angeles	1,450
Monterey	760
Alameda	560
Napa	550

It will occasion some surprise to find this acreage in apples is quoted from Los Angeles county, but the orchards must have been actually returned to the county assessor. San Diego county has 260 acres in apples and San Bernardino 180.

There are 10,700 acres in plums, other than prunes, the leading counties being as follows:

Santa Clara	2,950
Placer	2,860
Napa	1,600
Solano	1,100
Los Angeles	460

There are 5,820 acres reported in cherries. The leading counties being as follows:

Santa Clara	1,600
Alameda	960
Sonoma	600
Solano	405
San Joaquin	355
Napa	330

There are 3,900 acres reported in figs, Fresno county being credited with 700.

The acreage in olives is reported 11,800, the leading counties being as follows:

Los Angeles	3,020
Sonoma	1,000
Fresno	800
Butte	700
Riverside	685

The acreage in almonds is surprisingly large, being reported as 12,580. The leading counties are:

Contra Costa	2,250
Los Angeles	1,400
San Joaquin	1,400
Alameda	1,200
Solano	1,000
Stanislaus	650

The acreage in walnuts figures out 7,000, and this acreage is practically all in Southern California, as the following figures will show:

Los Angeles	2,660
Orange	2,220
Ventura	1,875
Santa Barbara	520
San Luis Obispo	450

IRRIGATION AGAIN.

The answers which were received to the letter on Irrigation have caused much favorable comment and are being most favorably received by Cultivator readers. There was one answer received too late for insertion in the former issue which contained the bulk of the article. We now give it because it has some points of value. It was written by

G. W. Earl, Gilroy.

1. I prefer furrow system.

2. Shallow furrow but deep enough to confine the water in the furrow.

3. I have not used subsoiler.

4. Soil should be saturated down to moist soil. In gravel soil water should run an hour and in clay all day. My soil grades from almost pure clay to gravel.

5 and 6. I run the main ditch through the center of ten acres and turn all the water in a furrow that it will hold until the water reaches the end and then place a piece of pipe in the bank of the ditch, that will supply a sufficient quantity of water to reach the end of the furrow. If there is too much water an obstruction can be placed in the pipe. Old pipe of any kind can be cut into 18 to 24 inch lengths. For short furrows old garden hose can be cut into lengths with a hatchet.

7. Connect the lower end of the furrows to prevent overflow.

8. Cultivate as soon as the ground is dry enough and follow with acme harrow.

9. Whenever my ground is 'smoothed' it is harrowed immediately afterwards.

10. I do not cultivate till another irrigation makes it necessary.

11. Irrigate twice, two weeks apart.

At the present time I am laying 400 feet of sewer pipe to convey water. Will report the success of my experiment when the line is used. The cost is comparatively small if the pipe is bought right.

* * *

We trust that Mr. Earl will give us full particulars of the results of his new pipe line. Has it saved sufficient water to cover the additional cost? Is it more efficient? These, and a number of other questions, will, if answered, give us information of value.

COUNTRY LIFE.

(Continued from Page 611.)

and as fast as they can afford to pay for them. Laws in relation to good roads under present conditions would

be largely temporizing, while the conditions which resulted in bad roads continued. We must change the condition. Our present mail facilities reasonably meet the demands of our farm people. In the main they are satisfactorily served with such mail as they have the judgment or taste to select, the means to pay for and the time to read. It is suggseted that the rural people should meet more frequently and co-operate more fully to effect the welfare of their industries. This, if only the repetition of an old, is surely a wise, recommendation. But if to do so the farmer has to travel a long distance over a poor road, at the end of a long day's toil and on the eve of another, it is an obstacle which neither argument nor law will remove. He has been misled and injured by such means until he has grown suspicious; he has not been trained in such activities and he does not make them interesting or profitable. And, so, afraid, bored and without hope of advantage, he maintains his seclusion. It would be futile to point out the advantages of such meetings while these conditions continue. And the scarcity and unreliability and un-intelligence of farm labor is beyond the reach of law to remedy; it is an evolution which can only be remedied by a correction of the forces which produce it.

Above Laws.

I think it clear that rural conditions cannot be corrected or even improved by laws directed immediately at its defects; we must go deeper and correct the causes, and this remedy cannot be applied by some one else for the farmer; paternal law in his behalf would not only fail of beneficial results, but would work an injury and be resented by a man who is able to stand alone. The country man needs no legislation peculiar to himself; his wants are met in that respect when the people generally are wisely and justly governed. His interests are best served by those measures which are of general application and best serve the interests of the whole people. Given good general criminal, financial and economic laws, and his condition demands no more; it does not permit of any other. To a greater degree than any other man he can work out his own progress. Firmly fixed upon the soil, controlling the very forces of nature and bending them to his service, he is his own master and is able to mould his own destiny.

The Remedy.

But this does not acknowledge the existence of numerous and grave limitations to rural life and despair of their correction. For there is a remedy, and it is easy of application and entirely adequate. It is as broad as the evils sought to be corrected, applicable to all conditions and capable of accompanying agricultural life through all of its developments, and keeping it sound and making it supreme. And that remedy is Education! Not general education, although that would be most helpful. Not educating the farmer, the out-door man, to be a merchant, a journalist, or a physician; but teaching him to be a farmer; training him for the work he is to do, for the life he is to lead.

This will help the country in the only substantial and permanent way in which it can be helped, and start it on the road to an endless development. Agricultural education will not only refine and cultivate the country man; it will stimulate and energize his mind. Trained to know his soil, his seed and his animals, he will use only the best and those to best advantages. Growing only the best and the most of it, combined with business methods, he will make more money and consequently have to work less hours. Leisure and wealth will give him time for new ideas and the means to realize them. He will add beauties to his farm and refinements to his home. He will farm more on fewer acres. His labor, to what is now regarded as its humblest detail, will become intelligent and enthusiastic. Cultivation will become intensive, farms will be subdivided and population will increase.

Upon these conditions the farm meetings and farm organizations will follow naturally and be made to realize their fullest measure of social betterment and business advantage. The intelligent and prosperous farmer will see the advantages of good roads and will build them. He will demand better schools which his children will have time to attend, and he will provide and develop them for himself. He will read more and better publications; he will have an increased correspondence; he will need better mail service, and he will have the power and intelligence to get it. To this well settled and prosperous country transportation facilities will come and the whole life will go up.

Country life will become attractive, and its labor problem will be settled. Better men will be drawn to it ;they will be trained by it, and its discipline will make them efficient and dependable. There is no phase of country life to which education of this character does not apply and which it does not improve. We should therefore urge upon every moral reformer, upon every humanitarian, upon every statesman and political idealist, that they advise and demand that immediate steps be taken to give to this country an enlarged and adequate system of agricultural education.

Let us in California strengthen our College of Agriculture and make it fit our necessities. With particular emphasis let us go about the work of building up and supporting the School of Agriculture at Davis, and making its management practical and vigorous. Knowing the value of a strong rural population, of its necessity as a source of happiness, of wealth and strength, blind to consequences, we have been training our city man for all of his activities and the country man for none of his. We have been teaching men to practice law, to conduct banks, to lay bricks; but we have asked this country man to grope amidst nature's mysteries without a ray of light. If our cities grew great under this treatment while the country fell away, let us not be blind to the cause, nor hesitate now at its correction. This will require work and will take time, but it will be worth while.

Looking into the future, and seeing country life as it will develop under training, I see a field into which science has gathered all that is good and from which progress has banished all that is ill. I see farm homes filled with the fruits of wealth and culture and moral purpose, set amidst the dignity and sweetness of nature; the kind of homes which shelter strong, clean and effective men, and which nurture a youth fit for all the trials of life, equipped for effective industry and the kind of citizenship which this great democracy demands.

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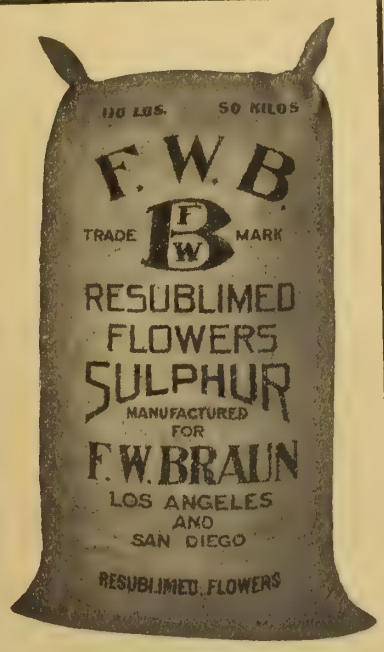

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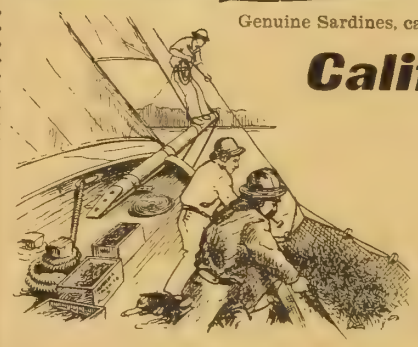

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Deciduous Fruit Culture

By J. W. Mills

THE SCIENCE OF IRRIGATION.

ASSUMING that you have the ground laid out just right, the subsoil wet enough and the ground planted with fruit trees well cultivated, everything now looks quite fine. And it probably is far better than it could be under any rainfall. But it is not as good as it should be. You cannot see it, for your eye is not practiced like that of a buyer of fruit on the tree. Even he may not know what the matter is, though he may quickly see that the fruit is deficient in flavor, keeping qualities, perhaps, and in the percentage of the first grade, which is the first thing he looks after. Perhaps only an experienced grower from some of the most successful fruit-growing districts could tell you, and he could not do it at a glance. Probably he would not offer any criticism unless pressed for an opinion, when he would probably say:

"Well, down our way we get better fruit and more of it by irrigating with furrows than we can by flooding."

"How so?" you ask. "Flooding puts in water enough, doesn't it?"

"Oh, yes, but we quit it long ago and are making more money out of less water."

"But it doesn't interfere with good cultivation," you suggest.

"Well, no, I suppose not. But there's some difference we can't account for exactly, something besides keeping the water away from the trunk of the tree. But we do know the difference in the cash box. We thought we were doing well enough before we changed. But it is certain that we are doing much better. You might not be able to point out the difference when in the orchard, but there is no appeal from the returns."

Such talk as this has within 20 years changed the irrigation of whole sections in the West, and I do not know of a single case in which there has been a return to the old method, or that anyone has any fault to find with the new; though there are many places where a very porous soil would disappoint one who could not get large enough heads of water.

On tight soils it may be used with very small heads.

Suppose you have a square 10 acres in orchard. It will be 220 yards on each side and you want to put into the soil an equivalent of three inches (rain measure). As a second foot equals an inch an hour per acre (rain measure), it will need 30 hours to make three inches of rain on the whole. This would be far too slow for flooding, even in 25-foot checks. But if you can get a good second foot for 30 hours you can do better work with small furrows with less help, and if you can get it 60 hours you can do still better on many soils with only half the head, or half a foot.

It may seem quite absurd to divide such a stream into 220 little ribbons of water, running only a little over a gallon a minute and spread a yard apart and expect them to get anywhere. Yet that is exactly what is done in many a fine orchard and to do it all you need is patience and to remember that it is the greatest step in advance that was ever taken in horticulture and one that has been so thoroughly tested for 30 years that it will never go backwards.

You naturally remark that your soil will never hold up such a little stream to run 220 yards across ten acres. That is exactly where you deceive yourself. It probably will if you give it time enough. Suppose you try it. Make a small furrow about three inches deep with the corner of the hoe, turn in such a stream and sit down and watch it. Or, better yet, go down town or go to bed. If it will cross the ten acres in ten hours, with the land well graded to a uniform slope, with the furrows evenly made, and no gopher holes to engulf it, it is all you should expect. If it will do it in 15 hours it is fine, and if it takes 24 it is good enough, provided you can have the stream one or two days longer.

The result of such work, if well done, is that of a long, slow rain, and is superior to almost any form of flooding. This is especially the case in orchards, where the cutting of one check to rush its contents into the next one has the effect of a heavy dashing shower. And even the finest flooding that can be done for all kinds of garden work is not equal to a long, fine rain. Flooding for economy or to close the air space at the surface is quite another matter, just as much as flooding to drown gophers. On land where you do not have to seal the surface the difference is plain if you watch it long enough.

But there are some soils where the water will drop too straight downward and not soak sideways far enough, and others where the soaking is provokingly uneven. On one place I had, corn would get plenty of water two feet from the furrow. In a few hills farther on it would wilt at the same distance, and in some places the ground would be dry six inches from the furrow. The ground was rich and easily worked when wet, and merely seemed to have tight spots through it. This ground raised fine fruit with any form of irrigation, but was a nuisance for gardening because for that you don't want streams running two or three days. Half a day should be enough with shorter furrows and sometimes larger streams. And if corn, potatoes and similar stuff will not flourish under a three hours' run of streams of about nine gallons a minute—one-fifth of a second-foot—the land will probably be better for something else unless you have plenty of water to waste. Even then it doesn't follow that it should be all used because you have it. If cold, it may be very bad, for garden stuff generally needs water oftener than orchards and chilling the ground too often may cause more loss of profit.

The main difficulty with water dropping downward in some soils instead of soaking sideways is in too even texture, like shot of one size. In very gravelly and sandy soil it will soak to the sides perfectly if there is enough fine sand and fine clay or dust mixed with it. This is the case with most all upland soils. With furrows three feet apart the moisture will meet two feet below in half a day, and in a day will meet at six inches below on some soils. In winter it will often be visible at the surface, but in hot weather especially with a strong sun in dry air it will rarely show at the surface, even at daylight.

On my ranch I can wet to the cen-

(Continued on Page 619.)

Bees and Their Care

WAX SECRETION.

THERE are times when bees secrete more wax than others—during good honey-flow, for instance, or in the case of booming colonies in the spring that have their hives full of honey from the previous year and are required to handle it, making room for the queen, etc. At such times I have found comb-building cheaper than otherwise, and have often taken advantage of that fact in making the bees draw out combs for future use.

At the very beginning of the honey-flow, or even before, every colony in our yards is supplied with a shallow super of drawn combs to catch the first honey that comes in scatteringly, and in too small quantities to cause comb-building to any great extent. If we did not do this we should lose some honey at this time. A little later a comb-honey super with full sheets of foundation is added under the one containing the drawn combs. By this time the bees are secreting wax plentifully, which is shown by the whitening of the combs in the first super, and comb-building is begun on this foundation at a rapid rate, wax secretion being on the increase as the flow advances.

For years we supplied all supers given after the first two just mentioned, with only half-sheets of foundation because we thought the additional foundation was not needed, since the bees were secreting wax involuntarily, and that the extra wax used in full sheets would, therefore, be a loss. Last year, however, we had an experience that seemed to upset these conclusions. We were putting on supers with full sheets of foundation all the way through, mainly because we had it; but, on account of delay in a shipment, we ran short, and only half-sheets of foundation were put in 50 supers or more. As there was a good honey-flow still on, and the bees were working well in their third supers, secreting wax at a rapid rate, we thought it would not make any difference. But it did make a difference; for in six days' time all the supers with full sheets of foundation were fully drawn out, and, upon careful estimation, they averaged from 20 to 25 pounds of honey, while those with only third and half sheets averaged only about 10 to 15 pounds. This taught us a lesson; and hereafter we shall use full sheets under all conditions.

It costs about 20 cents per super for full sheets; and by putting in half-sheets, we saved 10 cents per super. In six days' time the difference between the two in honey stored was fully ten pounds in favor of the full-sheet supers. This was comb honey, and averaged 12 cents per pound, making $1.20 per super, or a loss of $1.10 above the 10 cents saved on foundation. The colonies that fell behind on this account remained behind the rest of the season. The test was a very conclusive one, as the two yards were among the best we had, the colonies unusually even in strength and ability, and the flow an extra good one of long duration. With a poorer flow the results might have been worse. The supers were hastily put on at random, just as taken from the wagon, without paying attention to which had full sheets or only starters.—Gleanings in Bee Culture.

THE BUSY BEE.

Where extracted honey is produced in large quantities, the nicest thing I have ever seen for straining same is the strainer bucket.

The bottom and sides of the bucket, which, by the way, is the size and shape of the ordinary milking pail, are made of a fine mesh wire, and the honey, as fast as it runs from the extractor, goes through the pail, and from there into the honey vats.

This strainer is far superior to cheesecloth, as the little particles of wax, pollen, dirt, etc., are all caught, and it is more quickly and thoroughly cleaned than cloth.

Another good strainer is made by taking an ordinary tin pail and cutting a large hole in the center of the bottom, allowing not more than an inch of the bottom to remain all around; have some fine brass or copper wire screen soldered in the bottom, and the trick is done.—Orff's.

Have your own bees. Did you ever think what these visiting strange bees are after when they hover around the fruit blossoms, day after day? They are feasting upon nectar belonging to you. Of course they leave some payment by more completely pollenizing the blossoms. Study over this bee proposition, and another season supply bees of your own, therefore getting benefit of the twofold profit.

Preventing the spread of foul brood should be the object of every person interested in the bee-keeping industry; and each one can do some particular thing that will help.

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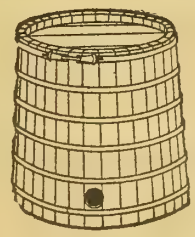

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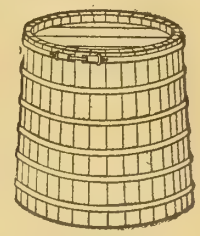

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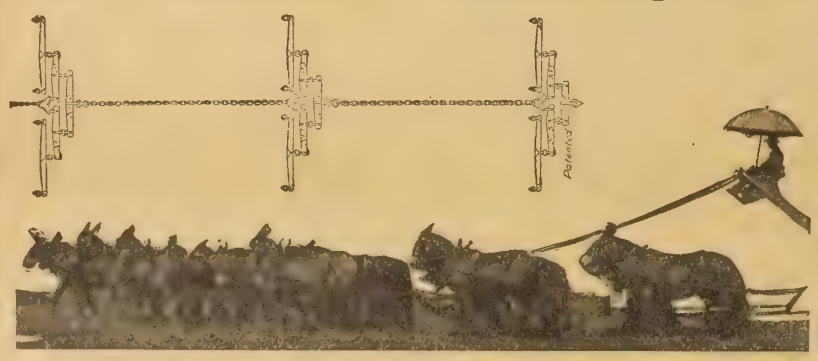

perfectly equalizes from four to forty or more animals in a team. No whip required to drive them, each must do its share. The team in this picture shows 26 Mules hitched to a 16 ft. Houser-Haines Harvester, cutting down barley in sediment soil. Guess how many pounds each animal is pulling? For further information, Catalogue, etc., write today to

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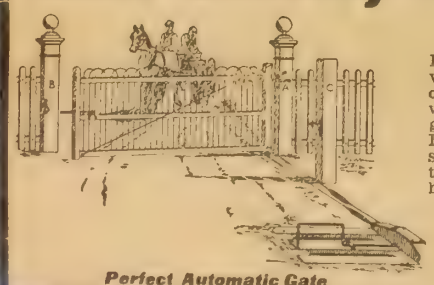

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Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

THE HEIFERS.

HEAVY producing cows, either as milkers or as butter makers, are made in two ways; by careful breeding, and by careful training from calfhood. The cow cannot be starved nor indifferently milked at any old time that suits the milker, and hold up in her producing. There are many things that enter into a breeder's skill that he stamps with an individuality. The herd comes to have a character. In looking over a herd of cows, an experienced eye can tell at once if the herd is home bred or purchased. Dr. Haring of the State University was here last week, and in looking over the herd remarked on the sprighty look of the cows, and on the fact that they held up their heads and moved alertly. While I had not thought about it, I saw that it was so. Though gentle, they were interested in everything going on. I think it is the result of fearlessness. They know that Alex has only kind words and a song as he milks them.

Breeding Age.

The tendency is to breed too young, when the heifers are yearlings or even younger. While it is natural to wish to increase the herd rapidly, I doubt its ultimate wisdom. I should not breed anything to come in sooner than in two and a half years. This will give cows at once and make them profitable from the start. Milking a string of babies is not so profitable as mature cows. While we prefer to put them into the milking string at thirty-four months, it is not always possible to do this, as the time in which a heifer freshens has much to do with her future usefulness. The habit of fall freshening should be cultivated. Have the heifers come in fresh in September, October or November. The flush of milk from the fresh animal is then caught, and when a little dropping down comes, the fresh grass again builds up the milk flow, and the cow is pushed along into a good full year of milk. It is the keeping at it that makes the records and makes the money come in. A herd loaded up with cows that only produce five or six months in the year is carrying a heavy weight of unprofitableness to the owner.

Size.

Sometimes, by accident, heifers are bred at too early an age. These rarely attain full size. I believe in a good sized animal, one that has room for good lungs, heart and stomach in her frame. Holstein cows could be bred in a hundred years down to nanny goats. That is what some of the breeders on the coast are doing today. Find out the herd book weight of the cows of your breed, whatever breed you may prefer, then try to keep the cattle up to it. The founders of a breed were deep thinkers, and the producing of a cow is not the result of a "lucky find," but of the application of well considered principles. Size may not be everything, many think. It is not, in the mind of the skilled breeder, but in the hands of the beginner it is an important matter, as it is the simplest possible test to show that he is not running the herd into the ground. Size, therefore, must be watched as well as vigor. The cow is the sum of all her ancestors, with her own personality added. She may carry the total inheritance in her blood, but if she is a poor individual, she cannot work it out. She must be made the vehicle through which the part is acted. All the dramas of Shakespeare, learned until letter perfect, will not make an actor. The personal fire and strength must be there to light up the lines of the grand old master.

Motherhood.

The stunted cow does not make as good a mother as the one that is more fully developed. The cow must have vigor of health herself in order to transmit it to her offspring. The high record for seven days test by heifers can be increased if they come into milking while fat. Then push them along with heavy feeding, and they will respond in milk, if they can stand the strain. If they cannot, they go to pieces with indigestion and may never be so good again. The future is spoiled by a little over work. Like young horses, they go stale from over training and fail as money makers. The fat on heifers disappears rapidly into the milking pail if they have been bred from a heavy milking ancestry. The heifers should not be bred again until four months after calving, and this will bring them a full year in milk. They should be milked right up to the end, or until six weeks of calving time. Feed them a full ration up to within three months of freshening. This is the education of the young cow, and they must be watched closely, for when they drop down to a pint of milk a day, the milker does not like to be bothered with them.

Cow-like.

The breeders often think that if

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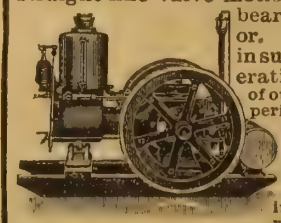

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they leave the heifers too long unbred they grow steer like in appearance ,and coarsen. It is certainly true that the feminine type remains undeveloped until they came into their natural condition of motherhood. Let them look strong and masculine until after they calve. In a few weeks after the calf is dropped the whole body begins to change and they grow more and more feminine. It is a strong femininity instead of the delicate forced one of the early bred heifer. The female of all animals must possess great vitality if the offspring are to be strong and well developed. The one and only valid reason for early breeding in cows is that they are less likely to have congested udders and less apt to become shy breeders if started early in life. The shy breeding cows are usually the over forced ones in feeding to make show ring records, or to take records as big butter makers. Shy breeding of later bred heifers has not been our experience. Old Buttercup came in at three years' old and passed away at twenty, leaving the ranch richer by twenty-three of her calves. These happened to be all heifers except one pair of twin bulls. I paid ten dollars for Buttercup as a calf six months old. Sixteen of her daughters sold as cows for $1,280. Buttercup was simply a common cow that made three hundred and fifty pounds of butter in a year. The daughters were half Holsteins and all good cows. Why? Because they had a good dam and because she nicked kindly on the Holstein blood, and these heifers were allowed to reach their strength before being bred. Then they were fed! fed! fed! until all the old men in the neighborhood came to advise me against buying stacks of alfalfa to put into the cows' stomachs.

This is only part of the story, for the vineyards and orchards responded to the liberal manuring and paid the feed bills with their increased productiveness.—M. E. Sherman.

The silo is as capable of helping out the summer pasture as it is the winter supply of roughage. Our eastern brothers use it for such purpose, thus enabling them to keep what appears to the western man an almost unbelievable number of cows on small pasture acreage. When our land becomes valued at over $100 an acre, as some of it now is, the silo will be seen with its round form in the sky, all over the country where cows are milked; indeed, the silo is already seen in the older settled, higher valued lands.

A poor workman is always finding fault with his tools, is an old saying. Likewise, the owner of scrub milk cows is always finding fault with dairying as a business .

In buying sheep, like anything else, get the best stock you can. If you can't afford to buy anything but scrub ewes, then buy fewer of them and use the money thus saved toward buying a good buck.

Did it ever occur to you that artificial drainage of lands conserves moisture as well as prevents the land from becoming seeped or washing?

Common black molasses that, a few years ago could not be sold for anything is coming rapidly into favor as a stock feed.

See that your stock have good drinking water.

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Do You Know

That the east is burning up with land hunger? That productive lands are getting scarce and hence higher? Do you know that the people east are just beginning to find out that there are agricultural lands in California and hence that we are on the eve of the greatest emigration movement California has ever experienced.

Do You Know

That as a consequence it behooves all who are landless in California but who hope sometime to enjoy the blessings of a landed home, to get busy and to secure the home before the other fellow gets it, and before prices have advanced to where they are prohibitive? That the easterners who are coming here now are astounded with the agricultural possibilities of "New California?" That they are buying themselves, and then going back home spreading the news of their find, and inducing others to come?

Do You Know

That ere long the man who owns productive land here will discover its value, and will refuse to part with it at several times the amount it now takes to "lift" it, and that when that time comes it will be everlastingly too late for many.

Do You Know

That the value of land depends upon what it will produce per acre? That land on the **Kerman Tract** is today the cheapest land in the United States, value of possible products considered? That this fact is becoming known, and that it is bringing more people here than have ever come to any other similar tract in the same length of time?

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That the **Kerman Tract** excels when it comes to water right, quality and lay of soil, natural drainage, location, and in possibilities for fruit and alfalfa growing, dairying and poultry raising? That it is unsurpassed, if equalled, in the things that go to both home and money making? That it is being populated by the very best quality of people, the cream of the country? That undesirable people are not allowed to buy land here and that those who locate are protected against the scourge which has ruined so many otherwise promising colonies in California? If you do not know these things now

We Are Telling You

And we ask the privilege of further informing you. If you are interested we would like nothing better than the chance to satisfy you upon all these points, either by correspondence or by showing you over the tract. We consider it a pleasure to show interested visitors over the colony, and all comers are accorded courteous and considerate treatment. Our circular explains in detail what is here, and it is free for the asking. Write for it, and do it now. But, what is better, come here and satisfy yourself that the **Kerman Tract** is as represented, and that you are not missing something that cannot be retrieved by not taking advantage of this opportunity now. Either write to

Carnine & Storgaard

General Sales Agents

Kerman, California

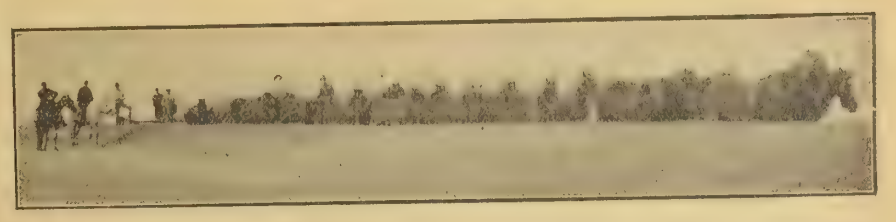
Or call at one of the following offices:

Fresno Irrigated Farms Co., 505 Kohl Building, San Francisco, Cal.

Fresno Irrigated Farms Co., 553 So. Spring St., Los Angeles, Cal.

Dodd & Neu, 520 San Pablo Ave., Oakland, Cal.

H. J. Young, 222 Globe Building, Seattle, Wash.



Making Irrigation Ditches by Machinery on the KERMAN TRACT

On this tract, and in two months, over 6,000 acres of new land was put under water, and into fruit, vines and alfalfa.

For Your Pocketbook's Sake---Read This

I am so confident that the Olds Engine is the most economical and most durable engine you can buy that I will make this proposition to every buyer of an Olds Engine.

I agree to replace, free of charge, any part of an Olds Engine that breaks or becomes worn, from any cause whatsoever, within one year from date of shipment, provided the replacement is one you think should be borne by the manufacturer. You are to be the only judge. There is to be no argument, no delay in returning old parts and getting new ones; you decide and I abide by your decision.

J. B. SEAGER, Gen'l Mgr.

Do you think this proposition could be made on any engine but a practically perfect one? You can easily see that to stand this supreme test of durability and perfect workmanship it must be built right, of the very best material, of the simplest construction. This is the kind of an engine you want. You take no chances in buying an Olds. All of my representatives can furnish these repairs without any delay. They do not have to consult me. Write to my nearest agent. He can fix you out with the best engine you can buy, no matter what others cost.

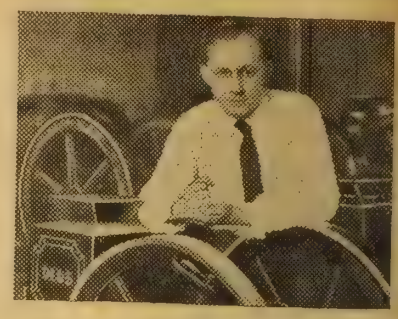
OLDS ENGINES

Give you the power you need at the price you can afford to pay for it.

They are the cheapest engines you can buy—simple in construction, most economical to run, do not get out of order, easy to start winter or summer—a ten-year-old boy can run the Olds Engine just as well as a man.

Thousands of farmers have found out the superiority of the Olds over all other engines. The United States Government must have found it out also because they buy Olds Engines for their military institutions, forestry and irrigation departments. Uncle Sam thoroughly investigates everything he buys. The Olds Engines stood the government test just as they will stand every other test.

For thirty years we have made nothing but Olds Engines. We know the Engine business just as you know your sitting room. Our business has steadily increased during that time. What made it? Why, because the Olds Engine did just what we claimed for it—every user was satisfied and knew he had got more than his money's worth, and he told some one else about it



J. B. Seager, Gen'l Manager

YOU cannot afford to do without an Olds Engine. The first cost is saved so quickly in time, labor and money that no shrewd farmer should try to get along without one. The daily cost of an Olds Engine is so small it is hardly worth while counting, compared with the work it does.

There are not two farmers out of a thousand who could not use an Olds Engine with profit to themselves on their farms. You know what can be done with an engine on a farm better than I. You know an engine is needed on every good farm, but probably the reason you have not one now is because you have felt you could not afford it, or had some idea an engine was a difficult thing to run, and an expensive thing to keep in order, or perhaps you have had an engine that did not give you satisfaction. Not so with an Olds. You can afford it. Thousands and thousands of successful farmers have felt just as you do, but each man owns an Olds Engine today, and now he wonders how he ever got along without it.

Do you think the big successful men of this country would be where they are today if they had not kept up with the times? They bought the things they needed to increase their earning power. A successful man can always find a way to pay for a necessity in his business.

I guarantee every Olds Engine that leaves the factory to be in perfect running order. I do not spend much time in the office. I am out in the shop with my coat off watching every detail. By keeping right out among the workmen, seeing that all the little things are actually done, I know the engine you get is all right, and that the high Olds standard is maintained. I also know the engine is "Best by every test," because I look after the testing and inspecting myself. They are the best you can buy, whether you pay less or more than the Olds price.

Write me about your own particular case. Let me advise with you. What I can tell you will fit your case exactly. Then you can decide what engine to buy. J. B. SEAGER, Gen. Mgr.

Some of the Features of the Olds Engine

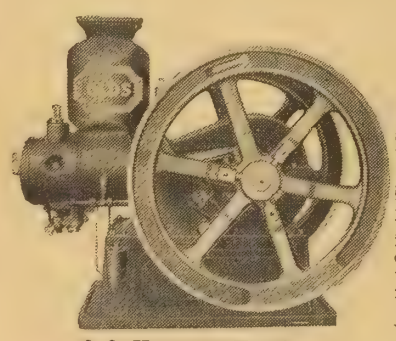
Olds Patent Seager Mixer

The only one that makes a perfect mixture of gas and air, giving the greatest power. No pump to leak or get out of order—no moving parts.

Removable Valve Mechanism. Removable Water Jacket. Jump Spark Ignition

Piston and cylinder ground to a perfect fit, giving better compression and more power.

Our catalogue explains these points in detail



4-A Hopper Engine

Simplicity, three separate inspections, durability, economy and certainty of operation.

Olds Engines are of the highest efficiency at the very lowest price because we can produce them without wasting a penny's worth of labor. There is a machine for every operation, and each piece, down to the smallest bolt or nut, is made of the very best tested material at a cost that could not be lower without cutting quality. Don't be misled by statements about "cheapness" in engins. Nobody can afford to buy a poor engine at any price, but there is a point where the highest quality can be had at the lowest cost, and the Olds Engine, because of the factory in which it is made, and the workmen who make it, stands without a superior in this respect. They are not slighted in places you cannot see, or where only an expert can discover it, but thoroughly well built through and through, in a factory that is known the world over as one of the most modernly equipped engine factories that has been built.

That is why we give you a durable, simple, strong, high-grade, perfect-working, long-lived engine at a low price.

Irrigating

You cannot afford to have your engine fail you when you require water for your crops. You buy both economy and insurance with an Olds engine. Made in all sizes from 3 H. P. to 100 H. P. Visit the nearest Olds Engine Pumping Plant. Ask the owner how he likes his Olds. There are Olds Engines in your neighborhood.

Write us for location.

Do Not Think of Buying an Engine Without Investigating an Olds

Write Today for Our Handsome Catalogue

It contains many fine pictures of the very latest models of Olds Engines with a detailed description that makes the engine question as plain to you as an open book. It contains letters from farmers who have used the Olds Engines, and they give their practical everyday experience with it.

Olds Engines are made in all sizes to suit every kind of work on the farm. We have exactly the kind of engine you want. Tell me what you want to do with it, and I will tell you just exactly the kind of engine you want to buy to do the work. It will be an expert opinion that costs you nothing.

Our hopper jacket engine on skids or wheels, 3 to 12 H. P., is ready to run when you get it. Fill it with gasoline, throw on the switch, turn the wheel, that's all. No piping to connect, nothing to set up, always ready, can be moved anywhere.

We also make regular engines 8 to 50 H. P. for heavier work.

Every Olds Engine is fitted with the Seager mixer which is recognized as being the most effective mixer that has ever been invented. No pump to leak. No moving parts to get out of order. They also have a removable water jacket so if through carelessness the water should freeze, but very little damage is done.

It is to your decided advantange to send for our catalogue

Do it now before you forget it. A postal card will do; but better still write me a letter, telling me what you want the engine to do, and you will get a personal letter from me that will give you the facts you want.

Write me or my nearest representative. See addresses below

J. B. Seager, Gen. Mgr. Olds Gas Power Co.
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Irrigation and Forestry

RAISING THE TIMBER CROP.

THE term regeneration is commonly used in forestry to signify the renewal of forest trees on the land. It is a convenient term and well worthy of general use. The different forms of regeneration may be referred to as, (1) regeneration by natural seeding; (2) regeneration by artificial seeding; (3) regeneration by planted seedlings; (4) regeneration by planted cuttings; (5) regeneration by sprouts and suckers (i e., coppice-growth.)

The method of regeneration best adapted for one section may not be at all fitted for another section under different conditions, and often it is best to combine two or more of the different forms of regeneration.

Where natural regeneration of valuable species can be easily brought about, it is generally the best practice. This is especially true in sections where timber is comparatively cheap, as is generally the case in this country where the returns from the land can hardly be expected to pay for any great amount of labor.

(1) Natural regeneration by seed may be greatly assisted by stirring the surface of the soil in good seed years, just before the seed is scattered, and by thinning enough to let in light and air to the seedlings. When it is desired to have an open field adjoining woodland thus seeded, the land may be plowed or loosened with a disk harrow or drag, and put in such condition as to make a sufficiently good seed bed. When the soil will not permit of such exceptional treatment, it may be loosened by a drag made by tying together several oak branches, or small logs, which, when dragged over the ground several times will gradually break up the surface. This will be especially necessary where there is a thick covering of mold or "duff" on the land. This same method of stirring the soil is applicable when the land is to be seeded by hand. Good seed years do not occur often in our most desirable species, and it is very important to take advantage of these good years when they do come.

Natural re-seeding is almost the only practical means of re-stocking large areas of forest lands, as other methods are too expensive. It generally takes place readily, and the chief reason why it is not more successful is the frequent destruction of the young seedlings by fires, by cattle and improper methods of logging.—From Cyclopedia of American Agriculture, L. H. Bailey, Editor-in-Chief. Reproduced by permission of The Macmillan Company, New York.

THE SCIENCE OF IRRIGATION.

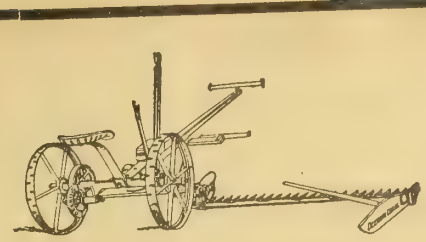
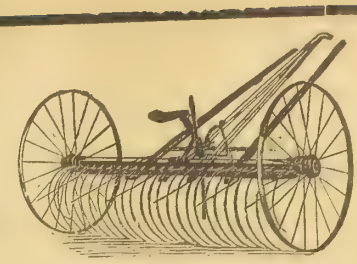
(Continued from Page 614.)

ter with furrows five feet apart, so that it will raise a good stand of grain provided it once sprouts. Whenever the sun is very low in midwinter and the nights cold the moisture will show at the surface all the way between the furrows. This may dry an inch or two during the day if the sun is bright, as it usually is, but if it is cloudy it will probably remain moist all day.

You should test these questions, but not be discouraged if you fail to wet the whole surface, or if you cannot raise the moisture nearer to the surface than one foot between the furrows three feet apart. It may prove that the soil is better adapted for trees or vines than vegetables, or that the furrows should be closer together, or that it is better for some trees than for others. With alfalfa it makes no difference and the same probably with any deep-rooted plant. But where the soil is too open, and increasing the size of the streams has no effect in spreading water to the sides, then flooding is the only way left.

When you return to look at your little streams you may find some broken out into the next ones, or several have made a big puddle from a slight swell of land running crossways and quite invisible to the eye. If the streams carry any rubbish it will be apt to collect wherever they reach the ground even half an inch higher than their beds. The formation of a little dam is then quite certain, followed by the breaking out of the stream from the backwater or the formation of a pond by several streams uniting. To avoid this, even greater care should be used in grading than in flooding, for now you have no levees to force the water on certain lines. The grading is generally cheaper, for there is very little carrying to be done. Instead of scraping off top soil too much you must make more faces, each with its own distributing system. Most all the grading can be done with a drag, provided it is very long, stiff and heavy, with good scraping edges. One edge may do, but the drag must be long and stiff or it is worthless for taking down the low swells that interfere with the even flow of the streams. Cutting these deeper with the plow, hoe or furrower will not always remedy the trouble. Being deeper they will collect more leaves or rubbish when there is any wind; and, as these furrows are broken up after every irrigation, the next ones may not be in the same places the others were and a variation of but a few inches may compel deeper cutting again. The trouble is that if one stream fails to go through with the rest you may not have the water long enough to send it through afterwards and if you crowd on more water it may disarrange all your other streams. In any event, it is such a nuisance that it will pay you to insure a uniform flow of every furrow by careful grading at the start.

For the same reason all weeds, dead grass, sticks and other rubbish should be removed from the ground as far as is consistent with reasonable economy. The harrow and hay rake used often enough will do it. You must bear in mind the difference between raising a few things for home use and raising them on a large scale for market. Thus a patch of black berries at the end of a field to take the waste water may be a great success for your table, no matter how badly irrigated so long as they have water enough. But to run a large patch for market that way would often mean light profit and possibly none. You cannot always see these things at once or believe that such trifles count. But the years tell a different tale to the grower who keeps close account of every cent as many do. It may seem silly to talk of combing the ground free of trash and worry over an inch of rise in a furrow. But when you see the work done by a long fine thread of water so fine that the camera can give no idea of it with the best light you can pick, and see 200 or more of these winding over a ten-acre tract while the owner is snoring serenely in the hammock, you will conclude that you can take considerable trouble at the start to secure such ease and certainty of results later on.—T. S. Van Dyke, in Irrigation Age.

Seasonable Goods

Of special interest right now, are our Harvesting Machines, Hay Tools and Hay-Presses. We have made it our business to get hold of the best in these lines. We especially call attention to the following:

Deering Ideal Mowers; perfect shear-cut, ball and roller bearing—nothing better made.

Deering Ideal Self-Dump Rakes; strong, durable—first class in every particular.

Dain Buck Rakes and **Stackers;** scores in use in Southern California. They are built right and will positively carry the teeth off the ground when heavily loaded. Power lift—easy to operate.

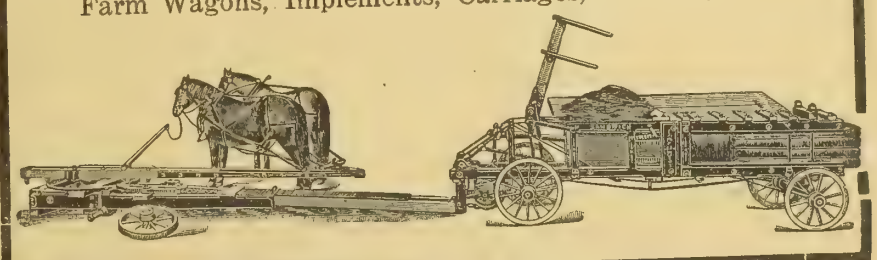
Southwick Hay-Press—without question the best horse-power press made. Many of our customers have averaged 30 tons per day or better for entire seasons' runs. We also have the Sandwich Engine power Belt Presses—of wonderful capacity. Smaller Presses, too—all steel, self feed.

See us or write us today.

Hawley, King & Co., Gen'l Agents

224-228 South Los Angeles, St., Los Angeles

Farm Wagons, Implements, Carriages, Harness, etc.



A Railway on the Ranch

Saves Much of the Hard Labor

The equipping of the ranch with a ***Portable Railway*** is a very ***Profitable Investment*** and ***not*** very expensive.

Our booklet S. F. 60 gives several suggestions for applying it to the dairy and Ranch.

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DIG DITCHES --- CUT SAGEBRUSH

MAKE ROADS

DON'T buy a special machine. Get a 20TH CENTURY GRADER—a ditcher, lateral-maker, land leveler, sage-brush grubber, border maker for rice or other crops, and strong road-grader—a combination not yet beaten. The price is reasonable. The

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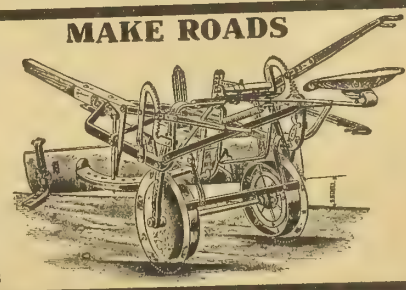
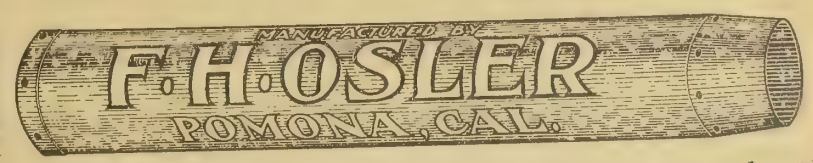
can be handled by one man. It is all steel, weighs 600 lbs. Dandy free new catalogue "Cheaper & Better Roads"—has 34 pictures, answers your questions. Write now for it and copy of "Better Roads Boomer." Address



The BAKER MFG. CO., 731 Fisher Bldg. Chicago, Illinois

SURFACE IRRIGATING PIPE



Made of a single sheet, 10 feet in length with heavy tapering end, and strong protector on large end. Made in all weights, by the latest improved machinery. The only way to irrigate alfalfa. Am Southern California Agent for Woodmanse Steel Windmill, complete line of repairs always in stock. Write for prices.

F. H. OSLER, Pomona, Cal.

California Cultivator

ESTABLISHED 1889

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Contents

"THE PAINTED WOODS ENSHADOWED OR AGLEAM," Cover.

REVIEW OF AMERICAN COUNTRY LIFE, 611.

CITRUS.—Fruit Acreage; Irrigation Again, 612, 613.

DECIDUOUS.—Science of Irrigation, 614.

BEES AND THEIR CARE.—Wax Secretion; Busy Bee, 615.

LIVE STOCK.—The Heifers, 616, 617

IRRIGATION AND FORESTRY.—Raising Timber Crop, 619.

EDITORIAL.—Honor the Brave; Tariff Tinkering; Save the Forage; Reputation; Frost Protection; Italian College of Agriculture; Deciduous Fruit Market, 620.

AGRICULTURAL NOTES OF THE PACIFIC COAST —Northern, Central, Southern, the Coast, 621.

POULTRY.—Mites; Hatching Pea-cocks; Moulting, 622, 623, 624.

GENERAL AGRICUTURE.—Beet Sugar Industry in the United States, 625.

QUERIES.—Trouble With Silage; Spraying Formula; Wooly Aphis; Summor Fallow; Spraying for Scale; Green Aphis; Fly Paper for Worms, 626, 627.

LEGAL QUERIES.—Poisoning Chickens; Hay Balers Accounts. 627.

HOUSEHOLD.—Who Marches Next Memorial Day; Memorial Day; Bethlehem; About The House; Domestic Economy, 628, 629.

PRODUCE MARKET.—Los Angeles Markets; San Francisco Markets; Citrus Markets, 630, 631.

HONOR THE BRAVE.

Honor to those who gave up their lives for their country will never cease. To be sure, there are periods like the present when the respect paid to the fallen dead is intensified, and very properly so. Since soon after the close of the civil war memorial day has grown in favor and in general observation until, now, practically the entire nation honors the brave dead. Occasionally there is a discordant note where sports and games are injected into the sacred day, but we believe this desecration is decreasing every year. We do not believe that a proper observance of this day permits of these games and merry makings.

To one who has stood in one of our national cemeteries, for example that at Chattanooga, Tennessee, where seventy-five acres are filled with the little white head stones, and where one may gaze into the distance, viewing only the white head stones under the trees, the appreciation of the debt we owe is brought home forcibly. In that cemetery, between thirteen and fourteen thousand soldiers have been buried, and one-third of the graves are marked only with small square posts inscribed simply with a number. Acre after acre of these headstones show the vast number of brave boys who died and were laid in these unknown graves.

But besides these vast numbers in well cared for national cemeteries, no cemetery in the land but is honored by being the last camp ground of one who supported his country in time of trial. Let these graves all be honored by the scattering of flowers, and still more by words of appreciation for the service rendered.

TARIFF TINKERING.

The persistence with which manufacturers are pulling for free farm products and high protective tariff on the manufactured article may be characterized as worthy of a better cause. Tom Reed once remarked: "If you are thinking of relaxing Protection in any direction, you had best not begin with the American farmer."

The most pronounced case of this effort is doubtless that of the shoe manufacturers and tanners. "Free hides" is their slogan. "If the poor people of the manufacturing centers are to be kept from starvation, they must have a very high tariff on the manufactured article which they wish to sell to the farmers." Of course, the principal cry put out to the people is that in order to export the manufactured article, they must have the raw product at as low a price as possible. But, they always cover up the fact that of the fifteen per cent duty which is levied upon hides imported, a ninety-nine per cent rebate is allowed when the shoes made from this imported raw material are exported.

The case of Free Hides vs. Dutiable Hides is all on the side of the American farmer. To him the steer is a finished product and the hide a part of that product. Best not begin with him if you are thinking of taking Protection away from anybody's finished product. If you do, there will be no Protection left for anybody.

SAVE THE FORAGE.

In working for the improvement of range conditions on National Forests, Uncle Sam has invited and has received the co-operation of stock associations in all parts of the West. California stockmen have not been at all backward in taking advantage of this opportunity to benefit the industry.

At the last meeting of the Calaveras-Alpine Stock Association at Sonora, the fact was brought out that many meadows and flats in the Stanislaus National Forest can be improved and the amount of forage increased by irrigation or other means. Steps will therefore be taken by the Forest Service in co-operation with the stockmen, to bring this about, whenever such action will not conflict with the rights of individuals obtained under State laws.

By conserving the present forage through the prevention of over-grazing, and by increasing the feed through seeding or other artificial means, the government hopes to be able to not only place stock raising upon a safe and permanent basis, but to increase the quality and quantity of beef-producing cattle.

REPUTATION.

Some weeks ago we attended an institute at which Mrs. Sherman was delivering an address on the shipping of table grapes. She referred generally to the varieties which ship best, manner of packing, remedies for mildew and other diseases which have to be contended with, etc. But the point which impressed us most was her reference to her personal interest in, and oversight of, the packing operation. She spoke of the pleasure that lay in watching the deft fingers of the girls arranging the clusters of large berries in the baskets, and of the music in the air as each would call for her fresh supply of "f-r-u-i-t," and then as the fruit was carefully placed in the car, of her feelings as she thought of all it meant to her. She said, "It makes me tremble for my reputation when I see all this fruit going away three or four thousand miles and into the hands of strangers." Such a feeling may be somewhat trying and racking to one's nerves, but unless one experiences it, there is great danger of the reputation not being kept at the point Mrs. Sherman's is, as the shipper of high grade table grapes. There is a satisfaction, and even pride, in maintaining such a name, but, more particularly, we would refer now to that which probably gives more satisfaction to most of us; that is, the financial returns. If this would be satisfactory, we must tremble for our reputations and take the utmost pains in sending to the markets only that which we know absolutely is of the highest grade.

When one employs a great number of hands, it is almost impossible, but a means of supervision must be devised by which it is possible to keep watch of the work of careless or inefficient employees. Otherwise indifferent fruit will be allowed to go into the baskets in such a manner as to cause decay or at least be displeasing in appearance. Best returns demand concern in every step on ranch and in packing house.

FROST PROTECTION.

The cold wave which struck Colorado recently did immense damage, but we note in the newspapers that more than $3,000,000 worth of fruit was saved by the use of oil pots and coal buckets. The cold was intense for two nights, but in all sections where there was co-operation in smudging or firing, from five to ten degrees rise in temperature was secured.

Fruit growers of California have done some of this, but we do not think they have ever attempted it on so large a scale or with the unanimity which was seen in Colorado. It may not be of value to refer to the subject at this time of the year, for it is many months before damage by frost will again confront the orchardist, but recalling the frantic appeals which came to this office as to where frost protection material might be secured, at the time of December cold snap, we speak at this time to remind orange and lemon growers especially that in time of peace it is well to prepare for war.

ITALIAN COLLEGES OF AGRICULTURE.

A recent number of Cornell Countryman contains an interesting interview with Professor John Craig, in which he describes the five colleges of agriculture in Italy, located respectively at Portici, near Naples, Perugia, Pisa, Bologna, and Milan. Two of these institutions are under the direction of the State Department of Public Instruction and three under the Department of Agriculture. The entrance requirements to the colleges of agriculture are the same as to the universities. The enrollment of students is relatively small, not more than 150 students being in attendance at any institution. These students belong to two classes, the sons of land-holders who wish to prepare themselves to manage their estates and those who are preparing to teach agriculture.

DECIDUOUS FRUIT MARKET.

It is with pleasure that we announce to our readers that we have arranged with a correspondent at Sacramento to give to them, beginning with the next issue, reports of fruit forwarded and general deciduous market conditions. These reports will continue during the heavier part of the shipping season and will be written especially for our readers. We hope to make these more complete even than the citrus fruit reports.

"The problem of production has not ceased to be fundamental but it is no longer final; just as learning to read and write and cipher are fundamental but are no longer the final ends of education. We hope ultimately to double the average yield of wheat and corn per acre; it will be a great achievement; but it is even more important to double the desirability, comfort, and standing of the farmer's life. * * * We must try to raise the average farm life, and we must also try to develop it so that it shall offer exceptional chances for exceptional men."—Theodore Roosevelt.

"Seek to provide for the people on the farms an equipment so broad and thorough as to fit them for the highest requirements of our citizenship, so that they can establish and maintain country homes of the best type, and create and sustain a country civilization more than equal to that of the city."—Theodore Roosevelt.

Agricultural Notes of the Pacific Coast

Northern California

Prunes promise light crop in many parts of the valley.

Shasta County gives promise of a great crop of fruit.

The first cutting of alfalfa over the valley proved very satisfactory.

The absence of late rains has caused a great shortage in the hay crop.

Sacramento has shipped vast quantities of strawberries to Portland and Seattle.

Cottonwood, Shasta county, promises a bumper crop of pears, peaches and prunes.

Ione, Amador county, reports harvesting in full swing with a fair output in sight.

Agricultural Park, Sacramento, is a busy place getting ready for the coming State Fair.

Suisun valley will have a short crop of nearly all fruits this season, Royal Anne cherries being the exception.

Gravenstein apples at Sebastopol promise to be under the average crop, but quality of fruit is exceptionally good.

The first carload of cherries left Vacaville May 7th, and at this time several carloads go forward each week.

The first creamery in Shasta county has just been started at Cottonwood. It is large enough to handle the milk from 400 cows.

Susanville, Lassen county, had a severe frost about the middle of the month which severely injured cherries and apricots.

"Great Development in Store for Sacramento Valley Through Irrigation" is the slogan of development associations of that valley.

Some Nevada county farmers say that the hay and grain crop will be a total failure as it is now too late for rains to be of any value.

A census is being taken of the number of Japanese laborers in this state. Every employer is expected to fill out blanks which are furnished.

It is reported that there was a shortage of a hundred tons of hay last year, which, with this year's shortage, should assure good prices.

Cherry growers have not been pleased with prices offered this year, and it is feared that the immense output will not command a satisfactory average.

The University Farm picnic held at the time of the dedication of the dormitory last Saturday was attended by parties from nearly all sections of the lower valley.

Great preparations have been made for the cannery picnic which will be held on June 4th at Gridley. Excursion trains will be run from various sections of the Sacramento Valley.

Farmers and business men of Cedarville, Modoc county, are contemplating a wagon road to a point on the Western Pacific so as to secure more reasonable transportation rate for products.

It is possible that two canneries at Yuba City will not run this season, as the dumping ground for sewerage has become so restricted that it is impossible to dispose of it until more arrangements can be made.

Central California

Lodi has recently shipped three cars of wine to Germany.

Kerman expects to have a creamery in operation in five months.

Eight hundred acres are being planted to eucalyptus at Kerman.

Pacific Grove recently closed a most successful Blossom and Plant Show.

Cut worms are being reported in nearly all sections of the San Joaquin Valley.

The Tulare County Fair Association holds its next meeting September 13th to 18th.

A contract has been let for the building of the Lodi Co-operative Winery.

Turlock Home Creamery has had its capacity more than doubled by recent improvements.

The crop of prunes in Santa Clara Valley is said to be about one-third that of last season.

Beets in Conejo, Kings county, are reported in fine condition. They will be delivered at the Corcoran factory.

The central part of the state generally will show only a very ordinary yield of hay. Grain will be exceptionally light.

Pajaro Valley shippers hope to have an improved harbor for Watsonville in the near future, which will greatly increase shipping facilities.

The contest between the Farmers' Union and the prune growers who wish to form an organization separate from the union is still on in Santa Clara Valley.

Prof. Day, connected with the Experiment Station staff, and who has made extensive investigation of the Argentine ant, reports little danger of this insect becoming a serious pest.

The fruit growers of the Pajaro Valley are considering the erection of a cold storage plant at Watsonville with a capital stock of $200,000 divided into 200 shares. The plant is to have a capacity of 500,000 boxes.

Kern River farmers suffered a great loss in the breaking of the levees. Many cattle were drowned and crops covered with water. More than ten thousand acres of barley and wheat lands were flooded.

The stockholders of the Lodi Products Company, which controls the grape juice plant, have decided to increase the capital stock. There is now on hand more than a hundred thousand gallons of juice of last year's manufacture.

At the state meeting of the Farmers Union held at Fresno there were delegates from 58 local unions. The directors chosen for the coming year are A. Sorenson, of Fresno J. H. Dawson of Hanford; H. H. Bennett of Tulare; L. S. Miller of Santa Clara valley, and J. M. Herron of Atwater.

The bean growers of Ventura county have perfected their organization by incorporating and electing a board of directors for the first year, as follows: T. G. Gabbert, Charles Donlon, R. G. Edwards, George C. Power, H. K. Snow, Jr., C. L. Chrisman, D. F. Sheldon, Joseph D. McGrath, F. A. Snyder, John Darling and A. Camarillo. The capital stock of the corporation is $500,000, divided into 10,000 shares of the par value of $50.00 each.

Southern California

Southern California grain crop will be short.

Redlands recently had a shower of over half an inch.

Cotton planting is in full swing in the Imperial Valley.

Coachella Valley is planting a large quantity of orange seeds.

Bee men at Fairmont report exceptionally heavy honey flow.

Coachella, Riverside county, shipped her first apricots about May 10th.

Thermal, Riverside county, recently shipped five cars of onions in one day.

A twelve inch well nearly 400 feet deep at San Jacinto has shown a fine flow of artesian water.

Thermal, Riverside county, is now making regular daily shipments of egg plant to Los Angeles.

Arlington, Riverside county, is claiming she will become a poultry center which will soon rival Petaluma.

A proposition has been made to San Jacinto to locate a sugar factory there conditional on a payment of $20,000 bonus.

A Redlands orange packer has gone to Porto Rico to give instructions to orange growers there in packing house methods.

Forest rangers recently held a meeting at San Bernardino and discussed the rules which govern the forest reservations.

A petition has been filed asking that a large body of land in Santa Barbara county subject to overflow be formed into a reclamation district.

Prof. Ramsey, of Whittier, is spending much time this season looking after varieties of walnuts immune to the blight.

The Orange County hens are crowing over the law recently enacted which prevents the selling of cold storage eggs as "fresh extras."

Raisin Day was such a success that now Coachella Valley ranchers are appealing for "Onion Day" to be observed all over the United States.

The packers in the packing house of the Upland, Sam Bernardino County Citrus Association, recently made a demand for 3½ cents per box instead of the former 3 cent price for packing oranges.

Lemon growers are somewhat concerned as to the tariff on lemons. Reasonable assurance is given that no reduction will be made, and some are yet hoping that the half cent increase may be secured.

J. P. Bradford recently sent us a photograph of his outfit hauling cabbage to El Centro, Imperial Co., market, showing eight horses hauling a wagon and three trailers well rounded up with cabbage.

San Jacinto people are elated over the fact that the sugar factory has finally been settled upon as a certainty for their town. It is rumored that the factory will be one of the more complete factories of the state.

Experts are experimenting with development of a more perfect lima bean in the bean fields near Oxnard. 10,000 typical and almost perfect plants were chosen last year and the seed from these was used as a basis for this year's experiment.

The Coast

The A- Y- P opens at Seattle June first.

Colorado has 80,000 acres in commercial orchards.

Hood river orchard lands are selling at $1,000 per acre.

Beet growers at Fort Collins, Colorado, pay $20 per acre thinning beets.

Onions have been proving an exceedingly profitable crop at Mesa, Arizona.

Wool buying is progressing in eastern Oregon, wool commanding about 24 cents.

Trans-Mississippi Commercial Congress will hold sessions in Denver in August.

Forest fires have already started in the mountains near Newport, Washington.

The Willamette Valley farmers were recently made happy by an abundant rainfall.

Sugar beets and even alfalfa were greatly injured by the late frosts in Colorado.

The fourth Dry Farming Congress will be held in Billings, Montana, October 26, 27, 28.

The last legislature of Hawaii passed an act authorizing the establishment of an agricultural college.

It is believed that Eastern and European capital will develop large holdings of land on the lower Gila river, Arizona.

Farmers of Fallon, Nevada, are maka raid against magpies which prevent the multiplication of quail and other prized birds.

The government has just opened the lands of the Shoshone Irrigation Project for settlement. Over 150,000 acres are thus opened.

The crest of the levee along the Gila river has been raised over two feet. This will guard the land near Yuma from forty feet of water.

The shipments of hops by rail and water from Oregon for the past eight months aggregate 90,484 bales, or nearly 40,000 bales less than last year.

It is rumored that a company made up of eastern capitalists has made large purchases along the Gila river and will develop a large body of land.

The vigorous advertising campaign carried on in the interests of Hawaiian Islands has led to a substantial increase in demand for pine apples.

The annual election of the stockholders of the Salt River Valley Water User's Association of Arizona, reelected its former board of directors.

The Oregon Threshers' Association recently held its annual meeting at Portland and elected W. H. Fletcher of McMinnville. President, and Phil S. Bates of Portland, Secretary.

The recent cold snap which threatened the fruit industry of Colorado showed most of the farmers prepared to combat frost damage with the use of smudge fuel. It is estimated that over $3,000,000 worth of fruit was saved.

The wool buyers are taking advantage of the fact that the Baker City, Oregon, sale which was scheduled to come off the first of the month has been called off. They are now buying wool in all sections, and not to the advantage of the wool growers.

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MIDLAND Poultry Food

Is based on ***quality*** and it is quality in Poultry Food that produces eggs. ***Cheap filler*** and ***cheap grain*** will ***not*** make eggs. ***Midland Poultry Food*** contains only the ***choicest*** cereals and animal food the market affords. You ***can't*** afford to try and be successful and not get results. ***Midland Poultry Food*** will produce results. Try it and see. $1.95 per sack

Petaluma Incubators and Brooders

Are still here, after others are gone. ***The Standard of the World Machine.*** Winners of ***more prizes*** awarded by ***World's Fair Judges*** than any other make.

Remember, we make a hot water machine. One of the ***best hot water machines*** on the market.

Send for our Illustrated Catalogue.

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Berrar & Robertson, San Jose, Cal.

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If You Are Not Satisfied Try Excelsior

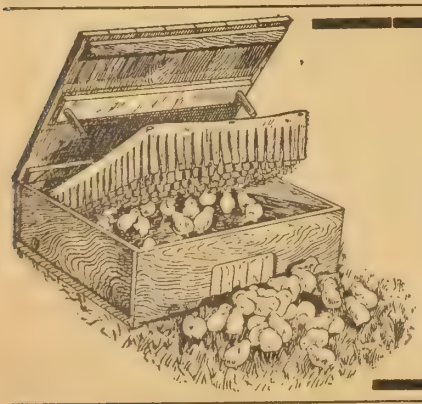
If Your Dealer Don't Keep It Write Us

A balanced ration for the baby chicks. We have been manufacturing Excelsior Chick Food for years, and it is made to meet the conditions of California. Those who feed Excelsior have no trouble raising strong, healthy chicks.

We also make ***Excelsior Egg Food*** and Excelsior Scratch Food; nothing better. For particulars write

Excelsior Cereal Milling Co.

242 Central Ave., Los Angeles, Cal.



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EGGS FOR HATCHING—WHITE LEGHORNS—MITCHELL STRAIN

Large birds, heavy layers, bred for highest utility only. Order book now open for season 1909

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North Fair Oaks Altadena Cars

Los Angeles buys over $700,000 worth of butter from Tulare county every year.

El Centro and Meloland, Imperial county, will forward about 80 cars of onions.

Profit in the Poultry Yard

By Mrs. Frank Metcalf

We solicit short articles of a practical nature from the fancier and utility breeder, giving their experience with poultry. All inquiries pertaining to feed, management, disease and its prevention will be answered through these columns.

MITES.

A SMALL insignificant subject, but oh, the loses these pests cause us! One gets careless a few days, and lo and behold, they accumulate by millions and millions, to the torture of the fowls, and the emptiness of the egg basket. I thought my well distillated coops so exempt from mites, that I became rather careless myself during a visitor's stay, and when I sprayed them again I found a deplorable state of affairs. Under one nest that was placed under a shade tree but a short time before, there were bunches and bunches of fat hearty looking mites on the bricks the box was sitting upon. In the corner of one coop, they had massed behind the plate under the roof and were very hard to dislodge. Spraying them from the inside drove them out and the outside of the coop also had to be soaked full of kerosene or distillate and more poured between the joining places of every board, for where the boards were nailed onto the plates, there they were, thick and plenty, and a steady stream of oil was poured on until they were driven through and routed out. Every two weeks the same treatment will be necessary during the summer, but a solution of some of the mite killers on the market will probably prove as effective as the distillate and kerosene, which happened to be handy, therefore I used it.

Seems to me it is time to invent a coop of galvanized iron, that will contain no joints nor laps where these pests can find a hiding place. Whitewash cracks and scales up enough to make ideal breeding places for these vermin, and wherever two timbers meet, there is a nest ready for them to make their homes, coming out in droves to dine off our poor abused chickens, draining their very life blood, then going back to their lairs to dream of other raids all day, and coming out fresh and hungry as soon as the birds go to roost the next night to repeat their depredations, and we wonder "why those hens don't lay?"

O! The Mites, Mites, Mites, how our carelessness invites
Hoards of these unwelcome guests to come and stay.
Cracks and nailholes they adore, fill them full and look for more.
And the way we build our coops makes homes galore.
For their sisters, aunts and cousins, and they bring them by the dozens,
And their tribes increase by thousands every day.

—Mrs. Metcalf.

POULTRY QUERIES.

Hatching Peacocks.

I came in possession of eight Peacock eggs and put them under a hen to hatch. As I do not understand anything about peacocks, I would kindly ask you what and how to feed them. Any other information concerning peacocks would be appreciated.—L. S.

Peacocks hatch in from 24 to 29 days and require practically the same care as do young turkeys, with diet of hard-boiled eggs, cracked wheat, wheat, coarse oat meal and bread crumbs. They will hunt for insects and worms very soon, and if these are not to be found, will need a trifle of fresh meat occasionally. They must be protected from wet and cold the same as young turkeys, and are much tamer and pleasanter pets. They have very unpleasant voices, especially when they learn to waken one early in the morning, as they will do if they learn which window belongs to their mistress.

They love to roost very high and will try to find a roost when but a few days old. They live to be from 20 to 25 years old, and reach maturity very slowly. The train does not develop until the cock is in his third year, and they cannot be mated until he attains his full plumage.

MOLTING OF FOWLS.

IN a bulletin issued by the New York experiment station, reporting on plumage of fowls and especially on forcing of molt, we note that:

It was found that a Leghorn chick has pinfeathers for flight when it comes from the shell. "In two or three days it develops pinfeathers that will become main tail feathers. The down grows longer and on certain areas of the body develops shafts. Within a few days the shafts burst open, allowing the web of the feather to spread out, but the down often clings to the tip of the opened feather. The ragged appearance to be noticed on two or three weeks' old chicks is due to this clinging of the down tips. The first body feathers to appear are those at the throat, just above the crop. From this point a line of feathers extends down each side of the crop and breast. When this line begins to show, a tuft appears on each thigh and a line down the spine. The feathered areas increase in size as the chick grows older, so that at the age of four or five weeks they have grown together and the healthy chick looks to be well feathered. . . . The first feathers were stained red and those that replaced them were stained black. At the age of eight weeks all the red feathers in tail and wings had been molted, and at 13 weeks all the black feathers had been replaced by white ones."

Just before maturity another molt takes place. "The pullets appeared to undergo this molt whether they laid or not. After the pullets began to lay they seemed to shed no more feathers so long as they continued in production. When they ceased to lay many of them began to molt. In some cases the molt was complete, extending to the flights and the tail; in others it went no farther than the body feathers, while in still others it included only a few feathers on different parts of the body. . . . The first mature molt comes at the end of the first year of laying. The rotation followed closely that of the prenuptial molt before egg production commenced—the oldest feathers being shed first."

To test forced molting 232 single comb White Leghorns were divided into 6 lots. "The attempt to force the molt was by means of restricting the amount of food rather than by changing the quality of the ration. The starvation period lasted for four weeks. In the first week the amount of food was gradually reduced to one-half the usual quantity. In the follow-

Coulson's POULTRY FOODS

Growing Chick ...Food...

Can be fed damp as a mash or dry in hoppers. Feed it to your chicks up to 3 months old. Gives rapid growth and health.

It will save your grain bill, and you cannot afford to be without it.

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High protein MEAT SCRAP.
Just what the name implies.

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$1.50 Per Setting

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Change your farm wagon into an easy riding **Spring Wagon** in 2 minutes. Fruit, vegetables, eggs and live stock won't damage over rough roads—thus **bring more money.** Most wonderful money-savers you ever saw. Double the life of any wagon. Sold on trial. Write today for particulars. Postal will do.

Harvey Spring Co., 7717 17th Street, Racine, Wis.

ing two weeks about one-third rations were fed, which were gradually increased in the fourth week till, at its close, the flocks which had been starved were given all they would eat." To aid in observing the molt and to detect quickly fowls that had escaped from the pens the hens were dipped in proprietary aniline dyes, orange, violet, carmine, and green being found to be the most enduring colors.

The starved fowls lost an average of 0.42 lb. in weight during the process of molt, losing weight in every case but many regaining the lost flesh before the molt was completed. "About one-half of the fowls in all of the flocks were beginning to molt in the first period, beginning August 11, and on September 29, 1907, about 90 per cent of the starved hens and 78.8 per cent of the fed hens were molting. By October 27 the percentage of molting was about equal and continued on this equality to the end of the molt. In regard to new plumage, on October 27, only 6.3 per cent of the starved hens and 5.9 per cent of the fed hens were completely refeathered. November 25 only 34.4 per cent. of the starved, and 62.2 per cent of the fed hens were completely renewed, while as late as December 30, there still remained 16.6 per cent of the starved and 15.5 per cent. of the fed hens which were not in their new coats.

"On the whole it may be said that from August 25 to October 23 the starved flock showed a larger percentage of individuals molting. After that time there was more molting among the fed hens, though both flocks completed the molt at about the same time. . . . The average time required to complete the molt of the three-year-olds was nearly 104 days; of the two-year-olds, about 101 days, and of the one-year-olds, 82 days. The starved one-year-olds averaged to molt more quickly by 33 days, than did the fed; the starved two-year-olds were little affected; while the starved three-year-olds averaged 20 days longer in molting than did the fed birds. The average time required to complete the molt of the three starved flocks were 93.8 days; of the three fed flocks 97.4 days.

"All this would indicate that the molting process continues much longer than is usually supposed, and that there is considerable variation in the time of beginning the molt between different individuals, and between flocks of different ages, also a wide variation in the length of time it requires individuals to complete the molt. One is further impressed with the fact, that, so far as this experiment is concerned, the method of feeding did not materially alter the normal conditions of molting, except with the one-year-old fowls.

"It is apparent that, as molting increased, egg-production decreased. This was true almost without exception with both starved and fed flocks during each period. It was strikingly true during the starvation period. While some of the hens continued to lay after beginning to molt, and a few began to lay before completing their new coat, no hen continued to lay during the entire molting period.

"Persistent layers, unless broody, appeared to begin the molt within a week after the last egg, and were usually in heavy molt in less than two weeks. Those beginning to molt after October 1 shed more quickly and re-feathered more quickly than those molting earlier, especially to the stage

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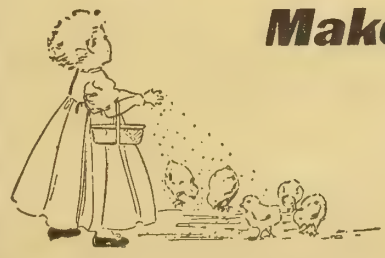

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THE UTMOST CARE is observed in the selection of each of the dozen or more articles composing this unequaled feed; tender seeds, cracked grains blown free from dust, steel-cut oats, tiny pieces of dried meat and bone, willow and pure bone charcoal, are combined with other very necessary ingredients; every article being selected with special reference to its quality, strength and desirability for the needs of the young chick.

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COULSON'S SPECIAL DRY CHICK FOOD can be fed exclusively to your little chicks for the first six weeks, at a cost of about four cents (4c) each; and what is of still greater importance, it will do all that can be done in the way of feed, to bring them through that critical period of their lives in full health and vigor.

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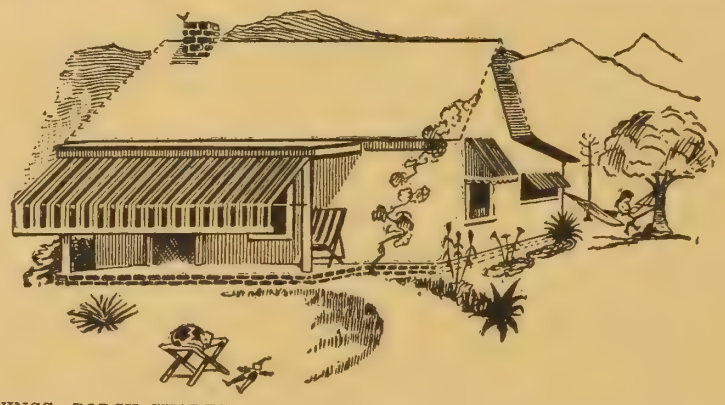

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PRICES—$14 per 100 for all kinds except White Leghorns $10 per 100, and Brown $11 per 100. Cut this ad out and mail with order for 100 chicks of any kind and we will send 10 CHICKS FREE OF THE $14 kind, or 5 free of the $10 or $11 kind. Order at once; we can ship most any day. This offer is good till June 10th. Free chick and hatching egg book, ask for it. We hatch 17 kinds of chicks.

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ON PLANTS ON POULTRY

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Devils **Dust**

Devils Dust is guaranteed to Kill all kinds of vermin on poultry and insects on plant life.

1 lb trial package 40c postpaid.

HENRY ALBERS CO., 534 SOUTH MAIN LOS ANGELES

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White Wyandottes

Black Orpingtons and White Rocks

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San Fernando, California

of advanced molt, when their bodies were well protected.

"Broodiness influenced the time of molt to a great degree. . . . . The mortality in all the pens was large. It averaged 18.8 per cent among the starved and 20 per cent among the fed flocks. The two flocks of three-year-olds had a mortality of 21 per cent; the two-year-olds 16 per cent, and the one-year-olds 20 per cent. . . . In these observations it was found that the hens, from all pens, which began to molt before September 15, averaged 108 days molting, while those which began after that date molted in 81 days.

"In the absence of reliable data as to the best method of feeding fowls during the critical period of the molt, it would seem desirable to follow the practice commonly believed to be correct; namely, to feed liberally on rations which are easy of digestion and rich in protein and oil. _ _

"The rotation of molting was practically the same with hens of all ages—the oldest feather being shed first. The chick and hen both feathered more quickly in such areas as would protect the vital parts. From the incubator to the laying period the chicks experienced at least four molts, either partial or complete.

"Hens have individual traits as to season of molting, but seldom as to rotation of molt. Young hens molted more quickly than older ones. . . .

"The 'forced molt' in one year did not influence materially, as to time and completeness, the molt of the succeeding year.

"The starvation process appeared to increase broodiness. . . . As compared to the fed flocks, the starved hens molted slightly earlier and more uniformly. They were in somewhat better condition at the end of the molt; molted (average) in slightly less time; gained less above first weight during molt; gained slightly more in weight during the year; resumed production somewhat more quickly after molt; laid a few more eggs during winter; were materially retarded in egg production; produced less eggs after the molt was completed; produced eggs at a greater cost per dozen; consumed slightly less food during the year; had slightly less mortality; showed slightly more broodiness; paid a much smaller profit.

"The fowls produced the largest profits in the order of their ages. The one-year-old hens produced the greatest number of eggs and gave the largest net profits. The two-year-olds were a close second with the three-year-olds somewhat farther behind, having, however, a good balance profit to their credit.

"There was considerably less mortality in the two-year-olds, which were hopper fed dry mash, than in either the one-year-olds or three-year-olds, which were fed a wet mash."

Experimentalists say that peas, beans, wheat, oatmeal and some other vegetables contain much flesh-forming substance, but it is difficult to say what proportion of them should be used or what quantity given without doing mischief. There are certain foods that give warmth and aid respiration, and certain kinds that restore the muscular waste of the matured (or increase the bulk of the growing) animal. If we give only warmth-producing substances the consumers will fail in the increase of bone, muscle, etc., and if we give much flesh-producing nourishment it goes to waste or becomes injurious.—Western Poultry Journal.

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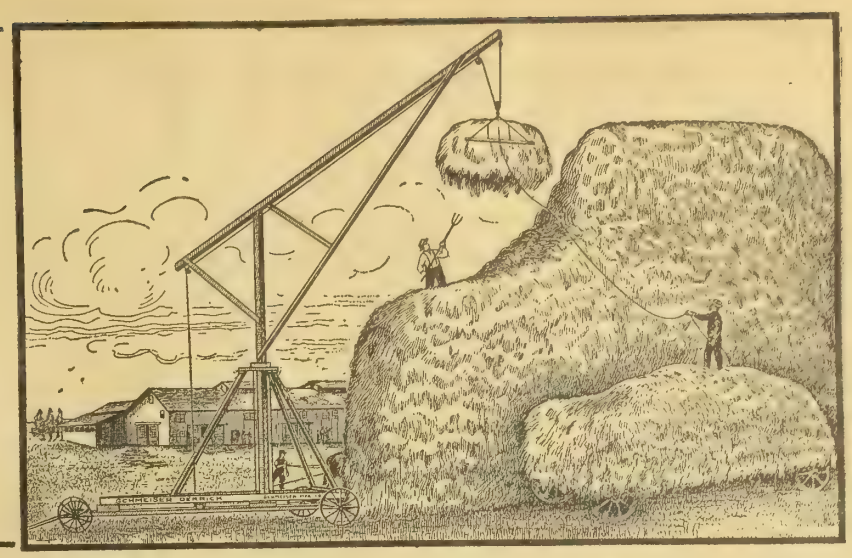

General Agriculture

THE BEET SUGAR INDUSTRY IN THE UNITED STATES.

IN response to a resolution of inquiry which passed the Senate April 8, Secretary Wilson has forwarded a report on the beet sugar industry in the United States. This report contains an interesting summary of facts and figures relating to this industry.

In 1896 there were 6 beet sugar factories in operation and one building, having altogether a capacity for slicing 4,000 tons of beets daily. In 1908 there were 64 factories, with a total capacity of 50,000 tons of beets daily—more than a twelve-fold increase.

From 1898 to 1906 our production of beet sugar grew from 36,000 tons to 484,000, an increase of more than thirteen fold in eight years.

In 1896 41,000 acres of beets were harvested; in 1906 376,000 acres, or more than nine times as great an area.

The price of beets, like prices of other farm crops, has risen steadily. In 1896 the factories paid $4.10 per ton; now they have to pay $5.35.

In 1898 the farmers had 364,000 tons of beets to sell to the factories, for which they received $1,564,000. In 1906, just eight years later, they had 4,236,000 tons of beets to sell, and received for them $21,604,000—a twelve-fold increase in beets and a fourteen-fold increase in money returns.

The total amount paid out by factories for beets during the past twelve years amounts to $121,000,000.

The total capital invested in beet sugar plants in this country is about $70,000,000, and this does not include investments made by factory owners in farm lands, irrigation works, etc.

Among other things the Senate called on the Secretary of Agriculture to state how much beet sugar can be produced in the United States. The Secretary replies that we have demonstrated conditions of soil and climate favorable to beet culture in an area of at least 274 million acres, and that it will only take one acre out of every 200 of this to produce all the sugar we now import from foreign sources.

He estimates "that if the sugar beet were grown throughout those portions of the United States adapted by nature and with the aid of irrigation to its culture, with a system of rotation including the cultivation of the beet every fourth year, 15 million tons of beet sugar could be produced in the United States annually, or more than the world's total production of cane sugar.

It appears from this report that the people of European countries have to pay a good deal more for their sugar than we do. For the years 1904-1907 the average retail price of lump sugar in Naples and Milan was 13½ cents per pound, in Amsterdam 9.4 cents, in Madrid nearly 9 cents, in Stockholm 7½ cents, in Vienna and Budapest 7¼ cents, in Paris 6¼ cents, in Dresden and Bremen nearly 6 cents, and in Brussels 5¾ cents.

The prices given are for lump sugar because that is the grade most uniformly quoted in the European statistics. This grade appears to be much more generally consumed than granulated in most countries of Continental Europe.

The Brussels Sugar Convention, which went into effect September 1, 1903, caused a radical reduction of the price of sugar in many European countries. In Belgium the fall in the retail price was 3¼ cents per pound, in the German cities 1¾ cents, and in Austria-Hungary 1¼ cents.

The Secretary gives a flattering account of the progress made in developing the beet sugar industry, and takes a very cheerful view of its future prospects. He concedes that some failures occurred among the earlier factories, but shows that the later factories have been quite uniformly successful. He says that wherever factories have been successfully operated the values of farm lands have risen very decidedly, especially lands under irrigation in the far West. He says beet culture improves the land and educates the farmer. The operation of a factory leads to the investment of capital in many industries more or less related to beet sugar production. The by-products—pulp and molasses—are fed to stock, and their use has largely increased the amount of live stock kept and fed in most factory districts.

Beet sugar factories are now in successful operation in 16 States.

Colorado leads all other States engaged in the industry, having 16 factories. In 1907 these produced 169,000 tons of sugar, or enough, if it had been passed around, to give all the people in the United States four pounds apiece.

California and Michigan follow Colorado at a respectful distance in the race for second place. Michigan has the same number of factories as Colorado, but their product is considerably smaller. California has only 9 plants, but some of the latter are very large. From year to year the production of sugar is about the same in the two States.

Utah has five factories and they are strong producers. Idaho and Wisconsin follow with four each, and there are 10 States with one factory each.

The largest factory in the United States, and one of the largest in the world, is the one at Spreckels, Cal., which is able to slice 3,000 tons of beets in a day, or 100 carloads of 30 tons each.

The oldest successful factory in the United States is the one at Alvarado, Cal., which was established in 1879, and has been making beet sugar for thirty years.

ABOUT SCARS ON HORSES.

There are thousands of horses throughout the country with scars whose owners would like to have scars removed and the appearance and value of the animal increased. It is not generally known that it is possible to remove an old scar tissue and heal with hair on and leave no blemish. ABSORBINE, however, will do the work, and detailed instructions for affecting cure are given in pamphlet "How To Remove Blemishes" which is packed with every bottle of ABSORBINE or will be mailed you postpaid upon request. Mr. L. C. Anderson of Maysville, Ky., writes under date of January 5, 1909: "I cured a very badly dew-poisoned ankle, restored new hair to an old scar by using ABSORBINE." ABSORBINE is $2.00 per bottle at dealers or sent express prepaid upon receipt of price. W. F. Young, P. D. F. 244 Temple St., Springfield, Mass.

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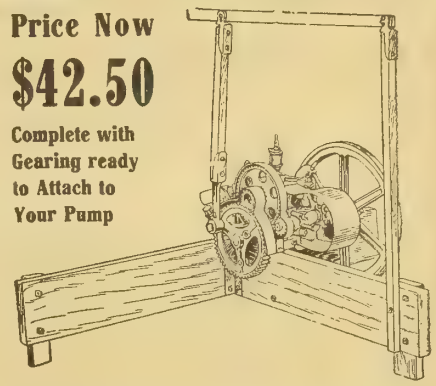

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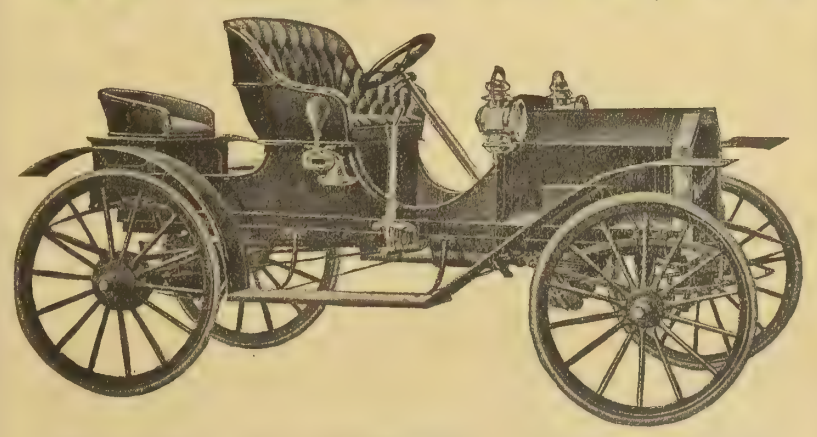

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Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Trouble With Silage.

I have filled my silo with foxtail and alfalfa as per your directions in California Cultivator. I made the silage very wet. The foxtail was in the dough but the alfalfa was very immature. It is still hot but my cows positively refuse to eat it unless it is mixed with bran or shorts, and then they fall off rapidly in flesh and milk. Will you please tell me how long you left it in silo before feeding and if you had any difficulty in making your cows eat it. If so, how did you proceed to make them eat it? The silage does not seem to pack as does corn. I have taken off and hauled out several tons to get down to the good silage, but find that it puffs up and dries out about six inches deep daily, so I have left two feet standing around the outside which I expect to use for manure. This gives me a smaller feeding surface, I found that the water dried out so rapidly that I pumped 10,000 gallons more water on top of it. It is now taking a second fermentation and is pretty hot. It smells and looks like good corn silage, and is a light brown in color. But as soon as the beards are exposed to the air they harden and the cows turn up their noses at it. I expect to give it a fair trial, but am afraid I will have to haul it out to use for fertilizer, which will be a pretty heavy contract. It does not taste sour like corn silage, but has a slightly sweet taste.—B. T. B., Bakersfield.

I am sorry you are having trouble with your silage. We know, however, that if it is made according to direction that it will come out all right, for alfalfa silage has long since passed the experimental stage. Cows are often peculiar in refusing strange foods. When they do not eat they drop off rapidly in the milk flow. We mix the silage carefully if the silo is not filled solidly with one kind. If we have alfalfa silage in the bottom, then on that corn silage, or the reverse. Should we make these sudden changes the cows refuse the feed the first few days. We therefore mix the corn and alfalfa in the silo for a foot so that the change comes gradually. When we begin to feed silage the first days only a quarter silage is put out on the alfalfa hay and this is increased until the cows receive thirty to forty pounds of silage and ten pounds of hay apiece daily. They must always have ten or twelve pounds of long dry roughage with the short cut silage. We were feeding green cut alfalfa in the yards this spring and when hay making began it was not convenient to go out to the alfalfa field for the mowers were both needed in the grain hay. A portion of the land that had been put into barley was an old alfalfa field and the alfalfa had come up so that there was rather more alfalfa than barley in a portion. This was cut and hauled in. The cows simply refused to eat it because of the green barley, and dropped off in milk until they did come to eating it freely. The odd part of it all was that in February they had eagerly eaten of the green barley they afterwards refused so determinedly even to consider as food.

I fear you do not realize that the silage must be kept level in feeding it out and a level cut made each day from the surface. In filling the silo the edges are kept higher until the last and also tramped hard. This forces the packing by a process of wedging, and after the heating has passed the silage is left firm and should be handled with a scoop shovel and not a fork. The tines of the fork penetrate below and loosen it up leaving a loose surface. After the silage has been removed for the day, level it off if any irregularities show, and smooth in firmly with the back of the shovel. Do not dig into it irregularly and expect to have it keep well. This second heating should make it firm, but if it is at all loose in the silo, do not give it up, but get the men in and tramp well again. This second heating will dry out the moisture and it will surely be enough to cook the foxtails well. This silage is sweet and good. Tell those cows that they will soon be begging for it. I think often these discouraging circumstances that come up teach us our business better than if everything went along smilingly. Do not waste any of the silage, that which the cows leave give the outside horses and pigs a chance to eat.—M. E. S.

Spraying Formula.

Kindly give method and formula for exterminating insects from plants and vegetables. My cabbage is infested with insects similar to aphis that are often seen on fruit trees.—W. I. S., Orangevale.

The insect on your cabbage plants probably is the cabbage aphis. The best way to treat is to prevent it from ever getting access to the field. This may be done by giving clean cultivation to the field the season before the cabbage is planted, and then being sure that the young plants when set are not infested. When once on the growing stock, it is practically impossible to dislodge it. Spray for cabbage aphis is made in the same way as recommended in the answer about green aphis given above. As to giving a formula for exterminating insects on plants and vegetables, that would require a page or probably two pages of most condensed information. The best we can do is to refer our subscriber to our issue of March 12, 1908, containing an article which gives nearly twenty-five formulas for sprays for insects and fungus diseases, also much information on the application of insecticides.

By the way, at the head of that particular article, in large type, is the following: "Do you keep your Cultivators? If not, do so. The index every six months makes a file valuable." That one issue of the Cultivator should be worth the price of a year's subscription to many of our readers.

Wooly Aphis.

I have an apple tree attacked by insects reddish brown in color. They form in clusters on the trunk and branches, being readily seen, especially when they become covered with a white down under which they work. They do not seem to bother the foliage, but work entirely on the bark. Is it unlawful to send such specimens through the mail?—C. W. J., Laton, Fresno Co.

Judging from your description, this is the wooly aphis, one of the worst pests the apple grower has to contend with. These insects spend a large part of their lives in the ground at

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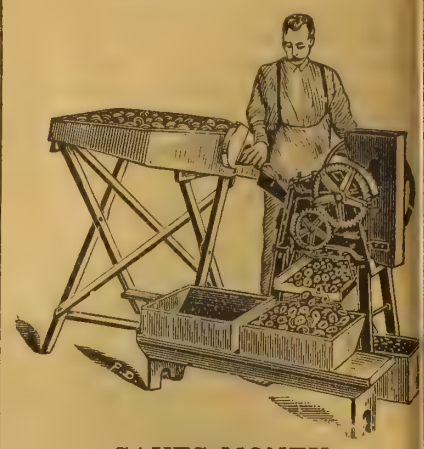

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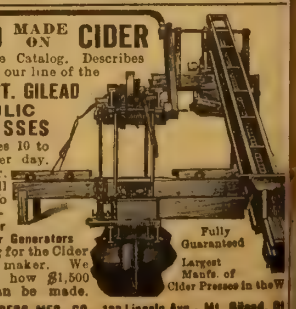

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the root of the tree, and the form which you observe ascends the trunk and proves most disastrous especially to young trees. Where the trees are valuable they should be treated at the roots by an application of gaslime, tobacco, carbon bisulphide or wood ashes. Spraying of the form which you see on the trunk, often called the "aerial form." checks their spread somewhat, but you must get at the root form if the tree is to thrive. It is not unlawful to send these specimens through the mail.

Summer Fallow.

I have something of interest to farmers. I know nothing about farming, but last year bought a small ranch one mile west of Tulare, well run down. I got a gentleman on the next farm to show me how to plow and then plowed four acres of land and kept it well cultivated, and on January 17th planted 80 pounds of wheat and 60 pounds of alfalfa. On May 10th I cut 20 tons of wheat hay and now have a good stand of alfalfa. As I knew nothing of farming, I called on Uncle Sam as my teacher, and I believe the results show the instructions to have been good, and to demonstrate that summer cultivation is the proper thing. If anyone can beat this yield, I would like to know how he does it.—F. M. L., Tulare.

As we once heard a tenderfoot, formerly an Eastern banker never on a farm, express it: "I have nothing to unlearn, so will have the advantage over the Eastern farmer who has come to California with ideas of how farming ought to be carried on."

Spraying for Scale.

My orange trees are now blooming and have the black scale. I wish to spray when they stop blooming with a certain liquid. Please tell me how long to wait so as not to hurt the young oranges.

The orange trees are very thick at the top. Would it hurt if I cut out some of the small branches?—B. P. L., Los Angeles.

It would be much safer to trim out the tops of these trees and especially clear out all dead twigs in the center of the tree so the sunlight can get in, then allow the spraying to rest until fall, or at least August. That will be time enough to keep fruit from becoming smutty next year and avoid danger of injury to your small fruit. Besides, you will probably get a greater percentage of the scale at that time than if you spray now.

Green Aphis.

I send branch of prune tree infested with lice. Is this what is called thrips, and is there any way of destroying it?—M. E. M., Ritchey.

These leaves are infested with a good liberal supply of the small green aphis which may be reached by a kerosene emulsion, a weak solution, or a tobacco tea made by boiling a pound of stems or of dust in two gallons of water until a dark brown liquid is obtained. Add water to make two or three gallons, and the efficacy is increased by adding a pound of whale oil soap to 50 pounds of the decoction. This will not harm the tenderest foliage. You can buy the tobacco extract at any seed store and simply dilute with water and spray.

Fly Paper for Worms.

Referring to reply to article on page 578 of May 13th issue, "Worms Climbing Trees," I am using ordinary fly paper now and it prevents cut worms and other insects injuring the tree or shrub. I tie it around the trunk of the tree or lay strips of it on the ground around the tree or plant to be protected.—J. J. Fitzgerald, 3212 "J" St., San Diego.

Legal Queries

Edw. L. Payne, attorney, 301-304 Douglas Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Payne is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Poisoning Chickens.

A has a lot of chickens. B notifies A to keep his chickens off of his crops and A does not do it. Can B put out signs and scatter poisoned wheat where the chickens are destroying his crops, or what can B do to protect himself?

A, B and C are partners in a pumping plant. Can A and B compel C to sell his share in the pumping plant if it is proven that C is not agreeable? Can two partners force the third to buy or sell?—Subscriber.

B has no right to poison A's chickens, even though he gives A notice that he intends to do so and carries out his threat upon his own land.

In the city of Los Angeles by an ordinance applying only to that city, B might kill the chickens and place the carcasses on A's land without incurring liability.

There is an old state law which gives the right to owner of land trespassed upon to take up the animals and hold them until the damage has been satisfied.

The Legislature further provides that the party taking up such animal has a lien thereon for all expenses incurred and costs in keeping and caring for said animal or animals. Said animal shall be confined in a secure place, and the owner notified. At any time within thirty days from the filing of the notice, which must be recorded, the person claiming such animals may, by paying all damages, expenses and costs, recover them. The damages must be estimated as provided in the act.

When several co-tenants hold and are in possession of real property, as tenants in common or joint tenants, an action may be brought by one or more of such persons for a partition thereof, according to the respective rights of the persons interested therein, and for a sale of such property, or a part thereof if it appear that a partition cannot be made without great prejudice to the owner.

The proceedings for partition are special and statutory and too lengthly to detail in this answer.—E. L. Payne.

Hay Balers' Accounts.

What is the law or custom among hay balers for securing payment of bills where party must sell hay to get money for pressing bills? I believe such information of value to many, both customers and balers.—A Subscriber.

I am not familiar with any custom among hay balers for securing payment of bills.

The Code provides that every person who makes, alters, or repairs any article of personal property, at the request of the owner, or legal possessor of the property, or who improves the same, has a lien upon the same for his reasonable charges for work done and materials furnished, and may retain possession of the same until the charges are paid.

I do not know that this provision applies to baled hay, but think, in all probability, it does. If the person entitled to the lien be not paid the amount due and for which such lien is given, within twenty days after the same shall have become due, then such lien holder may proceed to sell said property, or so much thereof as may be necessary to satisfy said lien and costs of sale at public auction. Ten days previous notice must be given by advertising in some newspaper published in the county in which said property is situated.

In most cases the prompt attaching of the hay, or some other property of the debtor would be effective.—E. L. P.

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FOR SALE—RIGHT IN TOWN, Oranges, Olives, Almonds; plenty other fruit for family use. Twenty acres, all in bearing. Water soft, abundant, piped through the land; turn a faucet and irrigate. On the American River, near Sacramento. Beautiful views of a picturesque country. Schools, churches, fine homes; Prohibition; railroad; electric line being surveyed from Sacramento. W. I. MIDLER, Fair Oaks, Sacramento Co., Cal.

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TULARE CITRUS BELT—WE HAVE the cheapest and best orange lands right here. If you want reliable information about this glorious country, write STRATHMORE REALTY CO., Strathmore, Tulare Co., Cal. Excursion fares from Los Angeles, Cal.

FOR SALE—PALOMITAS VINEYARD 194 acres; 106 planted to choice Emperor, Malaga and Muscat vines, 3 to 5 years old Part or all. Half cash, balance on easy terms. MRS. M. E. SHERMAN, Fresno, Cal.

ORCHARD HOMES FOR SALE—FIVE acres and upwards; fine citrus and deciduous fruit lands on easy instalments and low interest. Write us today. WYATT & WILSON, Winters, Cal.

FOR SALE OF EXCHANGE FOR LOS Angeles or Orange County walnut land, 140 acre mountain apple, berry, vegetable and chicken ranch, near Santa Cruz. WILLIAM RICHARD, owner, 438 River St., Santa Cruz, Cal.

FOR SALE—TULARE CITRUS BELT right here at Exeter, small tracts, small payments, terms, our home 52 years, also dairy ranches. FRED M. HART, Hanford, Cal.

I MAKE A SPECIALTY OF ORANGE and alfalfa ranches and exchanges. 826 Main St., Room 9, Riverside, Cal. N. R. BELL.

FIVE MILES FROM PORTERVILLE, 80 acre ranch for sale, all or half, orange and alfalfa land. Direct Box 14 A, R.D. No. 2, Porterville, Cal.

HORSES.

FOR SALE—ABOUT 200 HEAD OF work and brood mares, including young mules and horses from one year to four years of age. One full blooded Percheron Stallion four years old in May. One Jack about seven years old. Several full blooded Poll Angus Bulls and a number of full blooded Durhams. CHAS. W. HART, Farmersville, Cal.

FERTILIZERS.

NOW IS THE TIME
to fertilize for results in the coming crop.
ARMOUR'S "O.T.M.", "B.B.&P.", and "5-8-2" grow big crops and build up the soil. They have been doing it for years.
THE ARMOUR FERTILIZER WORKS, Los Angeles, Cal.

SHOPPING BY MAIL.

PURCHASE THROUGH US—WE ARE a Mail Order House. We furnish anything desired from a spool of cotton to an automobile. Send for catalog. COLUMBIA COMMERCIAL COMPANY, 204 East 9th St., Los Angeles, Cal.

HOGS.

REGISTERED BERKSHIRE AND POland China hogs, both sexes. C. A. STOWE, Stockton, Cal.

TREES.

FOR SALE—1500 EUREKA LEMONS, 1 and 2 years old; Blue gums, Sugar gums, and Red gums; street and ornamental trees, etc. GEO. R. WARNER, Santa Ana, Cal.

FOR SALE—EUCALYPTUS PLANTS. Small orders or car load lots. A. BLASINGAME, 1523 19th St., Santa Monica, Cal.

250 LATE VALENCIA ORANGE trees for sale, good stock. TH. DANKER, R.F.D. No. 3, Anaheim, Cal.

SEED WANTED.

WANTED—MYROBOLAN OR CHERRY plum pits. In writing state number of trees you have and approximate quantity of seed which can be supplied. Address, GEO. C. ROEDING, Fresno, Cal.

GRAPE CUTTINGS.

STRONG OUT DOOR GROWN ROOTED cuttings. All kinds of plants. Send for 1, 2, 3c list. GEM NURSERY, Los Gatos, Cal.

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BARRED ROCKS, RINGLET STRAIN, direct from the famous E. B. Thompson pens, New York. Have taken more prizes than any other Rocks at The Madison Square Garden Shows. For beauty, size and laying quality, unequaled. Eggs per setting $1.50 and up. Reduced rates on incubator lots. Special matings. $3.00 per setting of 15; 2 settings $5. Agent for The Potter System of Selecting the Laying Hen. Price $1.00. A. C. CISSELL, 1812 Santa Monica Ave., Los Angeles, Colegrove car to Swan street.

BLACK MINORCAS—FINEST QUALity. Bred to lay big white eggs and up to standard size. Eggs $1.50 to $3.00 setting. Grand Cockerels reasonable. J. P. McDONOUGH, Geyserville, Cal.

BUFF PLYMOUTH ROCKS, BRED TO lay, win and pay. My birds have won more prizes than all competitors combined. Eggs and stock. Circular, DR. W. H. HOLMES, Slavin Block, Pasadena, Cal.

MAMMOTH PEKIN DUCK EGGS, $5.00 per 100. Ducklings. White Leghorn eggs, select, 10 cents per dozen above San Francisco quotations. J. P. CLOUGH, 3826 Peralta Ave., Dimond, Fruitvale P.O., Cal.

BLUE ANDALUSIANS, NORTHERN strain. Best egg machines for interior of California and Arizona. Eggs, $1.50 and $2.00 per 14; $2.50 and $3.50 per 28; incubator lots. Inquire, L. A. WILSON, Winters, Cal.

3000 CHINESE PHEASANTS, ALSO eggs for sale. Splendidly illustrated book 25 cents, just published. DILLAWAY'S PHEASANTRIES, Everett, Washington.

FOR SALE—INDIAN RUNNER DUCKS, first class stock, great layers. Write for prices. Eggs for hatching, $1.00 per dozen, $5.00 per hundred. GEO. BAUM, Mountain View, Cal.

CORNISH FOWLS EXCLUSIVELY—The best for the table and for crossing. Beautiful and docile. Write for prices. Eggs $3.00 a setting. JOHN D. MERCER, 104 West First St., Los Angeles, Cal.

PARTRIDGE WYANDOTTES—C. Andrews, 823 W. Franklin Ave., Hollywood, Cal.—1st cock, hen, cockerel and pullet; 2 cups, Poultry Breeders' Show, 1908.

BABY DUCKS—MAMMOTH WHITE Pekins and pure bred Indian Runner ducks, one week old. $15.00 per 100; $2.00 per doz. Eggs $4.00 per 100. J. W. LYON, Gardena, Cal.

FOR SALE—ABOUT 150 HOMER pigeons, good birds for breeding. Will sell the bunch for 20c per bird. R. DEDLOW, National City, Cal.

O. L. CRANE, BREEDER OF PIT AND Cornish Indian Games. Rural No. 3, Santa Rosa, Cal.

WHITE GUINEAS—STOCK AND EGGS for sale. Write M. F. COVELL, Escondido, Cal.

MACHINERY.

FOR SALE—SEVERAL CENTRIFUgal pumps, standard makes, in good running order. Have also fittings for same. These can be bought cheap. N.W. cor. Main & Bruno Sts., Los Angeles, Cal.

FOR SALE—RENT OR EXCHANGE, boilers and engines, gas engines, pipe and oil well casing, pumps, all sizes and makes; get our prices before you buy. A. CANNADY & CO., 691 N. Main St., Los Angeles, Cal.

FOR SALE—IF YOU ARE IN THE market for gasoline or steam engines, look over our stock and get our prices, which you will find to be the lowest. We guarantee full value for your money. BAILIE & BRANDT CO., 943 N. Main St., Los Angeles, Cal.

FOR SALE—COMPLETE LINE OF A. C. and D. C. motors new, also some rare bargains in secondhand sizes. We also rent motors and generators. See us for anything in electric apparatus. BAILIE & BRANDT Co., 943 N. Main St., Los Angeles, Cal.

FOR SALE—16 H.P. LAMBERT ENgine, in good running order, just overhauled. Will be sold at a snap. MACHINERY EXCHANGE, 117 Bruno St., Los Angeles, Cal.

FOR SALE—DE LAVAL SEPARATOR, in perfect condition, capacity 400 lbs. per hour. W. J. WALLACE, R. D. 1, Riverside, Cal.

FOR SALE—10x10 BELT DRIVEN AIR compressor, almost new, at a greatly reduced figure. Must be seen to be appreciated. BAILIE & BRANDT CO., 943 N. Main St., Los Angeles, Cal.

HELP WANTED.

WANTED—A MAN TO BUD DEciduous nursery stock. State experience. Good wages to first class workman. Address, FANCHER CREEK NURSERIES, Fresno, Cal.

Have the Time of Your Life

with my Portable Billiard and Pool Tables. Send for Catalog and let me show you good, practical Tables at the price of toys. Used anywhere. No special room required. **C. RIDDERHOF**
Merchants Trust Bldg., Los Angeles

If your dealer cannot supply these jars, send $3, and we will express prepaid thirty (30) quart size ATLAS E-Z SEAL JARS to any town having an office of the Adams or U. S. Express Co., within the States of Pennsylvania, New Jersey, New York, Delaware, Maryland, Virginia, West Virginia, Ohio, Illinois, Indiana or Michigan, or we will quote delivery prices in other portions of the United States by freight or express.

This is the Jar That Saves You Trouble

The Atlas E-Z Seal Jar — the best made and most convenient fruit container yet put on the market.

It has a mouth sufficiently wide to take in large fruits, like peaches and pears, *whole*.

It seals by a simple downward pressure of the hand, and *when* sealed, keeps its contents perfectly for any length of time. The

ATLAS
E-Z Seal Jar
(Lightning Trimmings)

is machine-made; of extra tough glass and very strong at top where common jars so often break. Being smooth finish on the lip, there are no fine glass particles to fall into the jar, as sometimes happens when putting cap on a hand-made jar. The

Atlas Special Mason

has a wider mouth, but is made with screw cap.

Always ask your dealer for "Atlas" jars and take no substitute — then you have the best.

A Book of Preserving Recipes
Sent free to every woman who sends us the name of her grocer, stating whether or not he sells Atlas Jars.

HAZEL-ATLAS GLASS CO., Wheeling, W. Va.

Angle Lamp
The Light That Never Fails

Thousands in use all over the country. A good light is the greatest pleasure and the first necessity of every home.

The only lamp on the market that is sold under an absolute guarantee.

Remember, the light from Kerosene is the light science has agreed upon as being the purest and best, because it is soft and mellow and restful to the eyes. Here are a few of The Angle Lamp Merits:

NO UNDER SHADOW. NO SMOKE, NO ODOR, LITTLE HEAT.

GREAT ECONOMY—COST LESS TO BURN than an ordinary lamp. As easy to operate as gas or electricity, and better than either. **ABSOLUTELY SAFE** under all conditions. Lighted and extinguished like gas. Burned **HIGH** or **LOW** like **GAS** without a trace of odor. And a **BRILLIANT, soft,** steady, shadowless light—but this you will have to see to appreciate.

The lamp as shown in cut burns 22 hours on 3 quarts of oil.

Send for Illustrated Catalogue with Prices

Boesch Lamp Co., 1135 Mission St., San Francisco

Established 1869 Incorporated 189

SECURITY SAVINGS BANK

Security Building, Fifth and Spring Streets

Established 1889
Oldest and Largest in Los Angeles

Capital and Reserve, $1,300,000.00
Resources, over $22,000,000.00

Over 50,000 Depositors

4% Interest on Savings Accounts
And on Six Month's Certificates of Deposit

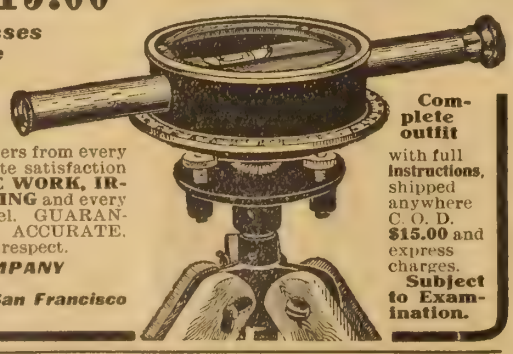
3% On "Special Ordinary" Accounts
Which accounts MAY BE CHECKED AGAINST without presentation of pass-book. Interest is paid monthly on the minimum monthly balances.

BOSTROM'S $15.00 FARM LEVEL

With Magnifing Glasses in the Telescope

enables you to read Target at a distance of over 400 yards, therefore the problem of a FARM LEVEL with TELESCOPE at moderate cost has at last been solved. Voluntary letters from every State in the Union show the complete satisfaction it gives for all kinds of **DRAINAGE WORK, IRRIGATION, DITCHING, TERRACING** and every sort of farm work requiring a Level. GUARANTEED to be absolutely SIMPLE, ACCURATE, DURABLE and dependable in every respect.

PALACE HARDWARE COMPANY
Coast Agents
581 Market Street San Francisco
Write for Booklet



Complete outfit with full **instructions**, shipped anywhere C. O. D. **$15.00** and express charges. **Subject to Examination.**

When writing advertisers, mention Cultivator.

Household Department

WHO MARCHES NEXT MEMORIAL DAY?

Who marches next Memorial Day?
Speak up, brave comrades; let men say
"The Post turns out in force this year"—
Grant's veterans, Sherman's infantry,
Sheridan's tireless cavalry,
Farragut's seadogs without peer;
Tireless and fearless in the past,
Bear yourselves proudly to the last,
Though years fly fast and death draws near.

Who'll bear the dear old Flag—the bright
Tri-colored banner, red and white
As sunset's glory, spotless snow,
On whose broad field of heavenly blue
The golden stars of statehood true
Like bivouac fires divinely glow?
'Tis but a wisp of silk; the staff
Light as a boy's slight wand. You laugh;
They seemed so forty years ago.

In joy or sorrow, for the list
Is long of loved ones we have missed
From camp and banquet, field and mart;
In ancient foray, field or fray,
And peaceful death-beds passed away,
They from our hearts were torn apart.

God give them peace Memorial Day;
Whereas His blessed Islands lay
In golden light, or purple haze,
Where deathless flowers and healing balm
For tired eyes, and holy calm
Await the brave whose fadeless bays
Crowning immortal brows reward
Heroes whose lives were given to guard
The Right, through the eternal days.

What shall we say Memorial Day?
That we tread fearlessly the way
From Manhood's prime to Age's frost;

MEMORIAL DAY.

WITH heads uncovered and with hearts attuned to grateful memories, we pause again beside the tomb where valor sleeps. With flowers and tears we voice the soul, and bow the head in contemplation of the sacrifice. And though the language of the lips be fruitless of a fitting eulogy, with words that falter and that fail the task, we strive to speak a Nation's homage to its martyred dead. Though crowding years have hurried on since these brave soldiers fell on fields of blood, remembrance knows no flight of years, and heroes' names and heroes' deeds are treasured in the Nation's heart, and others, too, who fronted danger side by side with those who fell where bullets sang, have heard the call in later years and sleep again beside their comrades in the silent camp. And others with whitening hair, are yet among us, and they gather yet, in thinning ranks, to march with tribute to the brother's grave. To all of these, the living and the dead, be highest honor and a fadeless name. Let children's children hear again the deathless story of their sacrifice; their sacred dust let no man desecrate. For in that distant day alone will patriot sons forget their deeds, when gratitude shall spurn the hand that brings a gift, and pensive memory shall forget her name.—Homer Hoch,

Who'll lead us through the crowded streets
While cornet's blare and base drum's beats
Help us to keep unwonted time
To martial strains that give new life,
To memories of those years of strife
And trial in yon southern clime;
Wherein we poured out Youth's sweet bloom
And Manhood's strength, like the perfume
That censers waste in fanes sublime?

Not the old colonel tried and true,
Nor his stout major; in review
Or march they'll lead us nevermore.
Some captain brave, lieutenant gay,
Or sergeant proved in march and fray,
Succeeds to the command they bore;
When, waking from the spell of peace,
In memories proud we felt surcease
Of pain and donned the blue once more.

In memories proud, we felt surcease
Of losses blending joy and pain;
Of gallant lives given to death
Loyally, cheerily as rain
Falls on the white-hot lava-plain
To perish in its seething breath;
In charity, to those grief-worn,
Watching in vain for the return
Of whom "Unknown" the record saith.

Who speaks for us Memorial Day?
Whose burning words shall for us say
Something that brings our lost youth near;
The hopes and aims of high emprise
That made life nothing in our eyes
And Honor more than Death or fear;
Who shall interpret for us, now
That men to gold and pleasure bow,
How love of country was most dear?

Whom shall we miss Memorial Day?
Well is it that long years allay
The burdens of the laboring heart
As in the grand, grim past we trod
The wine-press of the Wrath of God
Regardless of the pain or cost;
That still we prize o'er wealth and Power
Our fatherland, and Freedom's dower,
For which such precious lives were lost.
—Charles Winslow Hail, in May National Magazine.

BETHLEHEM.

O little town of Bethlehem,
How still we see thee lie!
Above thy deep and dreamless sleep
The silent stars go by,
Yet in thy dark streets shinneth
The everlasting light.
The hopes and fears of the years
Are met in thee tonight.

For Christ is born of Mary
And, gathered all above
While mortals sleep, the angels keep
Their watch of wondering love.
Oh, morning stars, together
Proclaim the holy birth
And praises sing to God, the King,
And peace to men on earth!

How silently, how silently,
The wondrous gift is given!
So God imparts to human hearts
The blessings of his heaven.
No ear may hear his coming,
But in this world of sin,
Where meek souls will receive him still,
The dear Christ enters in.

O Holy Child of Bethlehem,
Descend to us, we pray!
Cast out our sin and enter in;
Be born in us today.
We hear the Christmas angels
The great glad tidings tell—
Oh, come to us, abide with us,
Our Lord Immanuel.
—Phillips Brooks.

It is astonishing how much patience a man has where his own faults are concerned.

THE SAVINGS AND LOAN SOCIETY.
101 MONTGOMERY ST.
SAN FRANCISCO

THE officers and directors of this bank have always made the best interest of patrons a matter for first consideration, and its Capital and Surplus, amounting to $1,100,000.00, stands as an absolute guarantee for the safety of deposits. Accounts may be opened by mail.

THE OLDEST SAVINGS BANK IN CALIFORNIA

Pioneer Roofing

Of all ready Roofings, Pioneer "Rubber Sanded"—and Pioneer "Rubber Flaxine"—are best.

No other roofings compare with them in wearing qualities.

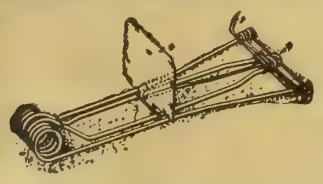
Before you decide on what roofing to use, it will pay you to investigate "Rubber Sanded" and "Rubber Flaxine."

Samples and Roofing Booklet "F" mailed free upon request.

PIONEER ROLL PAPER CO.
Department 11, Los Angeles

Manufacturers of Ready Roofings and Refiners of Asphalt.

MACABEE GOPHER TRAP



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Z. A. MACABEE, LOS GATOS, CAL.

Your Eastern Trip

SOUTHERN PACIFIC

May be arranged so that you may travel by way of

New Orleans and the Sunset Route

San Francisco and the Ogden Route

Portland and the Shasta Route

Enjoying the balmy air of the South or the cool and bracing air of the North.

Personally conducted excursions every day from Los Angeles via all routes without change to principal eastern points.

Southern Pacific

About the House

THE days are growing longer and as the warm season approaches the wise housewife provides for the family table more fruits and vegetables and fewer pies and meats. A good warm-weather dish to use instead of meat is made of rice and cheese. In a buttered baking dish, put alternate layers of boiled rice and cheese broken into small bits or grated. Place bits of butter and a little pepper and salt on the layers of rice. Moisten the whole with sweet milk and cover with a layer of buttered crumbs, and bake in a quick oven.

A good salad that is quickly made and can be used these spring days when a meat dish is lacking, is one of salmon. Mix together equal quantities of finely picked salmon and chopped celery, seasoning with salt and pepper, and moistening with vinegar. Lettuce may be used in place of celery.

A delicious cherry salad—and one good to look upon, too,—is made by carefully seeding some fine cherries and laying them in crisp lettuce leaves, garnishing with a few cherries that have been left whole on their stems. Serve with any good mayonaise. If you wish, after removing the cherry stone fill the cherry with nuts—any kind you wish.

A variation of strawberry shortcake is made by baking a sponge cake in a round pan and when cool, but not cold, cut a circle in the top, carefully lift off and "scoop" out the inside of the cake, leaving a hollow shell. Fill this with strawberries, or any other berries, that have been well sugared. Replace the top of the cake and cover with a thin white icing. Cut in wedge shaped pieces and serve with cream and sugar. The inside of the cake can be used for puddings, so there is no waste in the "hollowing out."

Did you ever boil eggs? Take off shell, lay on a round of buttered toast and cover with a hot cream sauce that has one or two yolks of eggs beaten into it and seasoned a little more than usual. It makes a palatable dish and is the "change" that we all like some times.

Speaking of new dishes, "Everybody's" tells of a new shell-fish.

"The guest glanced up and down the bill of fare without enthusiasm.

"Oh, well," he decided finally, "you may bring me a dozen fried oysters."

The colored waiter became all apologies.

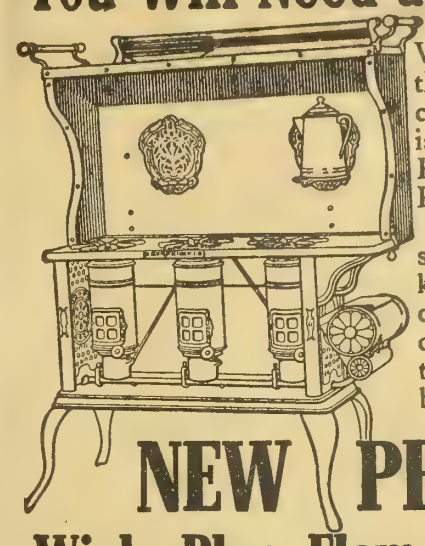
"Ah's very sorry, sah, but we're out ob all shellfish 'cepting aigs."—Elbepe.

DOMESTIC ECONOMY.

Out of our general fund my wife takes for herself and gives me, a fixed personal allowance. We each preserve that inviolate. We must dress ourselves and meet certain definite expenses out of these individual funds. If I exceed the speed limit in neckties I have to sober up until next month. If I decide to switch from $5 shoes to $7 shoes, I can do so without turning off the light that makes home happy. If my wife pays $20 for a hat I can admire the hat, and laugh over the fit of folly that drove her to such extravagance. It is no concern of mine. I know that she will have to economize somewhere.—American Magazine.

"As between a chatterin' woman an' a squeaky phonograph give me th' latter, fer it'll run down sumtime."

You Will Need an Oil Stove

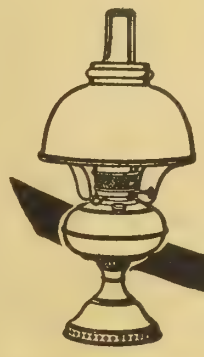


When warm days and the kitchen fire make cooking a burden—then is the time to try a New Perfection Wick Blue Flame Oil Cook-Stove.

Marvelous how this stove does away with kitchen discomforts—how cool it keeps the room in comparison with conditions when the coal fire was burning. The

NEW PERFECTION
Wick Blue Flame Oil Cook-Stove

is the only oil stove built with a CABINET TOP for holding plates and keeping food hot after cooking. Also has useful drop shelves on which to stand the coffee pot or teapot after removing from burner. Fitted with two nickeled racks for towels. A marvel of comfort, simplicity and convenience. Made in three sizes—with or without Cabinet Top. If not with your dealer, write our nearest agency.



The Rayo Lamp Just such a lamp as every one wants—handsome enough for the parlor; strong enough for the kitchen; camp or cottage; bright enough for every occasion. If not with your dealer, write our nearest agency.

Standard Oil Company
(Incorporated)

WOULD YOU LIKE TO SLEEP ON A MATTRESS

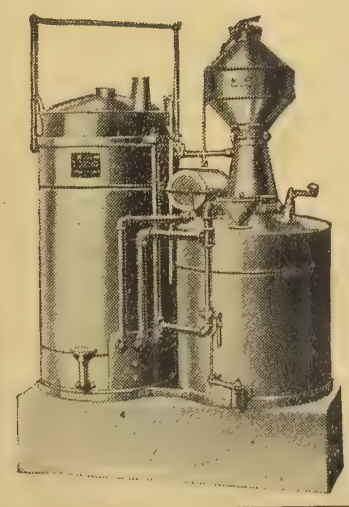
That is guaranteed to be absolutely hygienic?
That insures healthy, comfortable sleep?
That possesses all the good qualities of the finest hair mattress at about one-half the cost?
That is made in a factory where every precaution has been taken to insure the most perfect sanitary conditions?
That is made by skilled workmen in the most approved manner and the latest style?
That is guaranteed to give perfect satisfaction or your money promptly and cheerfully refunded?
That costs $15.00 for the full size, $12.50 for the ¾ size, $10.00 for the single size and is positively the best mattress made anywhere at these prices?

A Postal Card Addressed to the

John Breuner Co
Sacramento, California

Will bring you a booklet describing their famous "Kapokeen" Mattress, which has all the good points mentioned and many more. Write today

THE MODEL ACETYLENE GAS GENERATOR



Light Your Home With It

It is the **newest, most economical** and **safest,** being **accepted** by all Insurance Co's.

It's **new** feed mechanism **prevents** a waste of Carbide.

Send for a catalogue before you choose your generator and learn why and where the **Model** is **superior** and guarantees satisfaction.

An **exceptionally** large discount offered to salesman.

For further information address

J. M. Gillis
Box 573, - Stockton, California

San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, May 26, 1909.

Butter.

An advance of 2½ cents is noted in the butter market this week. Good demand keeps the stock fairly well cleaned up.

Produce Exchange wholesale quotations are as follows with actual selling price to the trade 2½c advance on Extras.

Creamery ex per roll 52½
Firsts 50
Eastern extra 47½
Cooking 22½
Butterine .....16@20

Cheese.

Southern California Anchor 18
Northern fresh 15
Anchor Young America 17
Longhorn 21
Eastern singles 20
Cheddars 19
Swiss .....16@17
Imported Swiss 30
Daisy .....20@21
Limburger 21
Oregon triplets 19
Twin 18½

Eggs and Poultry.

Eggs shows their independence and have taken another advance during the week. Market is firm at this writing.

Eggs local candled 27
Eggs extra selected 29
Case count buying price 24

Dealers pay for live stock.

Hens per pound .....16@17
Young roosters 16
Fryers per lb 23
Broilers per lb 25
Broilers 2 lb 30
Roasters 20
Old roosters 8
Turkeys .....20@24
Geese 16
Ducks 18
Squabs .....1.25@1.75

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs from 175 to 200 pounds 7¼
Prime steers .....4¾@5
Heifers .....4@4½
Calves per pound 5
Sheep ewes per head .....3.75@4.00
Lambs per head .....3.25@3.50
Wethers .....4.50@5.00

Potatoes.

Wholesale prices are:

Sweets per box .....2.25@2.50
Sweets choice .....1.25@1.50
Sweets Red 1.50
New per box .....1.00@1.10
Early Rose local .....2.50@2.75
Early Rose northern .....2.50@2.75
Burbanks local 2.75
Lompocs .....2.60@2.75
Highland Fancy .....2.25@2.50
Oregons Burbanks 2.75
Watsonvilles 2.75
Utah's .....2.00@2.25

Onions.

Wholesale quotations:

Northern Aust. Brown 3.50
Imperial Bermudas per crate 1.00@1.15
Texas Bermudas per crate ..1.00@1.10
Coachellas 1.00
Coachellas sks 1.50
White wax per crate .....1.10@1.25
Garlic .....10@12

Vegetables.

Artichokes per doz northern ....50@75
Artichokes locals .....40@75
Asparagus .....8@10
Beets per sk .....90@1.00
Bell peppers per lb .....20@40
Beans string .....5@8
Beans wax .....7@9
Brussels sprouts per lb .....9@10
Cabbages per sk .....75@85
Cabbages red per lb 3
Celery per crate .....6.00@6.50
Chili per lb 25
Chili dried .....9@10
Chicory per doz 35
Cucumbers per doz hot house 1.25@2.25
Cauliflower per crate .....2.25@2.50
Carrots per sk .....1.00@1.25
Corn per doz 25
Chives per doz 1.00
Endive per doz 25
Egg plant 25
Green onions per doz bunches ..15@25
Horseradish per lb 12
Summer squash .....75@85
Leeks .....40@50
Lettuce choice .....50@75
Mushrooms per basket 3.00
Oyster plant 50
Okra per lb 40
Peas per lb .....6@7
Parsley doz .....20@40
Parsnips .....15@20
Rhubarb Northern per box ..1.75@2.00
Rhubarb C W .....75@1.00
Radishes per doz .....15@20
Spinach per doz .....15@20
Turnips sk .....65@75
Tomatoes crate .....2.25@2.50
Water cress .....15@20

Citrus Fruits.

Navels fy .....1.50@2.75
Navels ch .....1.25@1.50
Tangerines halves .....1.60@1.75
Grapefruit seedless .....3.00@3.50
Grapefruit seedlings .....1.50@2.00
Lemons fy .....1.75@2.00
Lemons ch .....1.00@1.50
Unpacked .....1.00@1.35
Limes half box .....1.50@2.00

Fresh Fruits.

Wholesale prices on the market are:

Apricots per crate .....2.00@2.50
Baldwins 4½ tier .....1.50@2.00
Bellflowers .....1.25@2.50
Newton Pippins 2.50
W W Pearmains .....1.75@3.00
Spitzenberg .....2.25@2.50
New apples 50
Jonathans 1.75
Cherries white .....65@85
Cherries black .....90@1.00
Cherries per lb .....6@9
Cherries, white bulk .....3@5
Aligator Pears per doz .....3.50@4.00
Custard apples per lb .....10@15
Guavas .....4@6
Pineapples per lb 10
Loquats per lb .....2@3½
Pears box .....1.00@1.50
Raspberries .....4@5
Strawberries fy .....6@7
Strawberries ch 3
Blackberries .....6@7
Gooseberries 8
Loganberries .....6@7
Currants 2.00
Figs .....2.00@2.50

Dried Fruits.

Wholesale prices are:

Apricots .....10@12
Evap apples fy per lb 8½
Figs loose white 5
Figs blk 5
Peaches in boxes .....6@8
Peaches sacks .....6@7
Pears 9
Plums pitted .....8@9
Nectarines .....7½@9
Prunes 30's to 40's boxed 8
Prunes 40's to 50's 7½
Prunes 50's to 60's 7

RAISINS—Muscatels, 2-crown, loose, 50-lb. boxes, lb., 3½c; do., 3-crown, 4c; do., 4-crown 5c; sultanas, bleached, lb., 9c; do., unbleached, 3½@4c; new seeded raisins, 16-oz. packages, 6c; do., 12-oz. packages, 5c.

Beans Dried.

Wholesale prices are:

Pink No. 1 .....3.75
Limas per ctl 4.50
Black eyes .....3.75@4.00
Lady Washington .....5.10@5.25
Small White 6.25
Black eyes 3.50
Garvanzas 4.00
Lentils California 6.00
Lentils German 8.00
Bayou 3.50

Nuts.

Almonds IXL per lb 15
Ne Plus Uutra 14
Pecans polished .....15@17
Peanuts Virginia .....6½@7
Peanuts California 5
Peanuts Jap .....6@6½
Walnuts No 1 .....11@12
Walnuts No. 2 .....9@10
Chestnuts .....13@14

Honey.

Wholesale quotations:

Extracted water white 8
Extracted Light Amber .....6½@7
Comb W W 16
Comb white 15
Beeswax 25

Hay.

No old hay is being received and wheat and barley are selling f. o. b. cars about as quoted below.

Prices paid to producers f. o. b. Los Angeles are as follows:

New barley hay .....13.50@15.00
New alfalfa .....11.50@15.50

Grains.

Wholesale selling price f. o. b., Los Angeles:

Wheat new per ctl .....2.30@2.35
Kaffir corn 1.85
Corn Eastern bulk 1.80
Egyptain corn 1.85
White oats 2.25
Seed Rye 2.00

Feed Stuff.

Wholesale selling price f. o. b., Los Angeles:

Cracked corn 1.85
Shorts 1.95
Bran 1.70
Cocoanut cake 1.35
Cocoanut meal 1.85
Cottonseed meal 1.25
Oil cake meal 2.50
Feed meal 1.90
Cracked wheat 2.50
Rolled Barley 1.70

San Francisco Markets

SAN FRANCISCO, May 25, 1909.

Butter.

Butter continues firm though earlier in the week it declined slightly. It now stands exactly as last quoted.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras per lb 26
California firsts 25½
California seconds 24

Cheese.

California flats fy 13
Firsts 12
Seconds 11½
Cal Young America fy 16
Firsts 14½
Young American Oregon fy 16½
Eastern N. Y. Cheddars fy 17½
Oregon flat fy 16

Eggs and Poultry.

Eggs have sagged during the week though at this writing a firmer tone prevails and a quotation of a half cent over a couple of days ago is maintained. But all told 2½ cents is knocked off of last week's quotations on extras.

Official quotations of the S. F. Wholesale Dairy & Produce Ex. are:

Fresh ranch extras 25
Eggs first per doz 24
Eggs second 23½
Eggs thirds 23
Hens per doz .....5.00@7.00
Hens extra .....8.00@10.00
Young roosters .....9.00@10.00
Old Roosters .....4.00@5.00
Broilers per doz .....2.50@4.50
Fryers per doz .....6.50@7.50
Geese per pair .....2.00@2.50
Goslings per pair .....1.75@2.00
Ducks young .....6.00@8.00
Live Turkeys .....17@19
Dressed Turkeys .....18@22
Pigeons young .....1.75@2.00

Live Stock.

San Francisco prices gross weight:

Steers No 1 .....4½@4¾
Do second quality .....4@4½
No 1 cows and heifers 3¾
Second quality .....3¼@3½
Hogs 100 to 140 .....7@7¼
Hogs 140 to 250 .....7¼@7½
Rough heavy .....4½@5
Calves per lb .....4@5¼
Lambs yearlings 5
Milk lambs 5½
Wethers No 1 unshorn 4¾
Ewes No 1 4

Potatoes.

Wholesale market quotations:

River white fy sacks .....1.95@2.10
Early Rose .....1.85@2.00
River Burbanks .....1.35@1.50
Salinas Burbanks .....2.40@2.47½
Sweets per crate .....1.50@2.00
Oregons .....2.40@2.45
New potatoes white .....3@3½
New potatoes red .....3½@4

Vegetables.

Wholesale quotations:

Asparagus per bx .....2.00@2.50
Bell peppers per lb 25
Brussels sprouts per lb .....3@5
Cabbage per box .....2.00@2.25
Cauliflower doz .....75@1.00
Carrots per sk .....65@75
Celery per doz .....40@60
Cucumbers per doz .....75@1.00
Chili peppers per lb .....15@17½
Egg plant per lb .....1.00@1.50
Green peas per sk .....75@1.25
Mushrooms per lb .....12½@25
Squash per box .....65@75
Onions green per box .....40@50
Rhubarb per box for bay .....85@1.00
String beans .....5@6
Tomatoes box Mexicans 1.50
Wax Beans .....10@12½
Garlic new .....5@8

Onions.

Onions Oregons .....2.35@2.40
Australian Brown 4.00
Texas Bermudas per crate ...1.25@1.35
New green per box 65
New red per sk .....1.00@1.10
Silverskin .....85@1.00

Citrus Fruits.

Navels fy .....1.15@2.25
Choice .....1.75@2.25
Tangerines per crate .....75@1.00
Mandarins .....75@1.00
Grapefruit seedless .....2.00@3.25
Grapefruit seedlings .....1.00@1.75
Lemons ch .....1.75@2.50
Lemons fy .....2.75@3.25
Limes .....4.50@5.00
Limes Cal sm box .....1.00@1.25

Fresh Fruits.

Apricots box .....75@1.50
Apples new green .....40@50
Bellflowers .....1.00@1.35
Bellflowers No 2 .....60@1.00
Cherries purple Guigne .....60@75
Cherries Black Tartarian .....50@75
Cherries loose black per lb .....4@7
do white .....2@3
Cherries Royal Anne .....75@80
Cherries White .....30@45
Newton Pippins .....1.35@1.50
Ben Davis .....1.25@1.65
Figs blk box .....2.00@2.50
Winter Nellis .....1.25@1.65
Other Kinds .....75@1.00
Strawberries per crate .....60@75
Malindas per chest .....4.00@5.00
Longworth per chest .....6.00@7.00
Pineapples per doz .....3.00@5.00
Raspberries per crate .....1.25@1.50
Gooseberries per drawer .....40@60
Logans .....60@75
Blackberries dbl crate .....1.50@2.00
Currants .....65@90

Dried Fruits.

Prunes 4-size basis 2½
Santa Clara 2¾
½c premium for larger sizes

Apricots per lb; Choice 8½; fancy 10½@11.
Peaches—Choice ..4¾; fancy ..6@7½
Apples evap .....5@7½
Pears .....5@8½
Figs .....2½@4
Nectarines .....5@6
Pitted Plums .....7@8

RAISINS—1908 crop, f. o. b.: Fancy Seeded No. 16, cartons, 4½c; do, No. 12, 3¾c; do, Choice, No. 16, 4c; do, Choice, No. 12, 3⅜c. 50-lb. bxs: Loose Muscatels, Standard, 4-crown, 4c; 3-crown, 3c; 2-crown 2½c; Seedless Thompson, unbleached, 3½c; Seedless Sultanas, unbleached. 2¾c; Dried Grapes, 2c; London Layers, clusters, 6-crown, $3; 2-crown, 90c; 3-crown, $1; 4-crown, $1.50; 5-crown, $2.50.

Nuts.

Walnuts S S No 1 .....9½
Walnuts No 2 6
No 1 hard shell 8½
No 2 hard shell 6
Ne Plus Ultra 10½
Almonds Nonp 11½
Almonds IXL .....10½@11
Languedoc 9
Pecans .....15@17
Chestnuts .....7@9

Beans Dried.

Limas .....4.10@4.20
Pink 3.25
Small white .....5.90@6.00
Large white .....4.90@5.00
Black eyes .....3.40@3.50
Red kidneys .....3.85@4.00
Garvanzas .....2.75@3.00
Bayo .....5.35@5.50
Horse beans 2.00
Cranberry .....4.85@5.00

Hops.

Hops 1908 crop .....4@8½
Old crop .....3@4½
1909 crop contracted for at .....9@11

Honey.

White comb .....11@12½
Light Amber .....9@10
Extracted W W .....7@8
Extacted light amber .....6@7
Beeswax No 1 per lb .....28@30
Beeswax No 2 per lb .....23@25

Hay.

Scott & Magner say: We now find that a large proportion of the daily arrivals consists of the new crop hay, and as the hay is arriving in good condition and shows of good quality, it is being used satisfactorily by the consumers here.

However, as this period of the season is usually dull, it is not an exception to find this dull condition prevailing here in the hay trade at this time, as it is just between the old crop and the new, and at the time when all consumers are buying sparingly.

With the present slack demand and the increased shipment of hay during the last two weeks, our market has been adversely affected, has declined in prices, and at the present writing is weak at our quotations.

The shipments of old crop hay have continued as actively as conditions would permit, as the holders of old crop are very desirous of getting their stocks on hand reduced as quickly as possible, so as to take full advantage of the prevailing high prices of old crop hay.

There has practically been no alfalfa hay coming in, as the demand here at this time for this article is exceedingly light. Prices on alfalfa hay are practically nominal.

We quote the general range of prices on today's hay market as follows, viz:

Choice wheat hay .....22.00@24.00
No. 1 wheat or wheat & oat 20.00@21.00
No 2 wheat or wheat & oat 17.00@19.00
Choice tame oat .....19.00@21.00
Other tame oat .....17.50@19.00
New crop wild .....13.00@17.00
Wild oat .....15.00@19.00
Stock hay .....7.00@10.00
Alaflfa .....13.00@17.00
Straw .....60@85

Grains.

Wheat No 1 .....2.10@2.15
Barley .....1.52½@1.60
Barley common to fair .....1.45@1.55
Oats white .....2.15@2.25
Oats gray .....2.05@2.15
Rye new crop .....1.80@1.85
Corn Egyptain .....1.60@1.65
Corn Cal sm round .....1.80@1.85
Alfalfa seed, Cal .....16@18
Mustard yellow .....5¾@6
Mustard brown .....3¾@4½
Millet .....2½@3
Broom corn seed per ton 23.50

Feed Stuff.

Bran per ton .....29.00@30.00
Feed cornmeal per ton ....37.00@38.00
Cracked corn per ton .....38.00@39.00
Rolled barley per ton ....32.00@33.00
Rolled oats per ton .....42.00@43.00
Oil cake meal per ton .....38.50@40.00
Cocoanut cake per ton .....25.00@26.00
Middlings .....33.00@35.00
Mixed feed per ton .....28.00@32.50
Shorts .....31.00@32.50

Citrus Market

LOS ANGELES, May 26, 1909.

If it were not for the excess of large size offs, the market conditions on oranges would be fairly good at this

Cream Separators, all sizes, all prices. O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

Try this for a Big Load

The easiest running wagon or dray is the one lubricated with Mica Axle Grease.

Kills friction; stops wear; makes a two-horse rig run with one-horse power.

MICA Axle Grease

contains powdered mica which coats the axle with a non-friction surface—*that's* the *why* of it.

No grease helps as much as Mica Axle Grease.

If you try it, you'll know it.

Ask your dealer.

STANDARD OIL COMPANY
(Incorporated)

Surplus Stock of Palms Field Grown

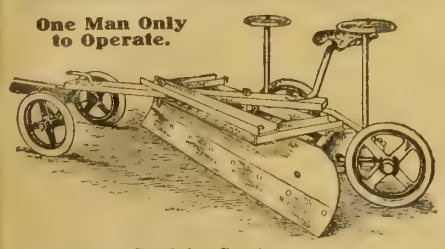
			PER 100
1000	Washingtonia Robusta	2 ft. to 3 ft.	@ $42.50
1000	" "	3 " " 4 "	@ 65.00
500	" "	4 " " 5 "	@ 85.00
600	Chamaerops Excelsa	1½ " " 2 "	@ 25.00
800	" "	2 " " 3 "	@ 30.00
100	Chamaerops Humilis	1½ " " 2 "	@ 50.00
200	Erythea Edulis	2 " " 3 "	@ 85.00
300	" "	3 " " 4 "	@ 100.00
300	" "	4 " " 5 "	@ 120 00
400	Phoenix Reclinata	4 " " 5 "	@ 150.00
100	" "	5 " " 6 "	@ 175.00
1500	Phoenix Canariensis	2 " " 3 "	@ 55.00
2000	" "	3 " " 4 "	@ 80.00
1000	" "	4 " " 5 "	@ 110.00

Net cash prices. Balled and sacked. F. O. B. cars, in car load lots.

PARK NURSERY CO., Pasadena, Cal.

The Simplex Russell Reversible Road Machine

One Man Only to Operate.



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Overlooks San Francisco Bay and City
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600 rooms. Every room has bath

Rates—single room and bath—$2.50, $3.00, $3.50, $4.00, $4.50, $5.00, $7.00, $10.00.
Suites—$10.00, $12.50, $15.00, $20.00 and up.

Management
Palace Hotel Company

time. Good fruit of the more desirable sizes is commanding fairly good prices. Even the off sizes are bringing close to $1.00 f. o. b. Shipments are materially decreasing, for instead of 1300 or 1400 cars per week as were going forward two or three weeks ago and 1100 a week or more ago, the state is now forwarding 700 to 800 cars. Probably by the first of June, the shipments of Valencias will be in full swing, and two weeks from this time will probably see all navels, Mikes, sweets, and all excepting Valencias, gone.

It is unfortunate that many oranges injured by frost are still being forwarded. It cannot be denied that the freeze earlier in the sason did very much more damage than has generally been admitted. This fact, together with the exceedingly large shipments during the past few weeks accounts for the weakness of the orange market.

Lemons are doing exceptionally well at this writing. The only embarassment now is to find a market for the low grade stuff. There are immense quantities of spring cuts which are exceptionally poor keepers and originally poor fruit. This class of fruit is begging for purchasers with poor success. If the warmer weather brightens up the market sufficiently, then the low grade fruit will be picked up at a fair price.

Shipments.

Total shipments to date this season, 26,081 cars of citrus fruits. Of these 22,779 were oranges, and 3,302 were lemons. To same date last year, 22,678 citrus fruit, for which 20,072 were oranges and 2,606 lemons.

NEW YORK, May 24.—Fifty-three cars oranges and three cars lemons sold. Market very steady on good quality fruit. The lemon market is easier and lower. Weather clear and favorable.

NAVELS—	Average.
Orchard Imp National Or Co	3.30
Standard do	2.80
Orchard do	3.10
Standard do	2.70
Old Mission C C Chapman	2.55
Elephant OG Cash Assn	3.20
Plain Ends do	2.50
Cerrito L V W Brown	3.80
Swastika do	3.10
Moga Marino OG Assn	2.35
Violet DM Ex	2.40
Winner SB Ex	1.90
Jameson QC Ex Corona	2.65
Eagle AF Ex	2.30

MEDITERRANEAN SWEETS—Our Own, 2.25; State Seal, 1.85; Hermosa, 1.40; Eagle, 190. BLOODS—Pointer, 2.35; Sweetheart, 2.25; Yankee Doodle, 1.75; Sweetheart (½s), 1.25; La Mesa, 2,30; Niagara, 2.25. NAVELS (halves)—Alto Cresta, 1.35; Cerito, 2.60; Blue Banner, 1.20. BUDDED—Riverside Orange, 1.90. SEEDLINGS—Iris, 2.40; Violet, 2.10; Slover Mtn., 1.85. ST. MICHAELS—Caledonia, 2.40; Old Mission, 2.75; Golden Eagle, 2.60; Champion 2.55; Climax, 2.10. TANGERINES (halves)..L. V. W. Brown, plain boxes 1.30. LEMONS—Independent, fancy, 2.50; do choice, 1.95; Monogram, 1.40; Rialto Girl, fancy, 2.35; do choice, 1.90; Stock Label, 1.00.

PHILADELPHIA, May 24.—Sixteen cars navels, three seedlings, two St. Michaels, one sweet, one grapefruit, seven mixed and two cars lemons sold. Weather clear and cool. The market is unchanged.

NAVELS—	Average.
Pointer ACG Ex Glendora	2.05
Ben Hur RH Ex Red	2.05
Aloha Red OP Co	1.95
Native Sons King Ft Co	1.85
Citrus Belle Ind Ft Co	1.65
Sultan Hanson & Sears	1.45
LaVerne Beauties M Sparks	1.55
Royal Knight RH Ex Red	2.30
Newsboy RH Ex Red	1.75
Pointer ACG Ex Azusa	1.65
SEEDLINGS—	Average.
Gold Coin	1.40
Thistle	1.05
Amethyst	.95
Infantry	.85
Sunset	1.55
Extra choice	1.50
Pointer	1.90
GRAPEFRUIT—	
Royal Knight	2.25
Liberty	2.35
El Dorado	2.05
Liberty seedless	2.80
El Dorado	2.75
ST. MICHAELS (Halves)—	
Stag	1.50
BLOODS (Halves)—	
Stag	1.20
VALENCIAS—	
Planet	2.45
LEMONS—	
Conqueror	1.25
Foxaway	1.75

CLEVELAND, May 24.—Weather cool. The market is improving on navels, unchanged on lemons. Nine cars sold.

NAVELS—	Average.
Captain SA Ex	2.00
Crocus SB Ex Yerkes Spur	2.35
Cosmos do	2.05
Gold Buckle RH Ex E. High	2.40
Foothill Riv Ex Arlington	2.30
Duck SA Ex	1.50
Canna SB Ex Yerkes Spur	2.15
GRAPEFRUIT—	
Canna	2.70
LEMONS—	
Red Skin	1.45
Pico ST Ex	1.20
Yacht SB Ex Rialto	1.20

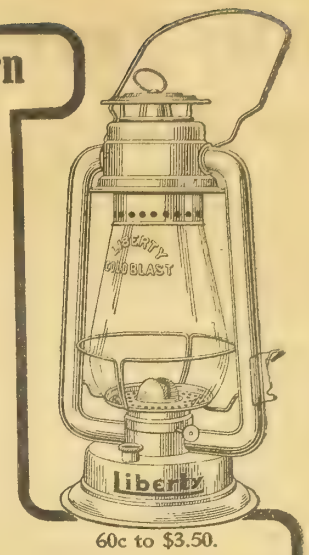
BOSTON, May 24.—Twenty-eight carloads sold. Weather favorable. The market is doing better.

For Mehring Foot-Power Milking Machines see O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

A Special-Value Lantern

Liberty Lanterns are worth more in actual service than any lantern made and don't cost a penny more.

Liberty Lanterns



give the broadest, strongest, whitest light. They won't jar down or jolt out. The bail stands at any angle. A strong coiled spring holds the globe steady. The globe is the thinnest, toughest chimney glass made. Don't be persuaded to buy the "just as good" kinds. Buy the best—Liberty Lanterns.

If not at your dealer's, write us.

60c to $3.50.

SIMMONS HARDWARE COMPANY (Inc.), St. Louis and New York, U. S. A.

NAVELS—	Average.
Quail OK Ex	1.85
Big R SB Ex Rialto	1.95
Pointer ACG Ex Glendora	2.00
Floral SB Ex Colton	1.80
Winner SB Ex Drew Station	1.70
Tunnel SB Ex Fernando	1.75
Quail OK Ex	1.95
Pine Cone SB Ex Highland	2.30
Orchard National O Co	2.90
Kaiser Hanson & Sears	1.90
Kaiser do	2.00
Tiger SB Ex Colton	2.00
Tiger do	1.90
Ostrich SB Ex Drek Station	2.00
Rey ST Ex Fernando	2.15
BLOODS—	
Ostrich SB Ex Drew Station	1.75
Winner	1.65
TANGERINES (Halves)—	
Bear	.85
SWEETS—	
Extra Choice ST Ex	1.95
LEMONS—	
Canna SB Ex Yerkes Spur	3.25
Cosmos	2.40
Coral	1.65
Infantry Cal Cit Union	.75
Palm Tree	1.05
Pet	1.75

PITTSBURG, May 24.—Twenty-four carloads sold. The market is very steady on both oranges and lemons. Weather favorable.

NAVELS—	
Orchard National O Co	2.75
Blue Mtn P & McKevitt	1.75
Flamingo Cal Cit Union	1.95
Coyote OK Ex	1.65
Select SA Ex	1.95
Palomar Loveless Ft Co	2.10
Owl OK Ex	1.55
Colonial SA Ex	1.80
Victor do	1.85
Greyhound do	1.65
Owl OK Ex	1.80
Coyote do	1.80
Swallow do	2.10
Cluster SA Ex	1.75
SEEDLINGS—	
Palomar	1.95
Jasmine	2.05
ST. MICHAELS—	
Pet	2.60
GRAPEFRUIT—	
Log Cabin	2.50
Palomar	2.20
LEMONS—	
Palm Tree AH Ex	1.10
Mission ST Ex Santa Barbara	1.55
Festival	1.50
Bridal Veil Limoneira Co	2.50
White Cross	2.35
Better	1.50

ST. LOUIS, May 24.—Raining. The market is strong on regular sizes. Fourteen carloads sold.

NAVELS—	
Golden Riv Ex Riverside	2.05
Fruita Riv Ex Highland	2.25
Hawk SA Ex	1.45
Greyhound do	2.00
Plian Ends RH Ex E Highland	1.75
Greyhound SA Ex	2.35
Belt RH Ex East Highland	2.25
Dan Patch AF Ex Bloomington	2.00
Fruitella Riv Ex Highland	1.95
Volunteer SA Ex	2.00
Belt RH Ex East Highland	2.35
Select SA Ex	2.10
Blue Jay OK Ex	1.95
Plain Ends RH Ex E Highland	1.80
Orchard National O Co	2.80
SEEDLINGS—	
Havanas	1.60
SWEETS—	
Carmencita ST Ex Fullerton	2.15
Colombo	1.85
LEMONS—	
Bridal Veil Limoneira Co	2.00
White Cross	1.80
Senorita Sparr Ft Co	.90

CINCINNATI, May 24.—Weather warm. Market steady. Four carloads navels, one carload seedlings and three carloads lemons sold.

NAVELS—	Average.
Greyhound SA Ex	2.05
Pepper Riv Ex Riverside	2.15
Owl OK Ex	2.05
Blue Jay do	1.85
Swan Riv Ex Riverside	2.10
SEEDLINGS—	
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42 Dairy Cows and Heifers, 3 Registered Jersey Bulls, 4 Farm Horses

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On the Sterling Milk Co.'s Ranch, 1 mile west of

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Three miles southeast of Compton. Take Santa Ana electric cars to Clearwater, or Long Beach cars to Compton. Teams waiting either place until 9:30 a.m.

Thursday, June 3rd, 10 a.m.

30 head fine dairy cows, mostly Jerseys, a few Holsteins, large rich milkers, in good condition, fresh or coming fresh; all fine dairy and family cows; 4 of above are thoroughbred and registered Jerseys. 2 registered 18-month-old Jersey heifers; 4 registered Jersey bulls; 4 farm horses, weight about 1300 lbs. each; 10 head 18-month-old heifers; 1 brood sow, 5 fine shoats, 3 dozen chickens, 7 ducks, 30 tons hay.

A full line of farm implements and dairy supplies of every description.

Terms: 6 months' time on sums over $50, with note and approved security at 8 per cent, on stock and implements; 3 per cent. discount for cash on time sums.

40-Acre Ranch

We will also sell this improved ranch as a whole or in 10-acre tracts to suit. Same is improved with good dwelling, horse barn, milk barn, testing room, engine-house, chicken and cow corrals, feed racks, steel water tanks, 3 wells, water system, etc. Abundance of water for irrigating the whole ranch. All under cultivation and fine soil for beets, alfalfa, barley and corn. Terms on ranch, one-third cash, balance 1, 2, 3, 4 and 5 years at 6 per cent. interest.

On account of retiring from the business this stock and ranch will positively go to the highest bidders. No limit or reserve.

DON'T MISS THIS GENUINE CLOSING-OUT SALE. FREE LUNCH AT NOON.

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$1.50 a Dozen, $6.00 per 100, $40.00 per 1000 March, April & May, best time to plant Rhubarb.

Berry Plants of All Kinds.

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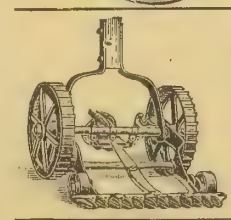

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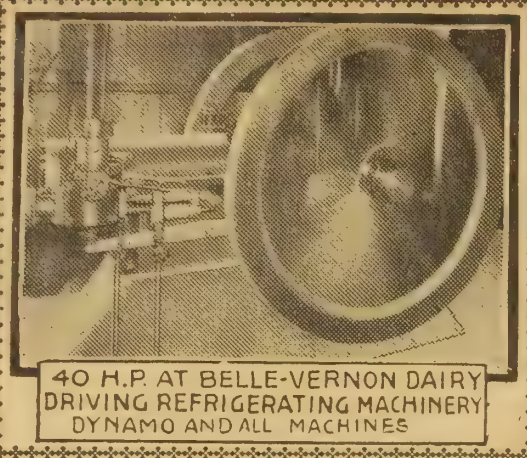

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DYNAMO AND ALL MACHINES

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What Gas Engine Satisfaction Means Unless You Have Used a

WESTERN

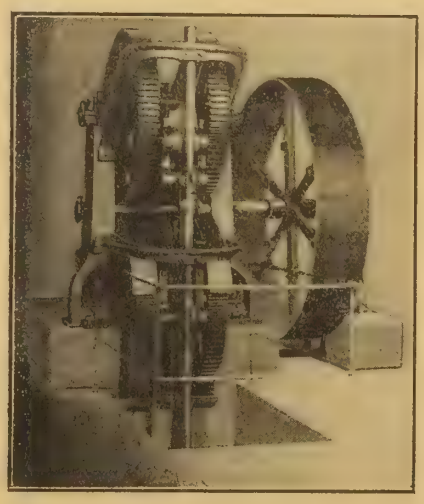
We have no sliding scale of quality. The changes that have been made in the design, material and construction of our engines have all been in one direction—that of producing the highest possible ***efficiency, economy*** and ***endurance,*** for the lowest possible cost.

Ask the users of ***Western*** engines if we have succeeded.

Western Gas Engine Company

Northern Branch: San Francisco, Cal. **Los Angeles, California**

The Smooth Running, Noiseless Pomona Deep Well Pump



It is thirty to fifty per cent more efficient than any centrifugal pump ever made. No high speed bearings to cut out. All breakages and rod troubles eliminated.

This is the only pump you can afford to buy if you consider your own interests. Hundreds of satisfied users testify to this.

Used by the best water companies who know what a good pump is.

Send for a catalog or what is better come to POMONA and let us show you some of these plants in operation.

POMONA MANUFACTURING CO.
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THE Latest Deep Well Turbine Pump

Guaranteed to deliver from 100 gallons per minute upwards, depending on the diameter and capacity of well, from a depth of 50 to 300 feet below the surface. Can be either belt driven or direct connected to electric motor as occasion requires.

Write for Catalogue 46B.

A deep well pump that has no valves or plungers to wear or get out of order, no gears, consequently no noise or breaking of teeth.

Compact, durable, always primed and ready to operate, constant flow, hence increased capacity of well.

This type of pump is fast taking the place of Vertical Steam. Deep well Plunger and Propeller Pumps.

Byron Jackson Iron Works

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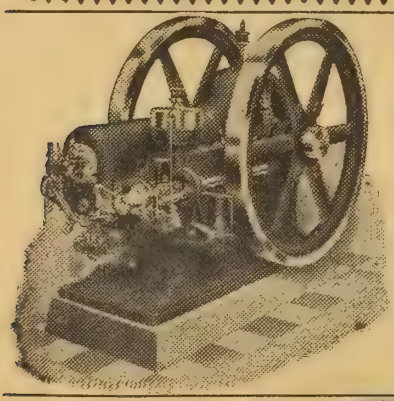

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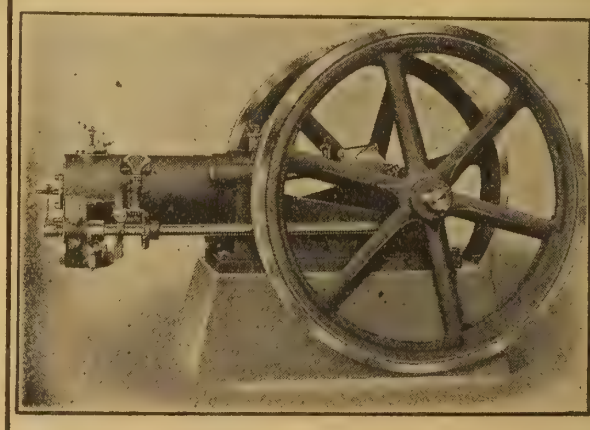

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Stationary, Portable Hoisting and Marine

All sizes from 3 H. P. to 50 H. P. carried in stock. Write for our catalogue "C".

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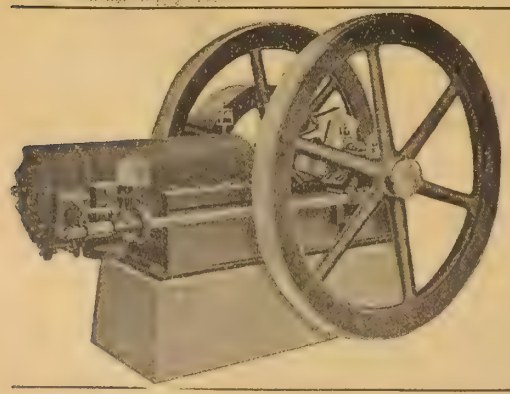

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Heavy, strong and simple in construction

The Right Engine at the Right Price

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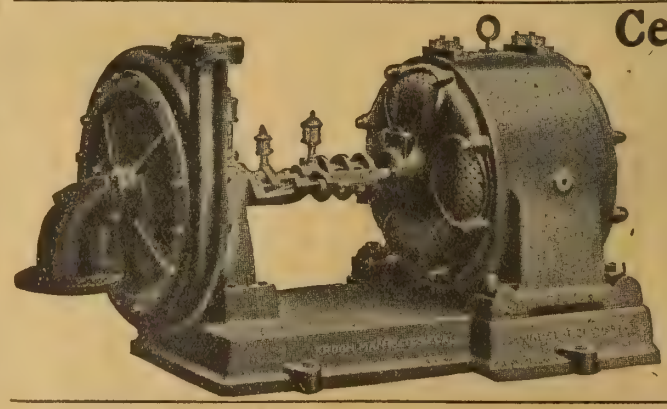

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For high or low heads

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Highest obtainable efficiency

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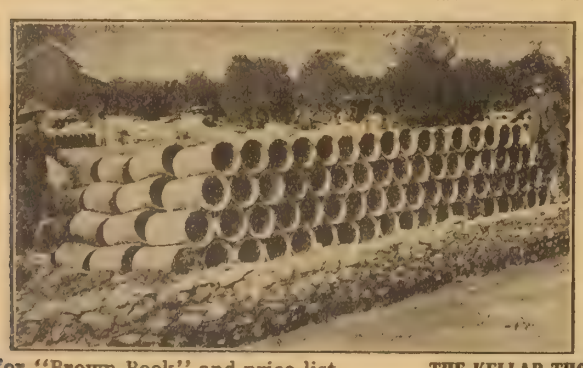


From photograph showing amount of

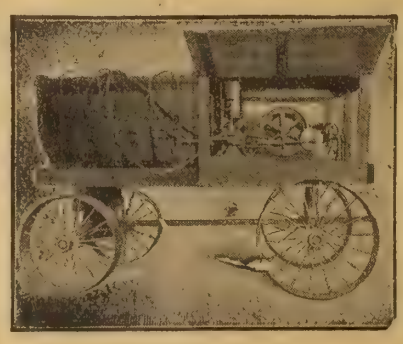
Ten-Inch Pipe

made by four men from 10 bbls. of cement in 9 hours — 280 two-foot joints, or 560 feet. This pipe was made with the

"K T" Moulds

An equal amount can not be made with any other tools in the same period of time. Write for "Brown Book" and price list.

THE KELLAR-THOMASON MFG. CO., Covina, Cal



Olds Complete Power Spraying Outfit

Equipped with their air-cooled engine, which is a great advantage, making it much lighter and easier to operate. Send for circular and Price List 6802 to

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Dealers in all Kinds of Machinery
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California Cultivator

Published Weekly — One Dollar a Year

Los Angeles — June 3, 1909 — San Francisco

Beautiful Orchids at Del Monte

In the Greenhouses at Del Monte, Where a Large Number of Orchids Are Grown. Those in the Photograph Are Natives of Mexico.

Future Citizens of Kerman, California

J. W. Brooks, J. B. Deardorff, J. W. Lamb, J. W. Cook, E. M. D. Smith, C. E. Wells, C. F. Anderson and L. W. Brooks, all of Towner Co., N. D. Together they bought 220 acres of land March 18, and will help to make Kerman the richest colony in California.

Do You Know

That the east is burning up with land hunger? That productive lands are getting scarce and hence higher? Do you know that the people east are just beginning to find out that there are agricultural lands in California and hence that we are on the eve of the greatest emigration movement California has ever experienced.

Do You Know

That as a consequence it behooves all who are landless in California but who hope sometime to enjoy the blessings of a landed home, to get busy and to secure the home before the other fellow gets it, and before prices have advanced to where they are prohibitive? That the easterners who are coming here now are astounded with the agricultural possibilities of "New California?" That they are buying themselves, and then going back home spreading the news of their find, and inducing others to come?

Do You Know

That ere long the man who owns productive land here will discover its value, and will refuse to part with it at several times the amount it now takes to "lift" it, and that when that time comes it will be everlastingly too late for many.

Do You Know

That the value of land depends upon what it will produce per acre? That land on the **Kerman Tract** is today the cheapest land in the United States, value of possible products considered? That this fact is becoming known, and that it is bringing more people here than have ever come to any other similar tract in the same length of time?

Do You Know

That the **Kerman Tract** excels when it comes to water right, quality and lay of soil, natural drainage, location, and in possibilities for fruit and alfalfa growing, dairying and poultry raising? That it is unsurpassed, if equalled, in the things that go to both home and money making? That it is being populated by the very best quality of people, the cream of the country? That undesirable people are not allowed to buy land here and that those who locate are protected against the scourge which has ruined so many otherwise promising colonies in California? If you do not know these things now

We Are Telling You

And we ask the privilege of further informing you. If you are interested we would like nothing better than the chance to satisfy you upon all these points, either by correspondence or by showing you over the tract. We consider it a pleasure to show interested visitors over the colony, and all comers are accorded courteous and considerate treatment. Our circular explains in detail what is here, and it is free for the asking. Write for it, and do it now. But, what is better, come here and satisfy yourself that the **Kerman Tract** is as represented, and that you are not missing something that cannot be retrieved by not taking advantage of this opportunity now. Either write to

Carnine & Storgaard

General Sales Agents

Kerman, California

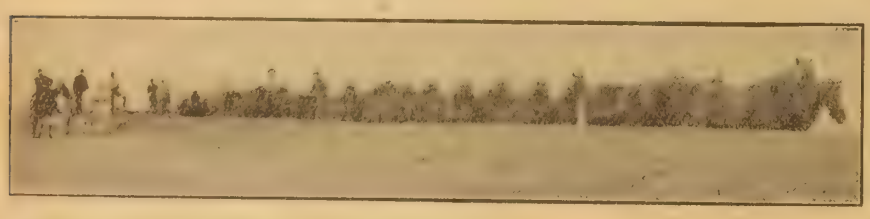
Or call at one of the following offices:

Fresno Irrigated Farms Co., 505 Kohl Building, San Francisco, Cal.

Fresno Irrigated Farms Co., 553 So. Spring St., Los Angeles, Cal.

Dodd & Neu, 520 San Pablo Ave., Oakland, Cal.

H. J. Young, 222 Globe Building, Seattle, Wash.



Making Irrigation Ditches by Machinery on the KERMAN TRACT

On this tract, and in two months, over 6,000 acres of new land was put under water, and into fruit, vines and alfalfa.

U.S. U.S. U.S.

1909 UNITED STATES 1909

U.S.

OUR SIDE OF THE QUESTION

The United States Separator has built up a **reputation** for **efficiency** and **durability** that makes it the **foremost** machine from every standpoint of separator requirements.

We **prize** that **reputation** and in the changes we have made for 1909 every feature that has helped to make the United States famous as **the reliable separator has been** retained.

Every **improvement** that has been made has been made with the object of **building up** and adding to that reputation.

We have added **"working points"** and not fancy "talking points."

YOUR SIDE OF THE QUESTION

You buy a **Cream Separator,** not on account of some "fancy talking points," but because it will enable you to handle your dairy product **more easily** and with **greater profit.**

A machine that will handle more milk. That will skim it more thoroughly. That will lose least in bowl flushing and that can be kept clean and sanitary with the least trouble.

These are **your** requirements, and a trial will **convince you** that the **latest model** U. S. embodies **all** of these **essential** features, to a **greater extent** than has ever before been reached in Separator construction.

U.S.

BUILT FOR EFFICIENCY AND DURABILITY FOR DAIRYMEN WHO KNOW AND DEMAND THE BEST

Send for Catalogue 20 Free

A Postal Will Bring It

U.S.

Vermont Farm Machine Co., Bellows Falls, Vermont

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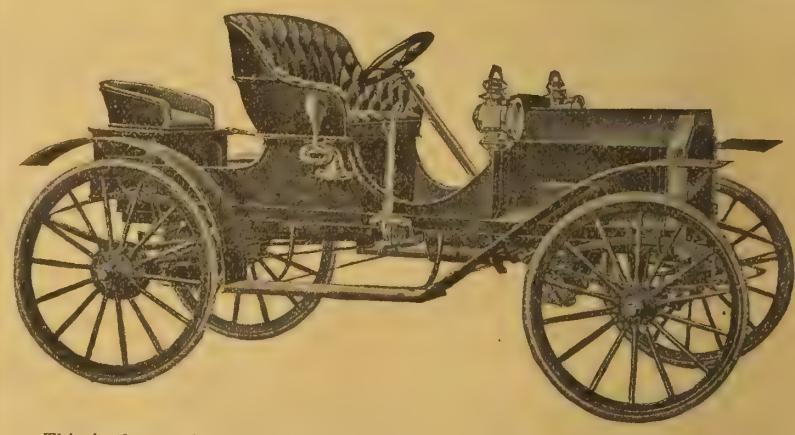
Prompt Delivery Assured California Customers from Stockton warehouse. No delays. Address all letters to Bellows Falls, Vt.

For Service Comfort and Economy

The Westcott wins

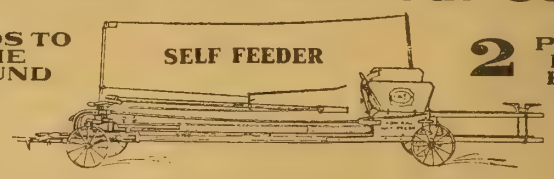


This is the car for the busy professional or business man, suburban resident or commercial traveler. It is so easy to run, so comfortable to ride in, so elegant in design, so practical, simple and durable, that you ought to know more about it. Address

Newell Mathews Co. Los Angeles and Market Sts. Los Angeles, California

An Admiral Without Cost

3 FEEDS TO THE ROUND — SELF FEEDER — **2** PROFITS IN HAY BALING



Ask for circular showing how the press will pay for itself the first season.
If you want a press, write or call on us and get our prices and terms.
For references as to what the Admiral is, "Ask anyone who has one."

$250—New Century Hay Press Specially built Season of 1909. **—$250**

All kinds of Wagons, Buggies, Implements and Tools. Catalogues upon request.

CAPITO CARRIAGE CO. **Los Angeles, Cal.**

FREE TRIP TO SEE THIS HAY PRESS AT WORK

LOS ANGELES AND RETURN AT OUR EXPENSE

WE PAY YOU TO INSPECT THESE HAY PRESSES.

Instead of paying a salesman's fare to show you a small model of a hay press, we will pay your fare to Los Angeles and return, not exceeding $15.00, to examine our California Special New Century, full circle, all steel, self feed Hay Press and all others on sale there. It makes no difference which hay press you buy, we pay your railroad fare just the same.

When you see for yourself how this machine has been built expressly for heavy baling on the coast, how strong it is, how easy it is on horses, what smooth bales it turns out, you will understand why we make such an offer. It has 7-in step-over, pull power, high baling chamber, positive plunger rebound; it stands up to its work, no taking off of wheels. Has record of 30 tons per day. We will ship you one to try. If you don't want it we will pay freight both ways. Write now.

ARNOTT & CO., 118 South Los Angeles St., LOS ANGELES, CALIF.

California Cultivator

Vol. XXXII—No. 22 Los Angeles, California, Thursday, June 3, 1909 Subscripiion $1 a Year

The Possibilities of Plant Improvement

By G. W. SHAW, Associate Professor of Experimental Agronomy and Agricultural Technology, University of California

This article written by Prof Shaw and read by him at the last State Farmers Institute held at the State Farm at Davis gives a vivid idea of the wealth increase of this State if the importance of seed improvement can only be appreciated. The experiment station will be well worth its cost many times over in fact—if this truth can be impressed on farmers by the experiments of the station and the setting forth of the facts as are here done by Prof. Shaw.—Ed.

IT IS doubtful if there is any one agricultural problem of greater importance to farmers than the improvement of their general and special plants, whether this be done through the introduction of higher producing varieties or the development of more productive strains from those now being grown, or through improved culture. Vilmorin, the noted French savant, who has done so much for the improvement of the sugar beet, states, that "No limit can be fixed as to the improvement which may be expected from care, thought and selection. The gains of the last dozen years may surely be taken as the forerunners of better things."

The subject is of vital commercial importance from the fact that it costs no more to grow the better sorts of farm crops than the unimproved, while the increased production due to the use of the improved seed results in an increment of profit. It further awakens in the grower more interest in all phases of crop production extending all the way from selection of seed to the marketing of the crop.

The constantly increasing extension of areas devoted to agriculture has led to a constant demand for improved sorts of plants to meet the peculiar condition of soil and climate in each new region. We are coming more and more to realize that all plants are not adapted to all sorts of conditions.

Another very potent reason for this character of investigation is resident in the constantly increasing value of farm lands on which are grown general farm crops of corn, wheat, oats, barley, alfalfa, beans, etc. The increase in the value of the lands has been such that it is urgently necessary to increase the production per acre and improve the quality of these crops in order to secure a greater return for the investment.

With the advance in botany and chemistry in their application to agricultural science and practice, the expert scientific agriculturist today if he does not find at hand plants of the desired characteristics proceeds to develop a plant to suit the conditions. It may take a period of 5, 10 or 20 years to accomplish the particular thing desired, yet how short a time is this when measured against the resulting benefits to mankind.

On account of the very large number of people interested in the production of the general farm crops in any systm of diversified agriculture, which is the only system under which soil fertility can be permanently maintained, the results of such improvement will have a very far reaching effect. The importance of this character of work is fundamental as regards the individual, the state and the Nation, because the production of such crops is the basis of the Nation's prosperity.

Those who have earnestly and intelligently undertaken the improvement of any plant for a period of ten or twenty years are unanimous in their belief that an increase of ten per cent can be expected with absolute certainty within a period of twenty years and that this can be secured at a cost of less than one per cent of the value, and in many cases at even much less. This increase in productiveness is entirely apart from that secured through the adoption of better methods of tillage, and entirely independent of the trial of new varieties from other parts of the world in which there are as great if not greater possibilities than in the improvement by selection alone, and certainly in this direction we may expect to get the earliest return.

Possibility of Securing Results.

For the improvement of already existing types two methods are commonly relied upon.

1. Variation in the plants induced directly or indirectly through environment and

2. Varieties induced by crossing different varieties or species. The former method has given by far the most important economic results, although the latter requires the highest skill of the breeders' art.

But the question comes what evidence have we to offer as to the possibilities of valuable economic results? The answer is that this lies in results which have already been obtained through the medium of independent workers and also a number of the Agricultural Experiment Stations. It is pertinent to the occasion to pass in review a few of these achievements as they have affected both the yield and quality of the product.

Perhaps the most noted of improvement in quality is furnished by the sugar beet which through persistent and continued selection and scientific grooming has been gradually developed to a delicate, high-bred pedigreed root frequently under our favorable climate carrying 20 per cent or more of sugar, this development having been accomplished from a four per cent original basis. A most striking example of the flexibility of living forms of matter when subjected to systematic and persistent selection!

The effect of this achievement has been to change the entire aspect of the world's sugar supply to such an extent that the bulk of this has been shifted from the cane to the beet root until today two-thirds of our sugar is from the beet.

The development of a high starch-content potato by Cimbals, a German, is another marked achievement in the direction of improvement of the carbohydrate ingredients of plants. In this case the yield was raised from 96 cwt. per acre to 224, and the starch content from 15 per cent to 26 per cent, that is, a production of over 58 cwt. of starch per acre. The starch yield per acre was made four times as great—a very important factor in Germany where potatoes for the manufacture of denatured alcohol distilleries, starch factories and other industrial uses are sold on the basis of starch content.

Sea Island Cotton.

Cotton has long been one of the staple crops of this country, but it is only in comparatively recent years that it has received any very systematic attempt at improvement. At the outset the sea-island cotton imported from the West Indies was a perennial unsuited to the duration of the season of the sea islands of South Carolina and Georgia, where it seldom matured fruit. Though the continued selection of seed from early maturing plants, and through better methods of culture this valuable cotton has now been thoroughly adapted to the new environment. Not only is this true, but under this painstaking work the quality and length of fiber has been increased and the proportion of seed to lint decreased.

There might be mentioned cases where a change has been brought about in the odor and color of plants and the development of relatively disease resistant strains. Further the increase of the hardness of the winter wheats has vastly extended the area over which they can now be grown.

* * *

Large Interests At Stake.

The States to which these strains are adapted produce annually more than a half billion dollar's worth of crops. Ten per cent of these is $50,000,000 and the results already secured through the liberal support of the work by the legislature in these states give a basis for the hope that through its continuance these crops can still be made to produce more than ten per cent additional, and that this can be brought about at a cost that is absurdly small as compared even with the increased values produced in a single year.

That the five or six billion dollars worth of plant and animal products annually grown in the United States can be increased ten per cent by breeding, is not seriously doubted by those best able to judge. The addition of ten billion dollars' worth of products every twenty years by re-adjusting the hereditary tendencies of our crops and animals at a mere nominal cost, is as important as the development of electrical methods and appliances, or as the perfection of systems of steel roads and public highways, or as our entire foreign commerce. If, as is believed, our plant and animal forces can have their heredity so improved that $5,000,000,000 is increased 10 per cent at a cost for breeding of only $500,000 one dollar creating $1,000, it is certainly a good business proposition to develop breeding projects rapidly and freely. The evidence shows that this proposition is every year developing into a form that can not be ignored.

* * *

One Dollar Will Earn One Hundred Dollars.

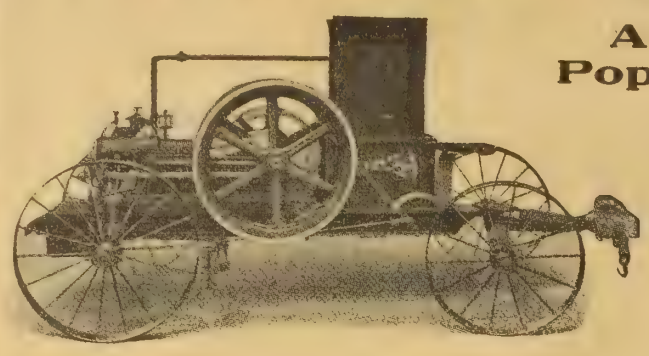
California produces annually field crops which could be improved by breeding which are now worth $75,000,000, and the area is being annually increased. To increase this by breeding to $82,500,000 without other additional expense, it would pay to use $750,000. It will certainly not take $100,000, or say $100 for each dollar of the stated increase. The state is now spending probably $5,000 in plant improvement.

California has long been noted for its liberal hand in dealing with whatever projects she determines to undertake and I feel certain that when she realizes the great economic importance of this field of operation, she will stand second to none in this line of work.

That there is need of it no one will be likely to question when the absurdly low average yield of many of our field crops are mentioned. The return for 1907 shows as follows:

(Continued on Page 644.)

Lambert Portable Engines



Are Popular

2 1-2 to 20 Horse Power

Because Guaranteed to develop 10% in excess of rated H. P. Rigid construction and moderate weight. **Costs Less** than others not as good. Balanced centre crank prevents Vibration—most modern and effective cooling system. **We Believe** an inspection will convince you that the Lambert Portable Engine is far superior to any on the market, and we have made a price to get the business.

Smith-Booth-Usher Company

212-214 South Los Angeles Street Los Angeles, California

WILLIAMS' GOOSE-NECK CULTIVATOR

Patented May 3, 1909.

ARNOTT & CO., General Distributers, 112 So. Los Angeles St., Los Angeles, Cal.

Especially adapted for citrus orchards. Sizes 7 to 14 ft. Lightest draft. Write today

WILLIAMS & SON, Mfrs., Orange, California

The Roessler & Hasslacher Chemical Co.

100 William Street, New York
Works: Perth Amboy, N. J.

CYANIDE guaranteed 98-99% for generating HYDROCYANIC ACID GAS

The only positive eradicator of the SAN JOSE SCALE, RED and BLACK SCALE and other insect pests

FOR SALE BY

F. W. BRAUN - Los Angeles and San Francisco
HAAS BARUCH & CO., " "

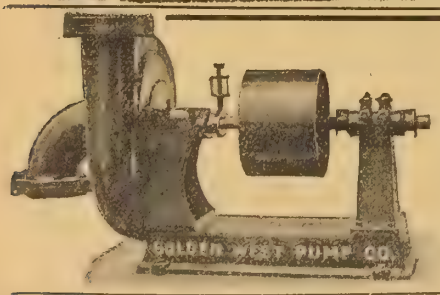
Harrow While You Plow

Make one job out of the two, and get your ground in finest condition by harrowing when the soil is first turned up.

KRAMER'S Rotary Harrow Plow Attachment

enables you to do this. Regular rotary harrow which attaches to any gang or sulky plow. It levels, pulverizes and makes a mulch of the "moist soil" that is not possible after the ground dries and "sets." Draft only slightly heavier—you'll be surprised to see how little. Everybody needs this great time and labor saver. Write for circular No. 84

THE E. M. KRAMER CO., - - PAXTON ILL.
HAWLEY KING & CO., Los Angeles, Southern California Agents.



Golden West Pump Co

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With the Citrus Growers

NITROGEN AND NITRAGIN.

THE chemical element nitrogen takes an essential part in the composition of all plants and is especially abundant in buds, seeds, flowers, growing tips, and, in fact, in all parts rich in the living plant substance, protoplasm. Hence a steady supply of nitrogen must be obtained in the food of plants, although in this respect the plant is far less wasteful than the animal and may use the same nitrogen over and over again once it has been absorbed. The source of the plant's supply of nitrogen is almost solely from the nitrates of calcium, magnesium, potassium, and sodium which are continually being produced in the presence of the requisite bases in every fertile soil during the decomposition of its nitrogenous humus. The nitrogen of this humus is oxidized in the presence of free oxygen by nitrifying bacteria, which are present in all ordinary soils. Ultimately nitric acid is formed, usually with ammonia and nitrous acid as intermediate products, and this nitric acid combines with the alkaline bases present in the soil to form nitrates.

This process is a continuous one, and takes place most rapidly when the soil is warm, moderately moist and well aerated. It stops, or becomes very slow, if the soil is at all acid, completely dry, very cold or in a swampy, badly aerated condition owing to an excess of water.

When a soil dries up in which nitrification has been active, the nitrates may sometimes be so abundant as to form an efflorescence on the surface of the soil. Since all these nitrates are, however, soluble in water, any heavy shower of rain will tend to wash out the excess of nitrates from the soil before the roots have time to absorb them. Hence there is far less danger of loss, and a more permanent effect is produced when the nitrogen needs of the plant are supplied by the bacterial oxidation of humus manures applied to the soil, than when the same amount of nitrogen is directly applied in the form of a dressing of Chilian saltpetre (sodium nitrate).

Although the air, which contains four-fifths by volume of nitrogen, represents an enormous total amount of this element, it is not directly of use except in a few special cases. Ordinary green plants can make no use whatever of the free nitrogen of the air. It enters the plant, and is found dissolved in the sap in every part, but cannot be assimilated or used as food any more than horses can digest the sand which they often swallow when grazing. Every thunderstorm, however, and also certain slow chemical processes of oxidation like that of phosphorus in moist air cause the oxygen and nitrogen of the air to combine, ultimately forming nitric acid, which is washed down by the first shower of rain. In the same way, whenever the air contains ammonia derived from manure heaps, or from decaying animal or vegetable matter, this is washed down by the rain, and oxidized to nitric acid and nitrates in the soil.

The amount of combined nitrogen available for the plant's use, which reaches the soil in this manner, although quite appreciable, is never more than a small fraction of that removed from the soil by drainage and by the crops. Under the most favorable circumstances it does not represent more than a tenth or twelfth of the annual loss of nitrogen from a well-drained, cultivated soil with an average rainfall, and is usually considerably less.

Certain organisms exist, however, in most soils which have the power of assimilating the free nitrogen of the air and ultimately enriching the soil with combined nitrogen available for the plant's use. The most important of these organisms is Clostridium Pasteurianum, an anaerobic bacterium, which is unable to exist in ordinary soils unless supplied with free nitrogen and unless associated with certain other micro-organisms. The latter shield it from the oxygen of the air, which is poisonous to this organism. If all the required conditions were fulfilled, soils containing this bacterium might gain from 20 to 30 pounds of nitrogen (equal 120 to 180 pounds of sodium nitrate) per acre per annum. As a matter of fact, the actual gain due to the presence of this and similar micro-organisms appears usually to be comparatively small, partly because the conditions are rarely the best possible and partly because denitrifying bacteria are usually also present which set free the combined nitrogen of the soil and may in some cases cause a loss instead of a gain to occur. In addition, the conditions which favor the fixation of nitrogen by soil bacteria not dependent upon leguminous plants are, in general, not the most suitable ones for the development of ordinary crops.

It is well known that leguminous plants differ from ordinary ones in having the power of assimilating the free nitrogen of the air, and hence can exist on the poorest and sandiest soils where nitrates are practically absent or very deficient in amount. They have, however, this power only when peculiar tubercles are developed on their roots which contain nitrogen fixing bacteria derived from the soil or originally present on the coats of the seed. These root tubercle bacteria penetrate the young roots and there give rise to tubercular swellings, in which the bacteria are nourished and carry on the assimilation of free nitrogen for the benefit of the plant bearing them. If the root tubercles are not formed, then leguminous plants are as dependent upon supplies of combined nitrogen (nitrates, etc.), as are ordinary plants, so that whenever a leguminous crop, which usually does well on a particular soil in the absence of nitrates, fails to grow well, the first investigation to make is to pull up some of the plants and see whether the failure is due to the absence or deficiency of root nodules. In this connection it must be remembered that the use of nitrates as manures tends to suppress the formation of the root nodules, since these are then less necessary.

If a leguminous crop fails owing to the non-formation of root tubercles, it may succeed if the necessary bacteria are supplied to the soil or young seedlings. The root tubercle bacteria appear all to belong to a single species, Bacillus radiciola, but several varieties grow on different plants and these are not mutually interchangeable. Thus, the variety from the pea will infect the bean, but not clover. The soja plant of Japan usually forms no tubercles in Europe although they

are abundantly produced in Japan, where the appropriate variety of bacterium occurs. In such cases, the bacterium may be supplied to the soil from a plant of the same kind as that which is to be grown, by crushing its root tubercles to a thin paste with cold water and either spraying the diluted mixture over the land or soaking the seeds in it before planting. A single large root tubercle may contain several million bacteria, and only one bacterium is needed to start each fresh root tubercle, so that the root tubercles from a small number of plants would be sufficient to infect an acre of soil or several bushels of seeds. Once added to the soil they appear, however, to die out before long in the absence of an appropriate host plant, so that the direct application to the soil usually involves considerable waste and may be quite ineffective.

Cultures of nitrogen fixing bacteria, usually termed nitragin, (a very unfortunate term well adapted for booming a commercial product, but highly confusing to farmers since "nitragin" is the phonetic spelling of the chemical element, nitrogen, as customarily pronounced, and all farmers now realize the importance of nitrogen in plant nutrition) have been placed upon the market and extensively boomed both for direct application to the soil and to the seeds before planting. These cultures are only effective when they contain the particular variety of bacterium required, and they are no better than the material which can be derived directly from the root nodules. The cultures soon lose their efficacy, and in many cases have been shown to contain none of the required bacteria at all.

In fact, in certain cases, unscrupulous persons have taken advantage of a useful scientific discovery to make money by palming off worthless rubbish upon farmers eager to adopt scientific methods. It cannot be too strongly emphasized that no heavy outlay for a supply of "nitragin" is justified unless the farmer:

Firstly, is unable to grow certain leguminous crops satisfactorily, even in the presence of lime, potash and phosphoric acid in sufficient amount in the soil.

Secondly, finds by direct observation that this is due to the non-formation of root tubercles.

Thirdly, is unable to procure a supply of the same plant-bearing living root tubercles which can be directly used for infecting the seed or soil.

Some of the forms of "nitragin" have been supposed to contain the bacteria which live freely in the soil and enrich it with nitrogen. This is probably a misstatement. In any case, the use of such cultures would not be profitable, because these soil bacteria are usually present in all soils capable of maintaining them, and when added to a soil from which they were originally absent, they usually rapidly tend to disappear again.

Further, the net result of the activity of soil bacteria in rich, well-manured soils is to produce a loss rather than a gain of nitrogen, and hence no advantage is to be expected by the addition of cultures of any kind of bacterium to such soils.

To sum up, in the present condition of our knowledge, the use of "nitragin" in agriculture is not at present to be recommended except under very special conditions. Even then the same results might be obtained by the far better and cheaper methods indicated above,—Journal of Agriculture of Victoria.

EXPERIMENT FARM OF OUR OWN.

While it is a fact that in an unbalanced soil the use of a single element of plant food alone sometimes proves more profitable than a complete fertilizer on the same land, it is also certain that soon the unsupplied elements must become exhausted and a different one (if any one) will become the most profitable to use alone.

Now in order to obtain a practical and intelligent guide in his fertilizing operations would it not be just the thing for each farmer and grower to operate each year on his own land an independent experiment farm on a very small scale, to determine the fertilizer materials to use with most profit the year following?

Instead of making a big and expensive guess every year, to be possibly disappointed in the harvest, it would seem far better to make a number of small guesses at one time and by a comparison of the results, to know just what the land needs and what will render back the largest amount of cash for the smallest outlay.

It appears to the writer that by such a course the uncertainties of guesswork and theoretical conclusions will be largely eliminated.—R. R. Snowden, Los Angeles.

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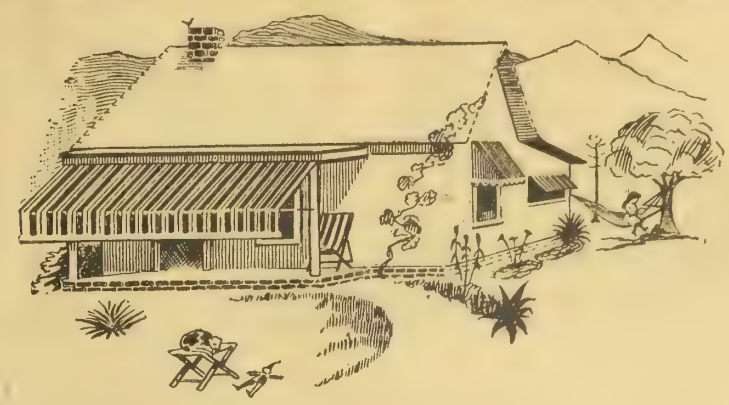

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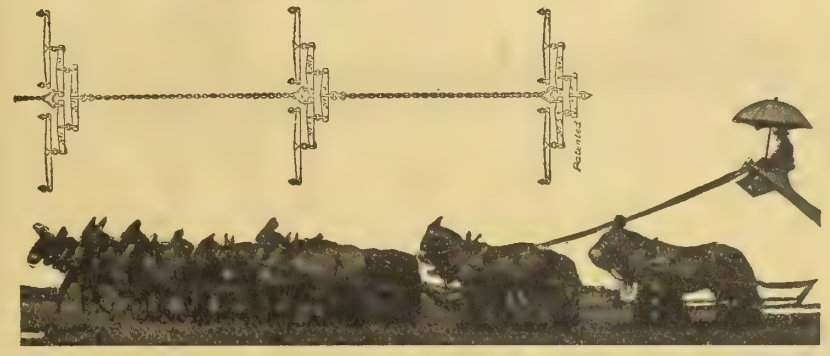

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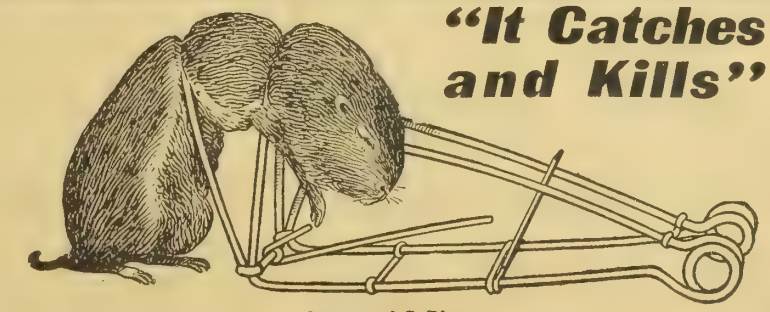

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By J. W. Mills

WALNUT BLIGHT REMEDY.

THE following communication from Dr. William R. Lee, of Los Angeles, treats of a remedy, or rather a preventive of walnut blight. The cleaning up of rubbish and leaves looks reasonable and the ground burning or heating may be effective if followed by all, but whether it is practical may be questioned.

Mr. Lee says:

Desiring to give the utmost publicity to a remedy-process for walnut "blight," thrips, and other tree pests of similar habits, that I suggested a year ago, I submit the details.

In walnut blight, in the fall and early winter, after the nuts have been harvested, the blight germs are found in the old infected nuts, twigs, and leaves; and in the top layers of the soil. By gathering the trash up, with a rake fine enough to bring in the nuts, and burning it, you get a large percentage of the germs.

By following this work with a surface burning, using a weed burning machine, you kill every living thing in the top two to four inches of the soil. Cutting infected small branches back to healthy wood, pays to a point where the cost of the pruning gets too high. As all soils do not heat equally fast, a test should be made on a side strip of each grove.

Care should be taken going over the roots, that it does not burn too deeply. This process sterilizes the top two or three inches of the soil, but the cost of fertilizer to refill it is not prohibitive. The work should be started on the windward side of a grove, to avoid reinfecting cleaned ground.

The best work is done in the fall, just after the nuts are harvested, and before the rains start.

There is a difference of opinion about the life habits of this bacterium in the spring months, but a surface burning in the spring is almost certain to be of value.

If thorough work is done the first and second years, the subsequent treatments will cost very little. In fact the two year's treatment will almost certainly clean the grove, unless it is surrrounded by infected, untreated trees. There are two machines in the market, one costing $125.00 and freight, the other $500.00, one burning gasoline, the other crude oil. Where neighbors can join in standing the expense, the cost is much less.

In the case of thrips, if this insect is as migratory in its habits as experts say it is; anything less than a general treatment, of a whole country side, is certain to fail of success. But there is a time, in the spring months, when most of the insects are just at the surface, or just under the surface of the soil. Then a thorough burning of the soil, with one of these weed burners, will kill a large percentage of them. As there seems to be a tendency in insects to get discouraged when persistently fought, this treatment, combined with any other suggested, will save many orchards. As in the case of "blight," the soil will be sterilized, but can be fertilized again.—William R. Lee, M.D., Los Angeles.

DIGESTIBILITY OF NUTS.

With the exception, perhaps, of certain rich pies and puddings, no food material has the reputation for indigestibility that has been accorded to nuts. Discomfort from them is certainly not uncommon, and when it occurs it seems fair to say is largely due to insufficient mastication and to the fact that nuts are often eaten when not needed, as after a hearty meal or late at night; though it is undoubtedly true that nut protein as ordinarily eaten is not so easily or so completely digested as meat protein. Very likely the concentration of nuts, with but 3 to 5 per cent water, as compared with meats containing from 50 to 70 per cent water, is a contributing cause. If careful consideration were given to this matter and if attention were paid to the proper use of nuts and their correct place in the diet, there would be less unfavorable comment on their digestibility.

The results of investigations carried on with fruit and nut diets at the Californiua Agricultural Experiment Station afford tentative conclusions regarding thoroughness of digestion which should be of value to those who wish to use nuts as a staple article of food rather than as an occasional article of diet. This work has comprised 15 dietary studies and about 100 digestion experiments with elderly men, young men, women and children, of whom some had been vegetarians for years, and some had even limited their diet almost exclusively to fruit and nuts; others had previously lived on the usual mixed diet. The average coefficients of digestibility reported for 28 experiments with two men and one woman on a fruit and nut diet were: Protein 90 per cent; fat, 85 per cent; sugar, starch, etc., 96 per cent; crude fiber, 54 per cent; and ash, 68 per cent, with 86 per cent of the energy available. The corresponding figures for three experiments with the same subjects in which no fruit or nuts were used are: Protein, 94 per cent; fat, 92 per cent; sugar, starch etc., 96 per cent; crude fiber, 49 pe cent, with 88 per cent of the energ available. The latter coefficient agree very closely with those in th average of nearly 500 experiment with different sorts of mixed diet namely: Protein, 92 per cent; fat 95 per cent; and carbohydrates, 9 per cent.

Nuts were the main source of pro tein for the fruitarians, and it wil be noted that this constituent ha practically the same coefficient of di gestibility in the nut and fruit diet a in the other cases cited. The studie with fruitarians have all indicate that nut protein is fairly well assim ilated; and that this is true with th average healthy person is well illus trated by an experiment with a uni versity student, who, though entirel unaccustomed to such fare, gradually changed from an ordinary mixed die to one of fruit and nuts, which he fol lowed for a time without apparen loss of health or strength.

It is somewhat difficult to arrive a definite conclusions regarding the act ual percentage of nut protein digested or assimilated. The experimental data obtained at the California statio show a range of 75 to 82 per cent di gestible protein when fruit and nut were eaten together, but the figure for nut protein is doubtless higher These coefficients were in all prob ability influenced by the fruit protein which has been found to be less di gestible than the nut protein. The di gestibility of protein in 28 experiment with mixed diets, to which were adde fruit and nuts, averaged 90 per cent.

As fruits, with the exception of th avocado and olive, yield only a smal amount of fat, the fat which is con tained in a fruitarian diet must b very largely obtained from the nuts The average coefficients of digestibil ity for this nutrient in 30 experiment with men on a diet of fruit and nut was 86 per cent, and in 28 experiment just referred to it was 85 per cent These figures are about 10 per cen lower than the average coefficient fo digestibility of fats in the ordinary mixed diet. The digestibility of th carbohydrates in nuts, so far as th available data show, is about equal t

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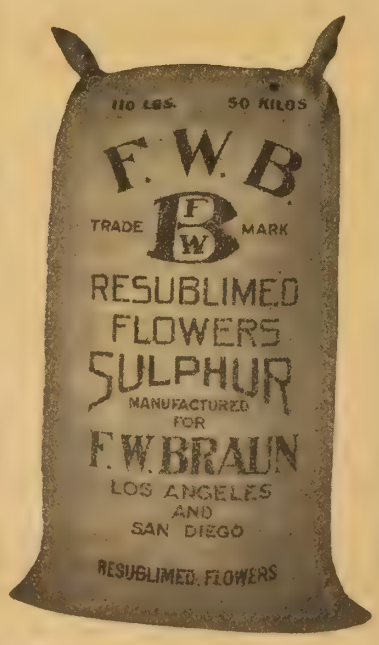

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that of the same ingredients in other foods.

So far as can be ascertained no experiments have been made on the ease or rapidity of digestion of nuts. In the absence of such data it is fair to assume that within reasonable limits the finer the state of subdivision of the food material the easier, the more rapid, and perhaps the more nearly complete will be the digestion or assimilation, presupposing, of course, that the nuts are not eaten in addition to a hearty meal. Too much stress can not be laid on the necessity of thorough mastication of nuts. This is emphasized by the results obtained with one of the subjects at the California station, a man at moderately active work, who ate largely of nuts but did not properly masticate his food. The coefficients of digestibility of the food were far below that for other subjects who chewed their food thoroughly. The experiments with fruit and nut diets in general indicate that nut protein is as easily, even if not quite so completely, digested as protein from bread and milk.

The present discussion refers only to the nuts included in the studies at the California station, viz, the almond, Brazil nut, cocoanut, peanut, pecan, pignolia, and walnut. It is believed that these are typical of the ordinary edible nuts, but further digestion experiments are much needed for the purpose of testing some other nuts.

As regards the work of other investigators, both Memmo and Merrill report digestion experiments with cooked chestnuts. Memmo's subject was a farm laborer, 53 years old, working eight hours a day. The experiment lasted four days. During the first two the food consisted exclusively of chestnut products. This was modified during the last two days by the addition of herring and cheese. In this experiment 75 per cent of the protein, 87 per cent of the fat, 97 per cent of the total carbohydrates, and 83 per cent of the ash were assimilated. The last figure is exceptionally high; the others correspond to those reported for the California experiments with men on a fruit and nut diet.

The subjects of Merrill's experiments were two men aged 23 and 34 years, respectively. A mixed diet was used. Each subject consumed daily 300 grams of the cooked chestnut flour, which furnished about 20 per cent of the proteids, 50 per cent of the fat, nearly 50 per cent of the carbohydrates, and not far from 40 per cent of the total fuel value of the food. The average digestion coefficients obtained for chestnuts with the two subjects were protein 56 per cent, fat 63 per cent, and total carbohydrates 98 per cent, while 89 per cent of the energy was available. Memmo also studied a kind of acorn bread eaten in Italy, and found it was fairly well assimilated, though not very palatable. In experiments made by Saiki at Yale University chestnuts were added to the diet to obtain data regarding the raw chestnut starch, and it was found that it was comparatively indigestible. This would suggest that it is desirable to cook chestnuts rather than to use them raw.

From the foreging it would appear that, while it is not possible to determine the exact digestion coefficients for all nuts, enough has been done to indicate their high nutritive value and to show that the human system can assimilate a very large proportion of the nutriment contained in nuts when they are rationally eaten.—Prof. Jaffa of California University in Government Bulletin 332.

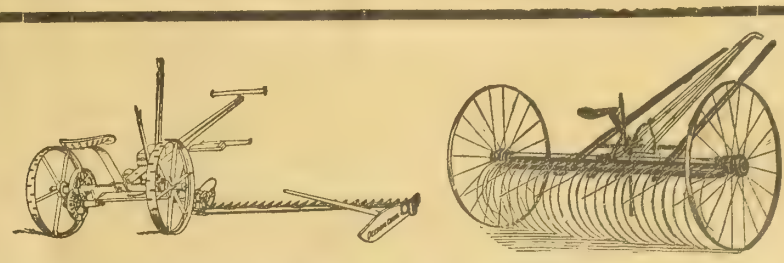
SPRAYING FOR CODLING MOTH.

Spraying just after the blossoms fall fixes the apple trees for a month or even six weeks before the earliest codling moth larvae appear but the poison put into the calyx cups after blossoming time remains there throughout the season and is as effective the day the apple is picked as it was the day it came from the nozzle cup. The final worminess of the fruit will be in proportion to the amount of spray placed in the calyx. When spraying is done with a mist nozzle of the Vermorel type, or with low pressure, or with a stream directed into the air to fall into the blossoms by gravity, it can be safely asserted that the blossoms will not be filled with poison. When the fluid is forcibly shot down as a coarse, driving spray, penetrating into the interior of the blossom, such as is done by spraying from a power machine under 200 pounds pressure we can safely assert that the cavities will be filled. When a mist spray is used fifty per cent of defective apples are wormy at the calyx end. When a high pressure spray is driven through Bordeaux nozzles, the calyx infestation has been reduced to twenty-five per cent. When the nozzles are fitted with a crook so that the spray can be shot down, the infestation at the calyx has been reduced to less than five per cent. When in addition to this, the power is used, so that the uppermost blossoms are filled with poison as well as those in the lower part of the tree, not one apple has yet been found wormy at calyx end.—Denver Field and Farm.

INTERESTING HISTORY.

A bit of history that is as fascinating as a novel and, at the same time, most instructive as to the conditions which have prevailed in the Imperial Valley for the past few years, is given in an article under the title of, "Born in the Desert" written by C. R. Rockwood, engineer in charge of the great Imperial irrigation system. Mr. Rockwood details interesting points from the discovery of Imperial Valley, and the early appreciation on the part of a few of the great possibilities there, and gives in outline the work which accomplished the great results, and also the financial troubles which have followed the great enterprise from its inception. The article covers many pages in a special edition of the Calexico Chronicle.

The company has faced many difficulties in the past, and it seems that it will have to meet more in the future, for ever since the work of controlling the Colorado river after its break of three years ago, the differences between the company and the Southern Pacific are such that even yet no one can say what the results will be, but sure it is, the water which has changed the desert to a most productive land has been secured and improvements made which can never be taken away from the valley.



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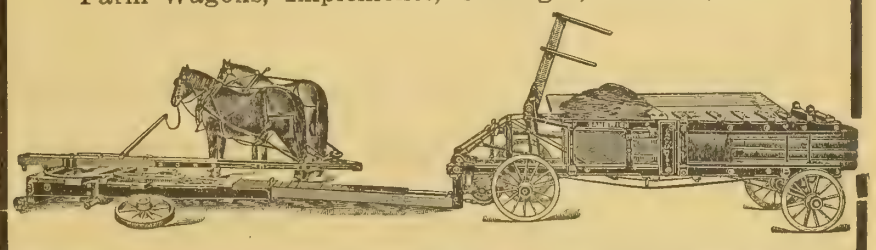

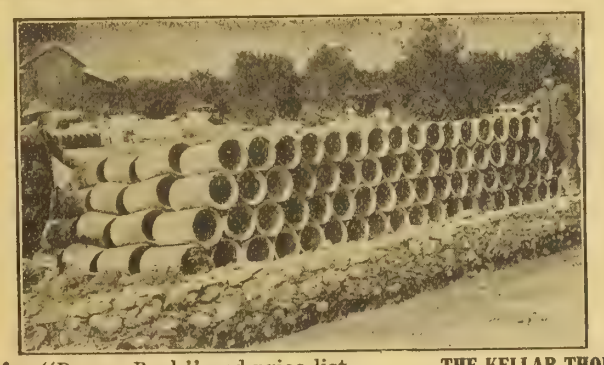

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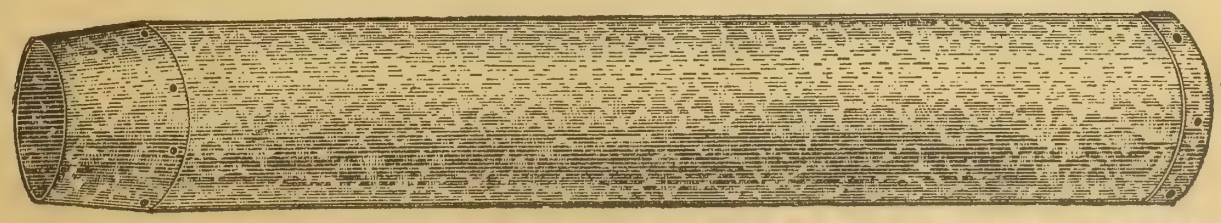

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SAVES WATER, GRADING AND TIME

The **only** way to **Irrigate Alfalfa. Cheaper** than **Flumes.** This is only **one** of our **specialties.** We make **Riveted Water Pipe** in lengths of **ten feet** from **single sheets.** Let us **prove** to you that we make **Pipe** and **Tanks right.** WRITE FOR CATALOGUE.

AMERICAN STEEL PIPE & TANK COMPANY

FORMERLY TALLERDAY MANUFACTURING COMPANY

636-7 Pacific Electric Building **Los Angeles, Cal**

Pictures Against Talk

NO matter how complicated his cream separator, every "bucket bowl" manufacturer claims his machine is simplest and easiest to clean. Even the makers of disk machines—with 40 to 60 pieces inside the bowl—make the same claims. Yet none of these "bucket bowl" fellows dare put pictures of their separator bowl parts into their advertisements—they all realize that pictures would make their claims ridiculous.

One pan contains the single little piece used in Sharples Dairy Tubular bowls. The other contains nothing but disks from a single "bucket bowl." Which is simple and easy to clean?

The Sharples Dairy Tubular Cream Separator is, without exception, the **only** simple, sanitary, easy to clean separator made. We put pictures against "bucket bowl" talk. We frequently show you pictures of the light, simple Dairy Tubular Bowl and of heavy, complicated "bucket bowls." Compare them. They tell the whole story. It will take you less than thirty seconds to put "bucket bowl" claims where they belong.

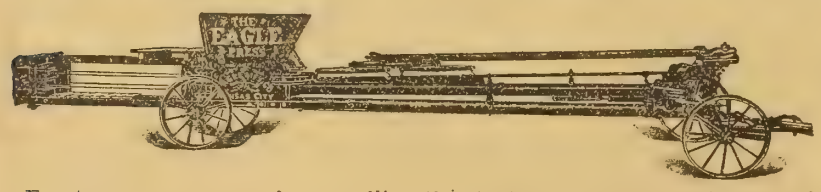
The self styled "original maker of disk machines" is trying to maintain sales by patent infringement suits against equally cheap machines, that have been made for several years with disks like his. If you want to avoid work, expense and dissatisfaction, get a Sharples Dairy Tubular. Made in the world's biggest and best separator factory. Branch factories in Canada and Germany. Sales greater than most, if not all, "bucket bowl" separators combined. Write for catalog. No. 260

TRADE Sharples MARK 29 Yrs

The Sharples Separator Co.

Toronto, Can. West Chester, Penna. Portland, Ore. Winnipeg, Can. Chicago, Ills. San Francisco, Cal.

Hay Presses



Fourteen years ago we began selling the **Eagle Hay Press.** During this time we have sold over 600 of these presses, and as near as we can learn there is not a second hand Eagle Press for sale today. This, we believe, is the best hay press record of any make sold on the coast. The press, as made today, is, without a doubt, the strongest, best and longest lived press on the market. The question is: Will it pay you to experiment when you know that you can get a tried, and not found wanting, press.

A word in favor of the **Columbia Ann Arbor Belt Power Hay Press:** Three years ago we started to sell these power presses. We now have in the field, and orders written up which will go into the field within the next ten days, 34 of these presses. Last year one of our 17 x 22 steel frame power presses bailed 3800 tons of hay, and averaged a little over 53 tons per day. This is a record that we can assure you no other press has ever made in this territory, or anything near it. If you are a friend to yourself you will thoroughly investigate the power hay presses before placing your order for a press with anyone. We court the closest investigation, as we have the conclusive evidence that we have what you are seeking. You will find us at 110-112 North Los Angeles St.

L. M. Davenport Co.

Tanks Tanks

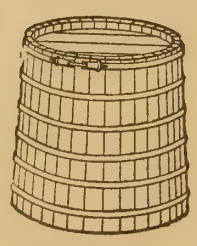
WINDELER'S PLANING MILL AND COOPERAGE

GEO. WINDELER, Prop

Water Tanks, Wine Tanks made from carefully selected stock by careful and experienced workmen. "Tanks that are well made last a long time." It will pay you to get my prices before buying.

Geo. Windeler

Wine Tank 144-154 Berry St. San Francisco, Cal. *Water Tank*



Sugar-Beet-Pulp and Molasses

On sale at $1.50 per ton from silo. In use for more than a hundred years, it is conceded to be the ***cheapest*** and ***best*** dairy feed known. Also Molasses equal to corn, pound for pound, $1.50 per barrel.

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We Have For Sale a Number of Registered Young Bulls and Heifers **$100**

All our stock comes from the celebrated herd formerly owned by the Pierce Land and Stock Co., the premium herd of Holstein Friesians in California. Oakwoods Stock Farm Co., Lathrop, Cal

Rhoades & Rhoades

Expert Live Stock AUCTIONEERS

Sales conducted in all parts of California and adjoining States. Write for dates and terms Twenty-five Years' experience.

830-32 South Main St., Los Angeles

Live Stock and Dairy

By Mrs. Minna E. Sherman

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

SPRING CLEANING.

THE barns and stables should be clean by this time of the year, with whitewash on fences and on the outbuildings, giving them a clean, cool look. The Spanish people, with the lime brush in constant use, make even old shacks look neat. The old stumps and pieces of logs that cannot be readily handled for firewood will burn if they are set on fire while the Spring winds blow. The attempt at a State law to enforce the removal of manure at least every other day from the cow barns was good in more ways than in actually removing the odor; it did away with the fly. The farmers around the large cities of the East are complaining that the available fertilizer is being largely cut off from the town stables by the use of coal oil on the manure piles. It is odd how every improvement that comes into life strikes some one financially on the by-products. The breakfast food men have raised the prices of the former wastes of the mills until the cow feeders find the cows in need of the meals at living prices. This alone should bring the price of milk much higher. Now each year comes the added expense for tuberculin testing, if the owner is fortunate enough to have none of his heavy producing cows condemned.

Clean Barnyards.

The impossible expense of paving a barnyard makes it necessary to be careful to have it well sanded. Every day the manure hauler should take up the droppings carefully from the ground and load them on to his wagons. The ground should receive a cating of fresh earth frequently. This expense is met by the increased value of the manure hauled out, for the urine is available at once as a fertilizer. The sand is taken up a little at a time and goes out with the manure and gypsum to the fields. The manure is spread out lightly over the ground and the sunlight soon purifies the mass. The flies are destroyed and no more breeding takes place as soon as the moisture is dried up. It seems as if most of the troubles of a farm come after all from lack of system and lack of money. I was reading of the farming of the New York millionaire, written, of course, by a newspaper man without farm experience. He spoke with contempt of the ordinary farmer not making money at farming while these millionaires could make farms pay. It was the old story over again that money makes the mare go. These rich men could buy the best of stock and then buy for cash the best of feed for them. Then there was money in it, plenty of money. There is nothing that will breed money as fast as money! I have farmed with money and I have farmed on credit, and I know the interest paid the bank is only a fraction as compared to the losses sustained by not being able to buy for cash, and at the time of the lowest prices, the necessary things for the ranch.

Flies.

The intense disgust that we have for flies in our food is well founded in the mischief they play with the health. These natural instincts are often made the subject of jests, but nature puts them there. Children are considered as untrained little savages when they shrink from the hump-backed or club-footed child in the school. Yet nature wishes to wipe out deformity and puts the instinct into the human heart to prevent the increase by marriage with the unfortunate, ill-formed person. The children have to be taught "to be sorry for deformity of all sorts." Flies fortunately, as far as we know, have no feeling to be considered and may be destroyed, for even the humane society does not protect them. Flies breed in the cesspool and in the manure piles, therefore flies are filthy. They have most interesting little feet that carry in them germs, microbes or bacteria by the hundreds. They like our food and light on it, often using it as a mat to clean off their little feet. We eat it and take our chances of the disease germs starting to work in our systems. In other words, we await the coming of a "mysterious Providence" to carry us to our graves by typhoid fever, diphtheria, tuberculosis and perhaps a score more of diseases. Removing the manure piles promptly and screening the cesspools will decrease the flies. Have covered pails for kitchen wastes, and if no other disposal is possible, burying under six inches of earth will keep the flies from breeding there.

Disinfecting.

The importance of disinfecting the house after any member has had a grippy cold is overlooked in the homes of people otherwise careful. As an instance in point, a family last March had a series of colds running through a number of days, attacking father, mother and three children. The cases were not severe and after two weeks all were well. Suddenly a two-year-old child had a convulsion, then a high fever beginning on Friday. By Saturday the doctor said cerebro-spinal meningitis and applied the serum cure. The child not improving, the spinal fluid was drawn and the micrococcus was discovered to be that of pneumonia and not the usual one of cerebro-spinal meningitis. The serum was not curative for this organism, and the little child died on Sunday. The grippy colds in the family were probably the cause and, the child having been previously weakened by the first attack, became reinfected with the germ and died.

Formaldehyde.

After every sickness this should be used to disinfect, as well as twice a year to keep the house sterile. The fumes will reach where the soap and water cannot go. Buy a pint of 40% solution of formaldehyde and half a pint permanganate of potassium. After stopping the cracks of the doors with cotton, open wide all closets and spread out the clothing to the fumes, for it will not discolor or destroy the most delicate fabrics. Put into the room a pail holding two gallons of

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

Cream Separators, all sizes, all prices. O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

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Cream Separators — Milk Cans
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Creamery and Dairy Supplies and Machinery of all Styles and Sizes
Send List of Goods Wanted and we will Quote Prices

O. J. Weber Co.
225-227-229 E. Sixth St.
Los Angeles, Cal.

You Can't Cut Out
A BOG SPAVIN, PUFF or THOROUGHPIN, but
ABSORBINE

will clean them off permanently, and you work the horse same time. **Does not blister** or remove the hair. Will tell you more if you write. $2.00 per bottle at d'lers or deliv'd. **Book 4D free.**
ABSORBINE, JR., for mankind. $1 bottle. Reduces Varicose Veins, Varicocele, Hydrocele, Ruptured Muscles or Ligaments. Enlarged Glands. Allays pain quickly.
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For Sale by Langley & Michaels, San Francisco, Cal.; Woodward, Clark & Co., Portland, Ore.; F. W. Braun Co., Los Angeles, Cal.; Western Wholesale Drug Co., Los Angeles, Cal.; Kirk, Ceary & Co., Sacramento, Cal.; Pacific Drug Co., Seattle, Wash.; Spokane Drug Co., Spokane, Wash.

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FREE A 100-page illustrated book by Dr. S. A. Tuttle. A guide for every emergency. It's as good as being a Veterinary to have this book and
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For external and internal use for the many common horse ailments. Don't experiment. Get Tuttle's and be sure. Write for book.
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Is making the very best strains of blood fresh from the island of Jersey a specialty.
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Hay For Sale. Buy your hay in car lots. Special attention given to supplying alfalfa to dairies.
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John Lynch Breeder of Registered **Shorthorns**
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Berkshires--Shorthorns
My Berkshires took 9 First, 6 Second and 4 Third Prizes and both Gold Medals. 50 Head For Sale.
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Registered A. J. C. C. Jerseys
St. Lambert and Flying Fox Blood. Margery Golden's Fox heads the Herd. Young stock for sale. GUY H. MILLER, Prop., R. 3, Modesto, Cal.

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Thoroughbred Holstein Bulls and Heifers
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High Grade Stock of Best Strains.
Young Stock For Sale
M Bassett Hanford, Cal

Edison Phonographs, Victors, Zonophones
Records and Supplies, $10.00 orders delivered at your nearest railroad station upon receipt of full retail price. Write for catalog.
Peter Bacigalupi & Sons, 941 Market St. San Francisco

water, put in the formaldehyde and then the potash. Go out quickly, shutting the door closely and putting a rug against it. These fumes are irritating to the throat, but not deadly. After twenty-four hours throw the room open and let it air out. On the ranch, in the men's house there are every year a host of friendly insects that the men do not regard as deadly. These can be destroyed in this way and then the walls whitewashed and the floor given a coating of crude oil and gasoline mixed half and half.

This will render them sterile. We often mix in with the crude oil and gasoline dry venetian red or red iron coloring and give the roofs a coating to destroy moss on the shingles.—M. E. Sherman.

THE STABLE.

Barns or stables are usually needed to protect animals against rigor of climate. They should be on well-drained soil, never over manure pits, of simple construction that they may be easily kept clean, well lighted and well ventilated. Animals that are confined in stables should have plenty of room. Avoid placing a large number of animals together, as they do not do so well as when separated in smaller numbers. This is particularly true of swine and chickens. For these animals it is better to use small portable houses that can be moved to new locations, and to keep only a small number in each.

Cement is now used extensively in stable construction. For horse-stable floors it is too slippery and too hard for the horses to stand on when they are kept much of the time in stables. Animals should always have clean, dry floors.

Stables should be cleaned carefully daily, and disinfected thoroughly at least twice during the winter season,

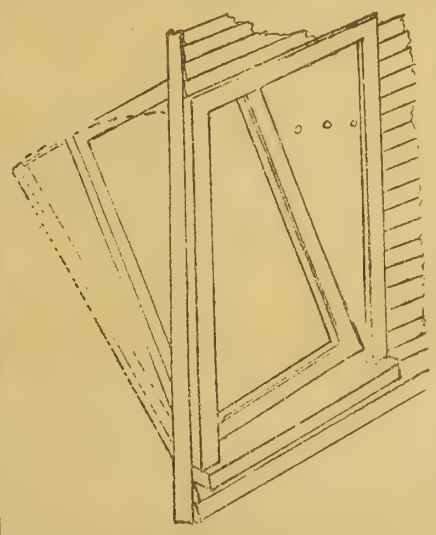

Fig. 127. Sherringham window from outside.

and always after a case of disease among the animals in the stable. For disinfecting, a five per cent. solution of carbolic acid (poisonous) in water is good (one part of acid mixed with twenty parts of water).

Lighting.

Stables should be well lighted and so arranged that the light will not strike the animals directly in the eyes. Light is best admitted from above and behind the animal. An excellent method of admitting light is by means of the Sherringham window shown in Fig. 127. The window is hinged at the bottom and opens inward at the top, and serves for ventilation as well as light. Abundance of light for stables is important hygienically, as direct sunlight destroys many germs, is a good drying agent, and adds a cheerfulness that is greatly to be desired.—From Cyclopedia of American Agriculture, L. H. Bailey, Editor-in-Chief. Reproduced by permission of The Macmillian Company, New York.

For Mehring Foot-Power Milking Machines see O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

Another Infringer Nailed

SHARPLES SEPARATOR CO.

John Deere Plow Co. & Deere & Webber Co.

Sued For Infringement Of DE LAVAL DISC Cream Separator Patents

For the information and caution of all whom it may concern announcement is made that THE DE LAVAL SEPARATOR CO. has brought suit in the UNITED STATES CIRCUIT COURT against the SHARPLES SEPARATOR CO. for infringement of LETTERS PATENT NO. 743,428 by the manufacture and sale of cream separators containing DISC bowl construction covered by the claims of said letters patent.

And that similar suits have been or will be filed as quickly as possible against the JOHN DEERE PLOW CO. and the DEERE & WEBBER CO., who are jobbing such infringing SHARPLES separators to dealers in the Western States.

Attention is pertinently called in this connection to the recent hypocritical advertising tirade of the SHARPLES concern against DISC separators. We have known for some time that they were getting ready to bring out a DISC machine and thus moving up in line with more modern DE LAVAL imitators and would-be competitors. We have but now, however, been able to obtain one of these new DISC machines and the necessary evidence of infringement. The facts speak for themselves and require no further comment.

In addition to the above suits the DE LAVAL COMPANY now has infringement suits pending against the STANDARD, IOWA, PEERLESS and CLEVELAND Separator Companies and the Wm. Galloway Co., all covering the manufacture or sale of INFRINGING DISC SEPARATORS, which infringement applies equally to machines being made by different ones of these manufacturers and sold under their own and various other names by several "mail order" and other concerns as well as to EVERY USER of any such infringing separator bought of ANY of these parties.

To avoid any possible misunderstanding and dispel the pretense of some of these concerns that their machines are similar to the DE LAVAL it is proper that we should add that none of the patents sued upon involves the DE LAVAL "SPLIT-WING" FEEDING DEVICE or its combination with the IMPROVED DISC construction utilized in the up-to-date DE LAVAL separators and that none of the machines is in any degree equal in efficiency, all-around practicability and durability to the IMPROVED DE LAVAL machines of today.

We have for years patiently stood the appropriation by would-be competitors of abandoned, discarded or patent expired DE LAVAL inventions and types of separator construction, but have now determined to put a stop to the more brazen utilization of LIVE patents.

There are STILL OTHER infringers of DE LAVAL patents who will be held accountable in due course.

De Laval Dairy Supply Co.

108 S. Los Angeles St. LOS ANGELES.
42 E. Madison St. CHICAGO.
165-167 Broadway, NEW YORK.

General Offices
101 Drumm Street
San Francisco

107 First St. PORTLAND, ORE.
1016 Western Ave SEATTLE.
Box 1052. VANCOUVER, B. C.

Eucalyptus Seeds

In large or small quantities, 33 kinds to select from. Write for free pamphlet "Eucalyptus Culture." It gives full directions for sowing the seed, raising the plants and planting out into the field, together with descriptions of all the leading species, giving their uses and the localities to which they are adapted. Sample packets 15c each, 2 for 25c, 4 for 50c, 9 for $1.00. Choice Flower, Garden, Tree and Palm Seeds, Roses, Flowering Plants etc. Catalogue mailed free upon application.

Theodore Payne
SEEDSMAN and NURSERYMAN
345 So. Main Street
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Surplus Stock of Palms Field Grown

			PER 100
1000	Washingtonia Robusta	2 ft. to 3 ft.	@ $42.50
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600	Chamaerops Excelsa	1½ " " 2 "	@ 25.00
800	" "	2 " " 3 "	@ 30.00
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300	" "	3 " " 4 "	@ 100.00
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2000	" "	3 " " 4 "	@ 80.00
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Net cash prices. Balled and sacked. F. O. B. cars, in car load lots.

PARK NURSERY CO., Pasadena, Cal.

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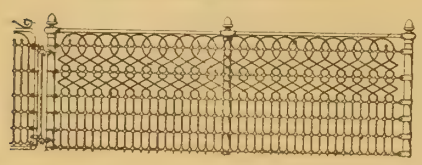

Cheap, durable, easy to erect. Write for Bulletin No. 11, showing designs and net prices of Ornamental Fence and Gates; also Bulletin No. 10 for square and diamond mesh Hog, Field and Poultry Fence. Address

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No. 820 E. Main St., Stockton, Cal.

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Write us for prices.

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CRIMSON WINTER RHUBARB

$1.50 a Dozen, $6.00 per 100, $40.00 per 1000 March, April & May, best time to plant Rhubarb.

Berry Plants of All Kinds.

J. B. Wagner
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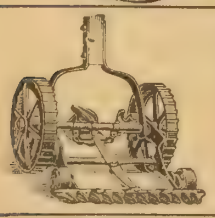
Rhubarb and berry specialist



THE CLIPPER
Will cut tall grass and weeds and do all the trimming along the walks and drives. Your dealer should have them—if he has not drop us a line and we will send circulars and prices.
Clipper Lawn Mower
Dixon, Illinois.

Seeds & Plants

Write for free Catalogue.

Germain Seed & Plant Co.
326 So. Main Street, Los Angeles

The Ornamental Garden

GARDENING—ITS ARTISTIC PHASE.

SHALL true progress be accredited to any pursuit that does not smack of the laws of esthetics? Prune out or neglect the beautiful in life and we have only existence. Cite a man or woman who is progressive and we find one who loves the beauties characteristic of his or her occupation. Every gardener is an artist—a good one or a poor one. The poor gardener works as hard, if not harder, than the one who maps out and does his work with precision. The good gardener improves the gray matter of his brain by thinking ahead of his steps; the poor one looks back upon his random furrows with vague feelings of dissatisfaction—a subtle sense that nothing is done exactly right.

As the color artist knows where to lay on a lighter or deeper hue to bring out the perspective, so the garden artist knows the spots where to insert the various seeds that shall make the whole tract abound with the fulness of fruit and foliage. He knows what scope of fallow ground has been depleted because of his knowledge of nature of the crop which grew upon it the preceding year. He touches every spot with his seed brush in a manner that will make his summer landscape beam with richness and beauty.

The tools of the garden are simple, few and inexpensive. I am not saying this in the especial interest of the manufacturers of garden tools; the prime interest is in the reader who may not find his garden work pleasurable and profitable. No person who has a quarter acre or more of garden can afford to do without a drill for radish, lettuce, beet, onion, spinach. Where it requires several hours each day for several days to plant so large a garden without a drill, it can be done far more satisfactorily with one in a few hours.

Wheel hoes are the co-partners of the garden drill. They are made with single or double wheels to suit the taste of the user. Double wheel hoes straddle the row. There is no other device that can follow so well those tiny dreams of rows reminding one of so many gossamer threads spanning the garden of a dewy morning. It does its work, and that well. It stirs every inch of surface soil, throwing it slightly away from the baby plants, and produces that dust mulch so effectively used for the conservation of moisture in "flat" culture. One can tend almost the whole family garden before breakfast with a wheel hoe, and the result is a pleasure, saying nothing of the valuable method of gardening he is master—master of weeds, master of method, master of the whole situation. Before the cycle of another week he becomes anxious to get into that garden again. Reversing his hoes, he "thrusts" them along leisurely, intercepts the growth of menacing weeds and throws the soil gently toward his plants, which by that time have grown to vigorous youngsters. The uses of the wheel hoe, with its various attachments, will readily occur to any one who is energetic enough to buy one. With the use of the vine guards bunch beans even may be tended and "laid by."

But how are those straight, dream-like rows to be obtained? With a garden line costing ten or fifteen cents. Stakes of any size or length may be had of almost any general store. Two smooth steaks each two and one-half or three feet in length, graduated to two-inch and one-foot scales, attached to the line make a complete laying-off guide. With the drill marker down and the first row sown by the line, four or five more consecutive rows may be drilled before resetting to correct any slight bends that might be developing in the rows. It takes no more time to drill a straight row than it does a crooked one. Straight rows are more easily tended and there will be a space gain sufficient for several additional rows at the finishing, a clear gain. When the drilling for the day is over the line should be wound up and placed in dry quarters to await subsequent service.

With a plow for furrowing and opening middles, two common hoes of different width for emergencies, a trowel or two and some weeders, the gardener's outfit is nearly complete. Twelve to fifteen dollars will buy it—an A 1 investment for the fellow who means to use and take care of it.

It has pleased God to create things symmetrical and beautiful. All life that He has created, to my mind, tends always toward a higher ideal through selection and culture. Aside from the virtue of economy and the execution of methods producing abundant results, there should dwell within the heart of the tiller the satisfaction of having rendered service beautiful.

Turn the soil, mellow it, let in the air,
Stir it and free the dark mold;
Open the furrows with deftness and care,
Lay in the sleep elves of gold;
Fold the earth over their moist, loamy bed,
Firm it down gently and true—
Warm them, oh! Sunshine, wake each sleepy head,
Feed them, oh! Silvery Dew.

Long did they lay on the dark attic shelves,
Back from the dampness and cold,
Housed in the shelter of other sleep elves,
Waiting till Winter grew old;
Open the furrows, make each tiny bed,
Fold the earth over them true—
Warm them, oh! Sunshine, wake each sleepy head,
Feed them, oh! Silvery Dew.
—Farm and Fireside.

BULBS AND HOW TO GROW THEM

The summer flowering bulbs require little attention after planting.

Many of the beautiful dark-colored cannas produce both fine foliage and flowers.

The most brilliant and gorgeous of our summer flowering bulbs are the gladioli, and these should be planted out in the garden at intervals of two weeks from January until the middle of July, thus securing a succession of bloom for the most of the summer.

The tuberose and tigridia are both beautiful summer flowering bulbs that can be planted where they are to grow.

In buying bulbs it is true economy to buy the best, securing them of florists who have them in proper storage.

Their flowering period may be hastened or retarded at will, thus timed for special occasions or for a succession.

The chief reliance for this purpose, either in professional or amateur culture, centers in the various classes of hyacinths and narcissus, and the list is being yearly extended by new varieties.

Bulbs should have a rich, mellow soil of garden loam, sand and fertilizer. This soil should be prepared some time before, as fresh fertilizer causes rapid and unhealthy growth and often decay.

It is important that your bulbs should be planted as soon as possible after they are received, as the moisture which they contain evaporates rapidly, and with it goes much of their vitality.

In planting the bulbs see that both ends of the bulbs are sound. If either end is unsound the bulbs will not grow, as the plants sprout from one end and the roots from the other.—Farm World.

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Small Fruits and Vegetables

FERTILIZING SMALL FRUITS.

Soil management for the fruit crop requires geater care and closer oversight than for other farm crops. Small fruits and especially those of a viney nature are easily thrown out of balance by improper fertlizing.

The possibilities of the small fruit are limitless. No one element has any more to do with the success of this venture than does a thoroughly congenial soil. The elements that go to make a given soil thoroughly adapted to the best use of the fruit area are manifold. In this connection we can eliminate all but those forces that directly affect the congeniality of a soil for the fruit crop and those food elements that must be included. Considerable experience in this line under greatly varied conditions leads me to emphasize the local phase of this subject. We can get many suggestions by studying other successful fruit plant feeders but after all in the final we must work everything over and suit our own peculiar conditions. Even on the small farm a variety of soils makes experimental work in several places vitally essential if we would get the best out of the small fruit area.

That system of soil building is only most profitable when it is so conducted as to give us the greatest amount of net value from a given area. We are just waking up to the possibilities in this line, and only by the occasional masterful results secured by some close student of his own conditions can we get an adequate idea of the limitations of this subject.

In a general way we must have a soil provided with enough humus or vegetable matter to make its mechanical condition perfect but not overdone. The last state is often worse than the first. Closely connected with this vital supply of vegetable elements is a sufficient amount of nitrogen to run the fruit plants to their highest degree of fruiting excellence. To do this requires close observation in all lines to guard against an overgrowth of vines at the expense of fruit buds. Too much nitrogen is likely to throw the fruit plant out of balance and so produce an excessive amount of spindling foliage with a corresponding decrease of fruiting impetus, usually made evident by imperfect crowns, poorly developed fruit stems, and often few and unsatisfactory blossoms.

On most farms where a short rotation is employed with clover as a leader, and considerable humus and nitrogen furnished by the product of the stable, sufficient nitrogen and vegetable matter can be supplied on the farm for the best results.

Thus we have supplied at nominal expense the most expensive element needed in fruit-growing. The other vital elements may still be lacking in sufficient amount to give the fruits enough mineral matter and thoroughly balance and supplement the elements mentioned. In the fruit field we must consider clover and vegetable manure as one-sided elements of fertility likely to furnish too much vine-producing food with comparatively little phosphoric acid and potash. In the case of the soil not having liberal quantities of the latter mentioned elements naturally supplied a liberal dressing of stable manure may be worse than no fertilizing at all. In order to determine the amount of available phosphoric acid in the soil, it is well to experiment in a small way with these feeds to prove the soils. Over a greater part of the clays of the North Central States phosphoric acid can be profitably applied in greater or less quantities depending on the personal equation of the soil in hand. Occasionally heavy applications of this element bring returns greatly out of proportion to its cost. On the lighter sand and gravels often potash will be needed to bring out the full benefit of the other elements present and keep the plants in balance.

To use these elements separately and in combinaton in experimental ways on small plats with ample space left for checks where no minerals are used, every fruitgrower can soon determine for himself, just the limitations of these elements on the different kinds of soil on his farm. A few experiments that this scheme naturally suggests can be developed and carried out by each fruitgrower for a series of years to the marked benefit of the operator. A ready mixed fertilizer, unless it has a formula especially compounded to reach one's local conditions must be regarded as unsuited for this kind of work. A little acid phosphate and potash in some form quite free from the other elements, used in connection with stable manure in varying proportions will give us definite results either for or against increased expenditures in this line.

Another element that vitally affects soil building and crop feeding is the character of the season. With the delicate structure of small fruits it is quite easy to overfertilize in wet seasons and consequently under-feed in dry seasons, hence in any system of experimental fertilizing the character of the season must be taken into consideration. Under intensive methods experience often demonstrates the desirability of making two or more applications of concentrates in a growing season, thus fitting more closely the formula used to the season as well as the soil and crop requirements. Again in a cold, backward spring a very light application of a thoroughly soluble fertilizer may help the starting vines forward to an unexpected degree, by simply furnishing a bit of available fertility at a period when, owing to unfavorable climatic conditions, the plants make very slow progress for the want of available plant food at a critical time when little natural food is in condition to be extracted from the soil.

In experimental fertilizing and especially with the small fruit plant, results obtained are often apparently contradictory and must be noted by the operator with all of the local conditions both past and present thoroughly in mind. Hence, the danger of the average fruit man in becoming side-tracked on some simple condition quite overlooked and so plunge into a course of procedure entailing loss for many years in consequence. —By C. B. Cook, before Wisconsin Horticultural Society.

A little time put in a flower and vegetable garden will likely yield much satisfaction.

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California Cultivator

ESTABLISHED 1889

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Contents

BEAUTIFUL ORCHIDS, Cover.
POSSIBILITIES OF PLANT IMPROVEMENT.—635.
CITRUS.—Nitrogen and Nitragin; Experiment Farm of Our Own, 636, 637.
DECIDUOUS.—Walnut Blight Remedy; Digestibility of Nuts; Spraying for Codling Moth; Interesting History, 638, 639.
LIVE STOCK AND DAIRY.—Spring Cleaning; The Stable, 640, 641.
ORNAMENTAL GARDEN.—Gardening—Its Artistic Phase; Bulbs and How to Grow Them, 642.
SMALL FRUITS AND VEGETABLES.—Fertilizing Small Fruits, 643.
EDITORIAL.—Demonstration Train; Sustains Commissioners; Examining Board, 644.
AGRICULTURAL NOTES OF THE PACIFIC COAST.—Northern, Central, Southern. the Coast, 645.
POULTRY.—Question of Location; Turkey Culture; Scaly Leg; Feeding Meat to Fowls, 646, 647.
BEES AND THEIR CULTURE.—Peddling Honey, 648.
GENERAL AGRICULTURE.—Peat as Fuel; Who Owns the Trees; Poisonous Substances Found in Soil; Poisoning Squirrels, 649.
QUERIES AND REPLIES.—Asparagus; Willow Baskets; Lady Birds; Garden Bed; Government Whitewash, 650.
LEGAL QUERIES.—Trespassing Cattle; Division of property, 651.
VETERINARY.—Sore Eye; Worms; Sweeney; Spavin; Swelling of Throat, 651.
HOUSEHOLD.—Ideal Farming; Playing Wild Indian; About the House, 652, 653.
PRODUCE MARKET.—Los Angeles Markets; San Francisco Markets; Citrus Markets, 654.

DEMONSTRATION TRAIN.

The sixth demonstration train trip which recently ended in Santa Clara Valley was the last of the trips which have been planned by the Southern Pacific Company. To give proper estimate of the worth of these trips to this state is impossible, for it will be years before it will all be fully realized, but sure it is, that great good will result. Equally sure is it that the Southern Pacific Company is worthy of great praise for supplying this service to the producers of the state. It must have cost a great sum of money, but the one feature which is most admirable is that the big corporation appreciated the opportunity to aid the producing interests and promptly and completely met the requirements of the situation. If it is possible for the service to be continued, we believe the railroad people will secure returns to justify it. It cannot be gainsaid that they were looking after their own interests in giving this service, although at the same time they were inspired by a desire to benefit the state. We think we all have a strain of selfishness which impels us to ask, "What is there in it?" We enter into a movement to improve the moral condition of our community, we tax ourselves for schools, we build churches, we organize farmers' clubs, or societies, because these forces all make our surroundings more attractive—benefit us directly. Our effort is none the less creditable.

The Southern Pacific, and all railroads, will ship greater tonnage because of more intelligent farming. If to make the farmer more intelligent pays the big corporations, it will pay the farmer to become more intelligent.

Again, if the railroads will run another kind of demonstration train, we believe it too will prove even more profitable. Let such crops as are today produced at a loss or at least no profit to the farmer be carried to the consumer at a price which will change the loss to a profit. Then watch the tonnage increase. At one time the apple growers of Pajaro Valley wished to transport surplus cull or low grade apples from orchards to a point 20 miles distant where drying facilities were to be had. The best rate which the producer could secure was $1.50 per ton. Sugar beets were carried the same distance for 50 cents per ton. The experiment proved a failure and was abandoned because the apple grower could not dry apples under such a handicap.

The benefits from the Demonstration train are mutual. Other dealings between producer and carrier should be equally so. When that is fully appreciated prosperity of both will be enhanced.

SUSTAINS COMMISSIONER.

There has been offered to the fruit growers of the state for several years a cure for all insects and plant diseases, for which great claims have been made. The sale of this material, known as Wheeler's I-X-L Compound, has been pushed in many parts of the state, and especially at fruit growers' conventions have its merits been proclaimed. Recently the campaign has been somewhat stronger in the Pajaro Valley and the support of the horticultural commission of Santa Clara County has been desired. Mr. C. H. Rodgers who is at the head of the commission made what seemed to him a sufficient trial to show to him that the material was of no value. Consequently he refused to lend his support to the campaign. This brought upon him the charge that he was not unselfish and disinterested in his work. Promptly the Pajaro Orchardists Association called a meeting and a committee was appointed to investigate as to the real merits of the I-X-L Compound. A chemical analysis was made and the committee reported: "We have submitted an official sample to a competent chemist whose report shows that this compound is a weak lime-salt-sulphur solution and contains about one-third the available sulphur present in the ordinary lime-sulphur solution." It also adds: "We find I-X-L Compound at the price charged (about $45 a bbl.) as compared with the lime-sulphur solution manufactured at Watsonville selling at $9 a bbl." Strong resolutions were unanimously adopted by the association; supporting the findings of Mr. Rogers and the committee.

Mr. Rodgers is too well known among the fruit growers of this state to need defense but, if he did, it would be a matter of satisfaction to see the vigorous manner in which his own neighbors, and especially the Orchardists' Association have placed themselves squarely behind him. We trust that he, together with Entomologist Volck and Chemist Luther who have all been hard workers in securing remedies for orchard pests, will be encouraged to continue work for more effective remedies and to frankly make known those which are not effective and yet are offered at long prices to our fruit growers. The committee which reported the chemist's findings and made the strong recommendations consisted of Messrs. A. N. Judd, G. A. Morehead, S. A. Earle and G. W. Bird.

EXAMINING BOARD.

Governor Gillett has just appointed the examining board which will have charge of the examination of candidates for horticultural commissioner for the various counties of the state. This is the first board appointed under the recently enacted law which was passed under strong pressure from many of the horticultural sections of the state. The former law which made it obligatory on the part of the county board of supervisors to appoint three horticultural commissioners made the expense too heavy for some of the smaller counties. The new law calls for only one commissioner and, if the board of supervisors so order, two deputies may be appointed. This commissioner is to be examined by the board recently appointed and his fitness for the office proven. This board, we believe, is not yet organized, but is made up of Hon. H. P. Stabler of Yuba City, Sutter county, Mr. A. T. Garey of Los Angeles, and Mr. C. O. Bocks of Cupertino, Santa Clara county.

POSSIBILITIES OF PLANT IMPROVEMENT.

(Continued from Page 635.)

CALIFORNIA CROP STATISTICS 1907.

CROP	ACREAGE	AVERAGE YIELD	TOTAL FARM VAL.	AV. VAL. PER ACRE
Wheat	1,368,000	14.0	$20,520,000	14.70
Barley	1,040,000	28.9	23,444,000	22.54
Oats	136,000	33.5	3,235,000	23.79
Rye	65,000	19.0	1,063,000	16.16
Corn	54,000	34.0	1,561,000	28.91
Other Grains	.....	.....	800,000	.....
Potatoes, Irish	48,000	1145.0	6,264,000	130.50
Potatoes, Sweet	.....	.....	210,000	.....
Beans	.....	(@ 82 lbs)	2,917,000	.....
Onions	.....	.....	750,000	.....
Alfalfa	.....	tons	6,703,000	.....
Other forage crops	.....	tons	658,000	.....
Total Value			$68,101,000	

And this does not by any means include the entire list of crops.

It is safe to say that the twelve leading field and forage crops of California annually produce $75,000,000 worth of plant products, which by means of livestock and manufacturing processes are doubled in value and if we admit the possibility of a ten per cent increase by the adoption of methods above described, the figures speak volumes. Surely such an increase is reasonable, for experience has demonstrated it in repeated instances.

* * *

Work Accomplished.

The work has developed a barley of the six row type about ten days earlier than the common sort and of superior brewing value.

Three varieties of oats have been found of markedly higher yielding promises than the common red oat, and one of remarkable drought resisting quality on account of its rapidity of growth and earliness. These oats grow alongside of the common oats gave double the yield in 1907 and substantial increase the previous season.

Two varieties of wheat which offer exceeding promise of being more favorable to our interior valley conditions than the common sorts in that they are very heavy producers, mature within a short growing period and are of higher quality for milling.

The demonstration of the advantage of drill seeding grain in the Sacramento Valley is of great moment. On twelve varieties of wheat and four varieties of barley, seeded side by side, drilled and broadcasted, but with all other conditions the same, gave an increased return of two to four bushels of wheat per acre and four to six bushels of barley per acre in favor of drilling. The general adoption of this practice by farmers would produce an added income in grain culture of from $3 to $5 per acre and the added cost is not over fifty cents per acre. Is it worth while?

* * *

An increase of a single bushel per acre to the wheat crop means an added wealth of $1,500,000 and to the barley crop another $1,000,000 and unless I am greatly mistaken we have upon our stations now grains which will accomplish this result as soon as they can be widely distributed, and this is at a total cost of about $15,000.

Yet this is possible of greater improvement and wider adaptation.

The average yield of the Lima bean plant is not over 200 grams, but in some preliminary work during the past season individual plants were found yielding as high as 800 grams or four times the average. There is a wonderful field for the development of greater financial returns in this direction. The adaptation of corn, the improvement in quality of island grown potatoes, the adaptation of green manure crops and numerous other lines offer abundant fields of operation. The possible results are fraught with as much of benefit to the people as the development of our irrigation resources in which we are all so interested and are worthy of a serious consideration. They affect too an unusually large number of people and the resulting benefits are far reaching. The possibility of increasing the field crop product of California by a million dollars per year is certainly a subject worth the while of her people.

Agricultural Notes of the Pacific Coast

Northern California

The Santa Rosa cannery began operations last week.

Strawberry season has ended at Red Bluff, Tehama county.

Sonoma county will make a liberal exhibit at the coming state fair.

Geyserville entertained the Sonoma County Pomona Grange last week.

Red Bluff, Tehama county, reports sugar beets doing exceptionally well.

Several boxes of Sacramento cherries have sold in Chicago as high as $2.60.

California National Forest has private phone communication with Elk Creek.

There were several light frosts at Healdsburg, Sonoma county, last week.

A few boxes of apricots are being occasionally shipped in cars with cherries.

Royal Anne cherries will be larger and better crop than most of the other varieties.

Improvements are being made and the capacity increased at the Healdsburg winery.

Several shipments were made of wool from Healdsburg, Sonoma county, at 25 cents.

The California Fruit Distributers reports the sale of one car of cherries in New York for $4,700.

Georgetown, El Dorado county, reports cherries rather light in crop, but exceptionally large and of fine quality.

Canneries at Haywards are beginning the season's campaign on fresh fruit, cherries being the first to be canned.

A boy of eighteen years has won honors at Red Bluff as strawberry picker, having picked 182 baskets in one day.

The Humboldt County Cow Testing Association finds its plans working out very satisfactorily and the members all enthusiastic.

It is estimated that over 3000 people attended the picnic at Davis, Yolo county, at the time of the dedication of the new dormitory.

Alameda county is considering the advisability of a fine roadway to be constructed through Niles Canyon from Niles to Pleasanton.

The Morse Seed Co. of San Francisco is looking through Sonoma county for a thousand acres, which will be desirable land for a seed farm.

Fruit growers at San Leandro have started a movement to establish a producers' cannery. It is hoped to have the plant in operation inside of six weeks.

The validity of the election recently held for an irrigation district near Stockton, which showed an overwhelming vote in favor of the district, has been upheld.

The lack of light spring rains has been seriously felt by the Humboldt county dairymen, and it is now feared that the crop this season will be the smallest for years.

Sonoma county egg producers have been puzzled because of the lowering price of eggs. It is thought to be brought about by dealers who are not friendly to the producers.

Central California

Late sown Tulare county beets are being irrigated.

Tulare county produces about 275,000 pounds of honey each year.

Barley near Corcoran is reported to run about 30 sacks to the acre.

A Hanford strawberry grower reports a $2000 net profit from six acres.

A close estimate shows that there are about 14,000 Japanese farmers in California.

Hay and dry grass fires are reported from many sections of the San Joaquin Valley.

A big grass fire in western Tulare county burned over 1200 acres before being controlled.

Promoters are looking over the section around Fresno with a view to selecting a site for a sugar factory.

Tulare county claims the largest sugar beet field in the world. There are three sctions of land in the one field.

El Camino Real from San Diego to San Francisco has most of its length marked by the mission bell sign posts.

"Save your hay for the higher prices," seems to be the sentiment of the growers of the San Joaquin Valley.

Porterville reports a disastrous grass fire which started from phosphorus put out to poison gophers and squirrels.

Corn fields near Hanford are being troubled with a pest of green worms which perforate the leaves and do great damage.

The copy of the contract which the Farmers' Union will make with its individual members is being forwarded for inspection.

The Terra Bella, Tulare county, citrus outlook is good. Much new acreage is being set and many settlers are filling the country.

The Kings County Raisin and Fruit Company will install some of the best machinery for handling raisins yet put in any plant.

Tulare homing pigeon fanciers recently conducted a race from Tehama, Tehama county, the winning bird averaging 1145½ yards per minute.

The result of the first year in the big asparagus fields at Corcoran has been very gratifying, and a big cannery is contemplated before next season's cut of "grass."

The general sentiment among people who saw the good work done by the demonstration train has been that the service would be of great benefit to the state if continued.

A project is on foot by which the big Miller and Lux Canal in the western part of Fresno county between Firebaugh and Bethany, will be extended to cover much new land.

A fine cannery was destroyed at Fresno recently by fire. It will prove a total loss. It had just started on the season's run and hundreds of people will be thrown out for the whole season's work.

A Cultivator representative in the orange section in Tulare county says that estimates show over 25,000 acres of citrus trees will be planted this season in Porterville, Lindsay, Exeter and other nearby sections.

Southern California

Orange county beet output will be immense.

Ventura county beet crop is looking exceptionally well.

El Centro is planning for a mill to manufacture alfalfa meal.

The planting of citrus trees near Santa Paula is greater this spring than ever before.

The hold over crop of lima beans in Ventura county was estimated on May 1st to be 200,000 bags.

One San Jacinto grain grower is harvesting 18,000 sacks from 1,000 acres of summer fallowed land.

One wool grower in Ventura county makes the largest sale of the season in disposing of 700 bales to a Boston buyer.

Cherry Valley in San Bernardino county was given nearly an inch of rain last week. It was beneficial to late sown grains.

Shipments of farm products from Imperial Valley have been so heavy that the Southern Pacific has been unable to meet the demand for cars.

Cold weather has delayed the bean crop somewhat and some damage was done by army worms. This has given poor stands in some parts of Ventura county.

The Mutual Dairy Association composed of 400 Southern California dairymen expects to supply 50,000 pounds of milk every day to the city of Los Angeles.

After San Jacinto had supposed its claim to the big sugar factory had been definitely settled, it now appears that the company will build its new factory at Perris.

Mustard seed growers near Lompoc, Santa Barbara county, are entering an emphatic protest against the placing of mustard on the free list in the proposed tariff revision.

The Tustin, Orange county, Packing Co., has tried the experiment this year of shipping loquats to eastern markets. It is not yet determined that the experiment will prove a success.

The crop of oranges in all Southern California is much in excess of earlier estimates and some of the fruit has shown more frost injury than anticipated. All oranges except Valencias will be forwarded within the next two weeks.

The Farmers' Club of Mound, Ventura county, is a good live organization. It holds monthly meetings addressed by men who have information to give to farmers. This month the principal address was delivered by Dr. Elmer Hall of Berkeley.

The Orange County Celery Association recently made final returns on last season's shipments. Total for the year's business for the association was $449,841, or an average of about 25 cents per dozen on all shipments. Total output of the association was 1422 cars.

The Fullerton Tribune quotes from an eastern magazine and says that a new walnut picking machine has been invented which will gather the nuts from a thousand acres of orchard per season. It is claimed that it will do the work of one hundred men, and the cost of operation is only $3.00 per day.

The Coast

A Walla Walla, Wash., farmer has rye six feet in height.

The state of Washington has an official legally appointed mole catcher.

Yuma people are asking for a territorial road to be built connecting Yuma with Phoenix.

A Wenatchee, Wash., apple grower has contracted for next fall's output of apples at $2.50 per box.

The measurement of the Colorado river at Yuma, Ariz., shows it to stand at 26 feet on the gauge.

Seven local unions of the Farmers' Union recently organized a district union at La Grande, Oregon.

The first half crate of strawberries shipped from White Salmon, Washington netted the grower $10.

A farmer claims that he is having good results with growing spineless cactus on the mesa near Yuma.

Flour mills at Seattle have all discontinued grinding of flour until the new crop has reached the market.

The Camas prairie orchards near Grangeville, Idaho, withstood the early May frosts and have an immense crop.

It is reported that immense stocks of canned fruits are held over from last year in the Portland, Ore., markets.

Recent rains were of great value to hop growers of Oregon, and the feeling prevails that a fair crop will be secured.

The poultry department of the coming Interstate Fair at Spokane, Wash., promises to show a greater display than ever.

A drenching rain was given to the Inland Empire and northern Idaho, which insures immense crops of hay and grain.

A manufacturer of Walla Walla, Wash., will exhibit a big threshing machine at the A-Y-P Exposition, finished entirely in polished curly fir.

The Oregon State Grange recorded the highest attendance at its last annual meeting held at McMinnville, when 500 members were registered.

During the twelve months ending December, 1908, Hawaii exported to United States mainland $35,570,636 of raw sugar and $1,940,678 refined sugar.

Owing to the high price of grain and prospects of a big yield, many farmers near Pullman, Wash, will discontinue stock raising and raise wheat.

There will be a special cup offered at the Interstate Fair in Spokane in September for the best herd of swine exhibited. The cup is of such value that strong competition is expected.

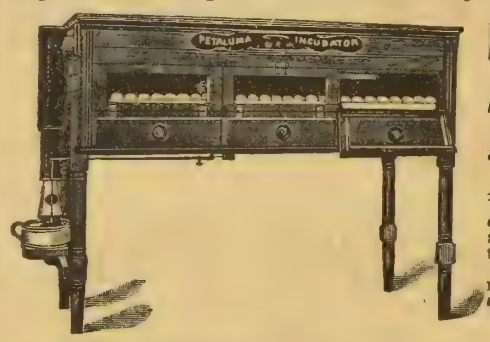
There will be exhibited at theA-Y-P Exposition a log which is not only too large, but too long for any sawmill in the world. In order to saw a board from it for exhibition purposes, a special saw operated by hand was made seventeen feet between handles.

The Agricultural expansion taking place in Arizona is shown in figures recently given by the Arizona Republican showing land cultivated in 1905 in that valley to be 96,863 acres. In 1906, 104,015; 1907, 112,568; 1908, 126,717. And this has been done with the increased abundance of water.

Don't Forget Quality

MIDLAND Poultry Food

Is based on ***quality*** and it is quality in Poultry Food that produces eggs. ***Cheap filler*** and ***cheap grain*** will ***not*** make eggs. ***Midland Poultry Food*** contains only the ***choicest*** cereals and animal food the market affords. You ***can't*** afford to try and be successful and not get results. ***Midland Poultry Food*** will produce results. Try it and see. $1.95 per sack



Petaluma Incubators and Brooders

Are still here, after others are gone. ***The Standard of the World Machine.*** Winners of ***more prizes*** awarded by ***World's Fair Judges*** than any other make.

Remember, we make a hot water machine. One of the ***best hot water machines*** on the market.

Send for our Illustrated Catalogue.

Petaluma Incubator Company

Petaluma, California

Our General Agents for Incubators and Brooders and Midland Poultry Food:
Petaluma Incubator Co., Petaluma, Cal.
Aggeler & Musser Seed Co., 113-115 N. Main St., Los Angeles
Berrar & Robertson, San Jose, Cal.

WYCKOFF WHITE LEGHORNS

Day-old chicks $10 per 100, $45 per 500. Early delivery.

Kill Insects

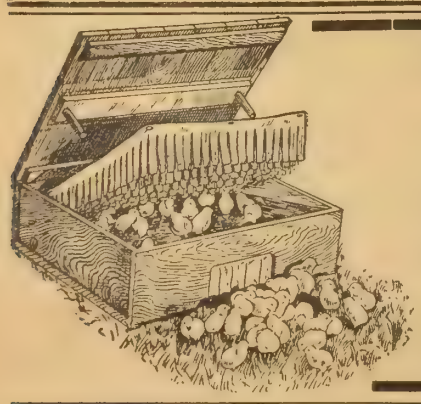
ON PLANTS ON POULTRY

With

Devils Dust

Devils Dust is guaranteed to Kill all kinds of vermin on poultry and insects on plant life.
1 lb trial package 40c postpaid.

HENRY ALBERS CO., 534 SOUTH MAIN LOS ANGELES



Poultry Supplies and Seeds

Petaluma Incubator and Brooders, fireless brooders, Midland poultry food, Steinmesch chick feed, Swift's beef scraps. Send for our large illustrated catalogue of poultry supplies and seeds, it is free.

Aggeler & Musser Seed Co.
113-115 N. Main St., Los Angeles, Cal.
So. Cal. Agents for Petaluma Incubators and Brooders and Midland Poultry Food.

Single Comb White Leghorns

The first essential to success in the poultry business is that the foundation stock or eggs be purchased from a reliable breeder, one who has made a success of the poultry business from the fact that his stock has proven to be the Business Hen. Such stock or eggs we now offer you and stand back of our sales. Prices for stock on application. Correspondence solicited.

Eggs—$1.50 per 15, $7.00 per 100 and $60.00 per 1000.

STUHR-WILLIAMSON POULTRY CO.

278 Bandini Ave. Home Phone 1490 RIVERSIDE, CAL.

The Palouse county near Pullman, Washington, was given a fall of six inches of wet snow near the middle of May.

Cutworms which threatened such great damage have proved most perplexing, but have not been such a serious pest as anticipated.

Profit in the Poultry Yard

By Mrs. Frank Metcalf

We solicit short articles of a practical nature from the fancier and utility breeder, giving their experience with poultry. All inquiries pertaining to feed, management, disease and its prevention will be answered through these columns.

A QUESTION OF LOCATION.

WE need a warmer climate for health's sake, and wish to engage in chicken raising to some extent.

The various Boards of Trade have favored us with Literature, which is "Puffy" and says nothing about fogs and fleas, which are rather live questions, and we wish for more definite information from a resident who is also, if report speaks truly, an enthusiastic lover of fine chickens herself.

Am getting excellent results from my birds here. The past month they have averaged 22 eggs per pullet, 21 each for March.—G. P., Nelson, B. C.

A personal answer was sent to the above. This question is one that many are asking about our country and the responsibility of advising people to come here is one that is rather heavy. Of one thing I feel assured, and that is, that there is no locality so favored for the raising of chickens for eggs and market, but there is no place the scene of more failures than right about here. And the reason is so very plain, that all who run may read. Inexperienced and invalid people flock here, intent upon gaining health, and are told fabulous tales of successful poultry raising, and think that all they have to do is to buy an acre of ground and a dozen hens, and sit down and let nature to the rest.

They soon find that Nature, which has so beneficiently endowed this climate, has also made ideal conditions for pests as well as chickens, or as Bro. Royce wrote me, when I asked his advice from Ohio," Bless you, Mrs. Metcalf, fleas and snakes and bugs of all kinds enjoy this climate just as well as humans do."

I will say this, so far as snakes are concerned, there are not as many here as I used to see in Ohio during the warm months, flies and ants and mites are not one whit worse here than they were there, for when the warm days of spring come there earth swarms with awakened life of all kinds, and they grow with a vigor there, that they do not seem to attain here, excepting by neglect. Land here is high in price, and getting higher every year, so an investment in an acre or two here, is as safe and sure as any investment can be, and the climate goes with every acre, with its health-giving benefits, to which hundreds and thousands owe their length of days and enjoyment of health. Those who bought five years ago paid less than those who buy today. Just as surely, those who buy now, will pay less than those who will come later. The troublesome flea is not troublesome except near the coast, and there but a few notice them. They seem to have an "affinity" for tenderfeet, and do not seem to bother those who have become acclimated.

About a cash market for eggs and poultry, it depends very much upon the producer himself. The hotels and best caterers demand the best of milk fattened broilers, for which they pay generously, but usually the large broiler plants contract them by the year, so they have no use for a dozen or so from a small breeder. A broiler plant is under construction at Inglewood, which is under contract to furnish 200 pounds of broilers daily, of milk fed, crate fattened first-class stock, at first class prices, but it takes large capital to conduct a plant of this kind, and, naturally they take the cream of the trade.

A glance through one of these establishments, with improved methods of feeding, incubating and killing, reduced to a science, will convince the small breeder that he cannot hope to compete with these gigantic enterprises, yet they stand in the same relation to the producers of commercial poultry, that the large fancy plants do to the small breeder of fine fowls, and there are those private people to cater to, and these are the ones to whom the small breeder must look for a market. The new Southern California Breeders Association is the medium through which one can find that market the least expensively, and was the outcome of just such a need. There are other similar associations near San Francisco. By uniting forces, the various commissions are eliminated, and the product reaches the consumer without passing through so many hands, in fresher condition, and with the minimum of expense.

The man who is looking for a location here must be alive to his needs. He must understand the character of the soil, and carry in mind the fact that poultry cannot thrive upon either 'dobe' or alkali land. Sandy soil is best, and if those conditions are not available, he must remove at least six inches of the top soil from the ground where his chickens run, and replace it with sand, which must be renewed yearly. One had better pay more for sandy soil in the beginning, and there are many places surrounding Los Angeles where the best of sandy soil may be obtained.—Mrs. Metcalf.

TURKEY CULTURE.

CORRECT breeding is an art and needs as much study and experience as any science. The feeding, housing, and caring for stock, is very important, but the mating of our domestic fowls and animals needs far more forethought and care. The farmer today is giving great study, both practical and scientific to farming, regarding the soil, but his best thought and intelligence is required in breeding his stock so as to improve it. Every year his aim must be to produce something better, to improve along the line, which gives stock a better market value such as a carcass that will bring more in the market, an improvement in producing quality and quanitity of eggs, or the production of stock that will approach nearest the standard of perfection. In the turkey in a state of nature the survival of the fittest is all that can be looked to, to continue, which only means vigor of the breed, but in domestication there are other characteristics that are necessary to make them profitable. When a turkey of desired qualities is found, by careful selection and correct mating for a number of years, these characteristics become hereditary. Only in this way is it possible to improve stock and maintain improvement. It is said that if turkeys are turned out to mate as

they please, the breed soon deteriorates. In breeding turkeys for the market the profits depend upon the number of pounds produced, but in breeding them to the standard of perfection, profits depend upon the excellence of each individual from the breeder's standpoint or their ability to successfully compete in strong competition, or exhibit the superiority of their ancestors and their reliability in reproducing their own type. When a bird is to be established many things are to be taken into consideration. It is most desirable to have them bred to one type. The law of "Like begets like" works in proportion to the purity of the breeding of each parent. Proof of this statement coming under our own observation: One year we purchased a very handsome young Bronze tom, whose ancestors had the reputation of being pure bred and to all appearance he was pure bred, but in moulting at sixteen months old he moulted out white wings, not only this but several of his offspring had this same disqualification also; showing a cropping out of the impurity of his parents or ancestors on one side or the other. All offspring from this tom were fit for the market only.

Early maturity is not always desirable in breeding stock, as early maturity naturally does not go with longevity or size. There is no doubt that quick growth is desirable from the market standpoint but slower growth has a tendency to prolong the usefulness of a bird wanted for a breeder. Some diseases are hereditary and will crop out in future generations. So it is very necessary that if we are to have healthy stock, we should be sure that we are selecting healthy parents whose ancestors were known to be free from diseases.

Much of the roup that is so prevalent in the fall among turkeys, might be traced back to some roupy parent. All birds that have shown a tendency for contracting this dreaded disease should be excluded from our breeding pens.

SCALY LEG.

Scaly leg among chickens is caused by a small parasitic insect which works on the legs of the chickens causing secretions which form the scales. The work of this minute insect is not only annoying to the fowls but saps their vitality. Often the scales are knocked loose, causing the legs to bleed. The parasite spreads more rapidly when fowls are confined.

As winter comes on and chickens are put into their houses for roosting, examine them for scaly leg, for if it is in the flock it will spread rapidly in the hen house. The best time to examine and treat them is at night. First wash the diseased leg with warm soapy water to loosen the scales, then apply carbolated vaseline. It is best to treat every fowl to make a sure job. Two treatments about a week apart usually kills all the insects and cures the legs. Three good treatments never fail to do the work. It is also necessary at the same time to disinfect the hen house in order to kill insects harboring in the walls and on the roof.—N. W. Horticulturist.

FEEDING MEAT TO FOWLS.

Too much meat, either ground or fresh, is injurious as it causes bowel disease. It may be fed three times a week if dried, ground meat is used and twice a week if fresh butcher's meat is given. One pound of fresh meat, chopped, is about the proper quantity for fifteen hens, and half a pound of the ground meat answers for a meal, mixed with other food for the same number. If preferred, the ground meat may be given twice a week and the fresh once.

The subject of breeding is an almost inexhaustible one, and takes a vast amount of study and experience to understand it. Many have made it a life study and then been at a loss to understand many phases of the subject. Yet if some of the first and a few of the simplest principles were observed in mating and breeding improvement would surely follow each year.—Poultry Tribune.

Coulson's POULTRY FOODS

Growing Chick ...Food...

Can be fed damp as a mash or dry in hoppers. Feed it to your chicks up to 3 months old. Gives rapid growth and health.

It will save your grain bill, and you cannot afford to be without it.

For free samples and prices apply to

Coulson Poultry & Stock Food Co.

Petaluma :: California

Croley's

High protein MEAT SCRAP. Just what the name implies.

A Meat Scrap High in Protein

Why Not Use the Best

Manufactured by

Geo. H. Croley

Poultry Supplies

631-637 Brannan St. San Francisco. Cal.

Los Angeles Agents, Globe Mills, 925 East Third Street.

GEESE

Toulouse *Embden*

Prize winning stock never beaten at any poultry show.

$1.50 Per Setting

Send your order at once for the best stock in the west.

T. B. C. Sielcken

Calistoga, Cal.

Poultry Supplies

Write for free Catalogue.

Germain Seed & Plant Co.

326 So. Main Street, Los Angeles

COULSON'S POULTRY FOODS

MADE IN PETALUMA

GUARANTEED

SOLD EVERYWHERE

BOOK ON DOG DISEASES

AND HOW TO FEED

Mailed FREE to any address by the author.

H. CLAY GLOVER, D. V. S., 118 W. 31st St., New York

"Success" Fireless Brooders

50 Chick $2.50
150 Chick $5.00

We Pay Freight

Will raise every chick, send today for free circular; tells about this wonderful brooder.

No Lamp, No Smoke, No Odor, No Danger of Fire

We pay freight. I sell on trial, if not satisfied I will refund you every cent. Order now. I can ship the day I get your order

E. E. McClanahan

112 E. 8th, Los Angeles

Coulson's POULTRY FOODS

Special Dry Chick Food

Makes Them Grow

Throw it out in the Litter and Make them Work

COULSON'S SPECIAL DRY CHICK FOOD, during the five years it has been on the market has justly earned for itself its great reputation as a life-saver for little chicks by its special adaptation to their needs.

THE UTMOST CARE is observed in the selection of each of the dozen or more articles composing this unequaled feed; tender seeds, cracked grains blown free from dust, steel-cut oats, tiny pieces of dried meat and bone, willow and pure bone charcoal, are combined with other very necessary ingredients; every article being selected with special reference to its quality, strength and desirability for the needs of the young chick.

FOR YOU TO BUY the many different articles composing Coulson's Special Dry Chick Food is quite impracticable; you could not be certain as to their quality for one thing, and the high cost of certain of them when purchased in small lots might lead to their being left out to the detriment of the chick.

TO MAINTAIN the present high reputation of COULSON'S SPECIAL DRY CHICK FOOD, nothing is left undone to make it absolutely the best feed that can be made for the little chicks.

COULSON'S SPECIAL DRY CHICK FOOD can be fed exclusively to your little chicks for the first six weeks, at a cost of about four cents (4c) each; and what is of still greater importance, it will do all that can be done in the way of feed, to bring them through that critical period of their lives in full health and vigor.

TO RAISE EVERY CHICK you hatch; to have fine, large, healthy chicks; to have chicks that will stand up and crow when eight weeks old; to raise chicks that you will be proud of, FEED COULSON'S SPECIAL DRY CHICK FOOD, THE LIFE-SAVER. Write us for free samples and prices.

Write Us for Free Samples and Prices

Manufactured Only By

Coulson Poultry and Stock Food Company *Petaluma, California*

GERMAIN SEED CO., Distributing Agents, Los Angeles, Cal.

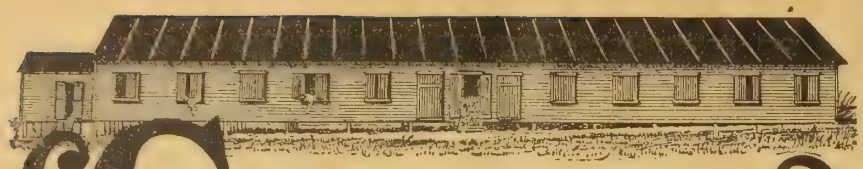
Bee Supplies

For the Pacific Coast

We are the exclusive agents for the **A. I. Root Co., Medina, Ohio.** Our hives are manufactured from selected California Sugar Pine. Branch houses at Los Angeles and Elk Grove, Cal. Write for Catalog. We also manufacture orange, fruit and packing shook, drying trays etc. Beeswax wanted.

Madary's Planing Mill,

Fresno, California



CONGO ROOFING

NEVER LEAK

A SURETY BOND WITH EVERY ROLL

WE don't ask you to take our word for the durability of Congo. We give you a genuine **Surety Bond** issued by the National Surety Company, giving you absolute protection and the certainty of satisfaction.

This Surety Bond is wrapped with every roll of Congo. On our three-ply grade it guarantees the roofing for **10 years.** There is no catch about it. The bond means that we have satisfied the National Surety Company that we will stand by the provisions of the guarantee; and if we should fail to do so, the loss will fall on them.

This SURETY Bond is as good as a Government Bond.

WITH Congo on your roof, and the bond in your safe, you are absolutely protected.

If Congo was made of paper it would still be the best roofing to buy with such a guarantee, for the guarantee means that we will keep you satisfactorily roofed for ten years, and that is what you want.

But of course Congo is not made of paper, but of such **durable, waterproof** materials that there will be no trouble or complaint during the 10 years. If it were not the Surety Company would not guarantee it.

FREE SAMPLE

LET us send you a sample of Congo, together with a copy of the Guarantee Bond. Both free on request.

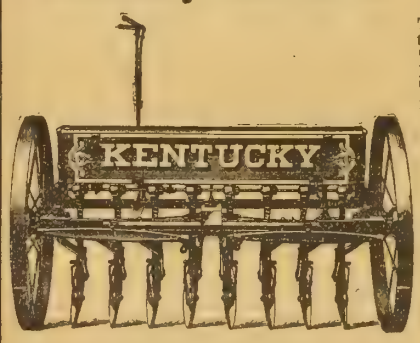
UNITED ROOFING & MFG. CO

West End Trust Bldg., Philadelphia, Pa

Chicago San Francisco

Blake, Moffitt & Towne Los Angeles Agts

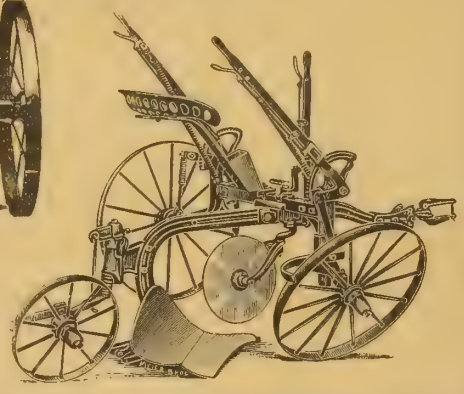
Kentucky Disc Drill



The record of this Disc Drill on this coast has been phenomenal. Its extreme simplicity, strength and general appearance has made it sell. The Kentucky Disc Drill now contains many improvements over its predecessors and many advantages not possessed by any other Disc Drill. Write for illustrated folder. It may mean much to you.

Syracuse Sulky Plow

The axle of the Syracuse Sulky Plow is made of two steel bars placed parallel; is above the beam. This is a decided advance in plow construction. Is a modern plow for modern farming. WRITE TODAY for illustrated circular. Sold by leading dealers or direct by us.



ARNOTT & CO., 112-18 So. Los Angeles Street Los Angeles, California

Baby Special

Chicks, extra big hatches due every week till late in June. Barred and White Rocks, Rhode Island Reds, White Wyandottes, Black Minorcas, Buff Orpingtons, White and Brown Leghorns. We can supply any of the above kinds in large lots every week.

PRICES—$14 per 100 for all kinds except White Leghorns $10 per 100, and Brown $11 per 100. Cut this ad out and mail with order for 100 chicks of any kind and we will send 10 CHICKS FREE OF THE $14 kind, or 5 free of the $10 or $11 kind. Order at once; we can ship most any day. This offer is good till June 10th. Free chick and hatching egg book, ask for it. We hatch 17 kinds of chicks.

Pioneer Hatchery Company

112 East Eighth Street, Los Angeles, California

Special Pigeon Sale

For a short time only. Pure hen pigeons, $2.00 pair. Runt Crosses, $1.00 pair.

HARRY McINTIRE, Box 1454, San Diego, Cal.

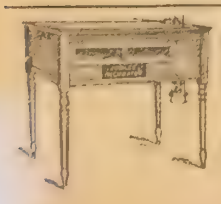
Mrs. C. D. Hubbard's

White Wyandottes

Black Orpingtons and White Rocks

Write for Circular

San Fernando, California



WHY?

Do All Prosperous Poultrymen Use

Jubilee Incubators and Brooders

Our Catalogue A Will Tell You. It Is Free.

Jubilee Incubator Company ***Sunnyvale, Cal.***

Bees and Their Care

By Henry E. Horn, Riverside

PEDDLING HONEY.

FOR some years I sold my honey by wholesale, and might have never seriously contemplated a better plan had not a poor honey year nearly forced me to peddle much of my crop. Just how I did it might not be the best plan, but some of my ideas may be worth telling.

Most of my sales were made from a spring wagon on the cover of which my advertisement was plainly lettered. The wagon-cover was white, and on either side of the wagon was the word "Honey," large enough to be read across the street, while my name and address were of smaller lettering, all made of dark paint. On the back part of the wagon-cover the word "Honey" was lettered so it could be read over a block away. Most of my town sales were made in Modesto, a town of perhaps 3500 people. I began at the east side of town, and made a house-to-house canvass, up one street and down the next, shuttle fashion, till the west side was reached. When peddling on Fourteenth street, all houses facing between Fourteenth and Thirteenth were visited, and so on. The bulk of my sales were made at the homes. Frequently a lady would take the honey and request me to call on her husband at the shop or store for the pay, and it would take only a few minutes in the evening to make collections for the day. Often a lady would not want the honey at the time, but would want it, say, two or three weeks later, and I made it a point to supply the honey on time. If a person really wanted the honey, and did not have the money on hand at the time, I would reply something like this: "You know your business better than I do. If you want the honey, take it and leave the money at Maze's drug-store when you get it. Maze is a square fellow, and I shall get the money all right."

Many, both in country and town, would take the honey on those terms, and the loss by bad accounts was very small. Mr. Maze really liked to do free collecting for me, as it brought prospective customers to his store.

One of the leading grocers said it increased his honey sales when the town and surrounding country became interested in honey by my efforts. When a prospective customer on my beat had already inferior honey, adulterated or otherwise, it was a part of my business to trade for it, for very few will buy honey when they have any kind of honey on hand. Occasionally a person would think my honey was adulterated, and it sometimes took a quarter of an hour to convince such a doubter, but it had to be done before I left.

Granulation of our honey is one of the most troublesome things in the peddler's way. The best solution I have tried is a boiler, over seven feet long and nearly two feet wide by 20 inches deep, inside measure. The sides and ends are made of 1½-inch redwood boards well bolted together. The heavy galvanized-iron bottom extends 4 inches past the body of the tank at each end (to the end of the side-boards), up a little at each side and up a foot in front as insurance against fire that may flash up from the furnace. The sheet-iron bottom was fastened to the wood by screws through white lead. The lid (which should not be turned down when melting honey) is of matched Oregon pine fastened on with strap hinges. The brick furnace is deep enough to make room for weeds, brush, or vines for fuel; and I regret that I used six-inch pipe instead of eight-inch; for when using weeds it sometimes smokes the room. A slatted bottom keeps the iron from sagging. By using two slatted trays, one longer than the other, and held in place by brick, I can melt honey in five-gallon cans, and in one and two quart jars at the same time. Honey in Mason jars must be melted well, while in the cans it is not necessary to melt it for sale. This boiler is also fine for melting combs for the wax-press.

Owing to change of farming plans it is not likely I shall peddle much more—only fill local orders. But it is delightful to hear the boys say to their mothers, "Here comes the honey-man!" It is also interesting to hear the ladies say, "I am so glad to see you come."

When we consider what a palatable and wholesome food is honey, and how little expense and labor is involved in securing and caring for a few colonies of bees, it seems passing strange that so few farmers take up bee keeping. The bees work for nothing and board themselves; and, besides storing a large quantity of surplus honey for the family and for sale, do a valuable work for the farmer by pollenizing his clover and fruit bloom. In one neighborhood, where bees are kept, farmers sold up to $75 worth of alsike clover seed per acre last year, largely owing to the work of the bees, and one bee keeper in the same section sold $3,000 worth of honey.—Advocate.

If you "keep a bee" you should also have more strawberry plants. It is said that a swarm of bees will visit 10,000 strawberry plants in one day.

Half a dozen colonies of bees in well arranged hives are sufficient to begin the bee business. In fact, they are about what the average farmer should keep. Before embarking in the business, however, it is advisable to become posted as much as possible. This can be done by studying books and papers on bee culture and by visiting some apiary conducted by a man who knows the business.

With a cage to set over a hive one can work in comparative comfort all day long, and seldom get stung. Bees are very sensitive creatures, and they do not like robbers about their homes. If we open one of the hives, and a hungry lot of robbers commence to steal from them, how mad they will get! And we are almost sure to get stung.

Keep honey in a warm and dry place with a current of air passing through it. In the majority of homes, possibly no better place can be found than the attic.

If you have a good market and retail your honey direct to the consumer you can possibly realize more profit by putting it up in one and two pound glass jars.

Never take honey from the hives for extracting until nearly all sealed. The longer it is left in the hives the better the quality.

The Schmeiser Portable Automatic Derrick

Comes nearer stacking hay without assistance than any other Derrick in the market.

Write for descriptive circular today and we will tell you how it can be done.

Schmeiser Manufacturing Co.
Davis, California

General Agriculture

PEAT AS FUEL.

PEAT is partly decomposed vegetable matter formed either where ground is saturated with water most of the time or where it is permanently covered with water, It is the dark-colored or nearly black soil found in bogs and swamps, commonly known as muck, although technically a distinction is made between peat and muck, the latter name being restricted to those forms of swamp deposits that contain too much mineral matter to burn freely. Dry peat may be very fibrous and light colored or compact and structureless and dark brown or black. It is usually somewhat lighter in color when dry than when freshly dug. When wet it contains as a rule from 80 to 90 per cent. or more of water; that is, a short ton of wet peat rarely contains more than 300 pounds of dry peat and may yield as little as 100 pounds. In the wet condition it is entirely noncombustible, and the various processes by which it is prepared for use or market consist principally of methods for ridding it of water quickly and cheaply and for increasing its fuel efficiency and transportability.

The great peat deposits that are widely scattered in the northern part of the United States have at various times aroused strong public interest. In the winter of 1902-3, for instance, when the strike of the coal miners in the anthracite region of Pennsylvania brought the country to realize that it was to a large extent dependent on these miners and their employers for an important part of its fuel supply, a number of writers familiar with the conditions in the countries of northern Europe called attention to the fact that those countries, possessing a climate much more severe than ours, were using great quantities of peat for fuel, while in this country, although the material was abundant, it had only exceptionally been prepared for use and then in the crudest way. During the next few months many experimental and speculative plants were established to convert peat into fuel, but unfortunately many of these attempts were financially unsuccessful, and as the strike was soon over and coal could again be had at reasonable prices and very little peat fuel was put on the market at any price, interest in peat waned and at the present time the public is almost indifferent to it. In the few places where it can be purchased, however, it finds a ready sale and is thoroughly satisfactory for all domestic uses.

An interesting account of the nature, origin, and uses of peat appears in a report by E. S. Bastin and C. A. Davis, on the peat deposits of Maine, which has just been published by the United States Geological Survey as Bulletin 376. Copies of this bulletin may be obtained free of charge by applying to the Director of the Survey at Washington, D. C.

WHO OWNS THE TREES?

Freudenstadt is a town of seven thousand people in the Black Forest region of Germany.

Chisholm was a town of six thousand in the Big Woods country of Minnesota.

Every year, from the tall black pine trees which grow in ordered regiments on the six thousand acres of publicly owned land about Freudenstadt a regular crop of lumber is cut which pays all the expenses of the city government—Mayor, Aldermen, Police and Fire Departments. And that crop will go on forever. The thrifty people of Freudenstadt may devote their whole attention to their thriving iron and chemical industries, knowing that the beautiful and beneficient forest will pay all the cost of their municipal activities.

Every year—until this—greedy private corporations have sent their hordes into the country about Chisholm to loot the great pine woods, leaving behind them a trail of ruin and desolation and piling up the dry slashings like kindling wood ready for the match. Every fall the patient people of Chisholm have gone to bed with the acrid smell of burning pine in their nostrils, fearing lest before they woke the forest might take its fiery revenge. Last summer it came. For weeks thick clouds of smoke lay over the town. Then on a Saturday night the hurricane of flame swept down and burned Chisholm to the ground. So sudden and dreadful was the onslaught that domestic animals dropped dead in the streets, overcome by the heat. Men carried out their sick on beds and rushed them through the smoke and flying embers to places of temporary safety. One woman died of fright. In the morning more than five hundred families were homeless.

Freudenstadt is a town without taxes. The forest pays them. Chisholm is a town without homes. The forest destroyed them.

That tells—in little—the story of the forest policy of the United States and its results, as compared with that followed in civilized countries.—From Henry M. Hyde's "Looting the Forests," in Technical World Magazine.

POISONOUS SUBSTANCES FORMED IN THE SOIL BY PLANTS.

The Bureau of Soils of the U. S. Department of Agriculture has recently added a new factor to the causes of soil fertility. The claims of the Bureau are that practically all soils contain a sufficient supply of mineral plant food for crops to grow indefinitely, and that plants give off or excrete from their roots certain toxic substances into the soil. These by accumulating become poisonous to the plants that produce them on the same principle as a man being shut up in a tightly closed room will soon cause the air in that room to become poisonous to him by exhaling poisonous gases into it. Every kind of plant excretes a substance that is poisonous to itself, but this substance may not be detrimental to other crops and may even be beneficial. By growing the same crop, say wheat, upon the same land year after year, the toxic or poisonous substance given off by the roots of the wheat plants accumulate to such an extent that the soil actually becomes poisonous to wheat plants and they refuse to grow there. If now other crops be grown on that land or it be fallowed these toxic substances disappear and wheat can again be grown there. Thus we have the benefits of rotation.

If manures or fertilizers be added to this soil, they have the power of neutralizing the poisonous substances so that wheat can again be grown there. The manures or fertilizers also add new plant food to the soil, but this is a secondary consideration, as the principal reason for adding it is to neutralize the toxic substances excreted by the roots of the previous crop.—Campbell's Farmer.

POISONING SQUIRRELS.

Mr. Oestergard of Burbank while in the office recently stated that he had found one of the best poisons for ground squirrels to be the strychnine and wheat combination. To mix, he dissolves ⅛ ounce strychnine in ½ pint vinegar. This is sufficient for eight pounds wheat. Before being placed on the wheat, sugar is added to the dissolved strychnine mixture until it will take up no more, after which the wheat is stirred into the mass, and it is spread on trays or plates to dry, being shoveled or stirred over several times to insure thorough mixing of the poison.

Regarding the query as to deer that have infested one man's orchard, Mr. Oestergard says that if the strychnine mixture without the sugar—is placed upon leaves which Mr. Deer visits, it will sicken him so that he probably will not come back again. He controls rabbits and other pests that destroy his melon vines by using the same mixture. One or two drops on leaves which rabbits nibble is sufficient.

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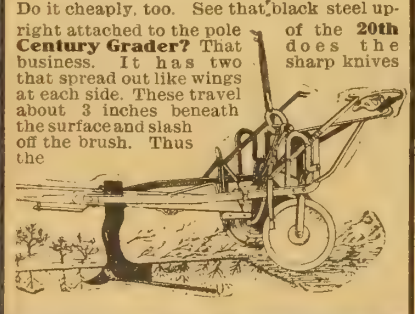

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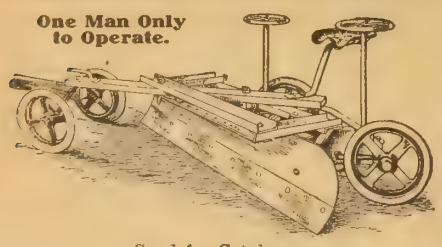

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The Rose Carnival at Santa Rosa was a complete success.

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Asparagus.

How long can I gather asparagus? I have a half acre which is two years old, three years from the seed. I gathered for the first time this year. Recently the yield is not so good as usual.—Subscriber, Redlands.

Do not cut any more this season but allow everything but weeds to grow until late in the fall when you can cut the summer's growth and haul it off and burn it. The fact that you are not getting as much as earlier in the season shows that the continual cuting is weakening the plants and it would be possible to destroy them altogether by continued cutting. By another year you can cut more freely. —Q. A. L.

Willow Baskets.

Will some one please give simple instructions for making willow baskets?—B. J. O'M., Anderson.

If any of our subscribers has experience along this line, a communication will be appreciated. It is surely something out of the ordinary.

Ants.

How may we rid a live oak tree of ants?—B. J. O'M., Anderson.

Spraying with kerosene emulsion would make it very unpleasant for the ants. If the hill can be found, the use of bisulphide of carbon will greatly decrease their numbers, or perhaps kill them all. The scattering over the trunk of buhach, which is intensely disagreeable to all insect life, will usually cause them to leave their haunts. This would be expensive in any great quantity, but, in the case of one tree near the door, it might be advisable to scatter over its rough trunk. An ant paste which has been advertised in the Cultivator is said to be exceptionally successful in driving them away.

Lady Birds.

Will you be kind enough to inform me what kind of an insect this is enclosed in the bottle. It is feeding on potato tops.—H. A .S., Carpinteria.

This was referred to Mr. S. A. Pease of San Bernardino. He writes: "Two of the specimens are the larvae, and the other two evidently the pupae, of one of our common lady birds, probably Coccinella Californica, consequently I think your correspondent must have been mistaken about their eating potato plants, as their food is principally aphids or other soft bodied insects."—S. A. Pease.

Garden Bed.

I want to make a permanent garden without plowing or spading any ground. In other words, I wish to haul different kinds of soil, mix, and make a garden bed on the surface of the ground. Do you approve of the method? My plan is to take planks about 18 inches or two feet wide and stand them on edge permanently, using stakes on the sides, making the beds as long and wide as desired. Do garden beds prove entirely satisfactory made of mixed soils and imbedded just on the surface of the ground? I would expect to haul rich sediment from the river and also manure from the livery stable, and then add some other different soils, such as would possibly be easily obtained, according to your best judgment. I would like to plant about ten or fifteen different kinds of garden vegetable and then attend to them in a systematic manner.—Subscriber, Ukiah.

We fail to see the gain in such an expensive way of making a garden. Of course if the soil is an alkali "dobe" or of such a nature that it is impossible to use without such treatment, it would be necessary, but even then, the expense would never permit any profit on the product. If the ordinary soil is in fairly good condition, it can be improved wonderfully by either spading in of fertilizers, especially of vegetable manures in the form of stable manure which will give an almost immediate supply of humus. We can also imagine where a very coarse gravelly soil is encountered, the hauling of richer bottom land would be a great benefit. We see, of course, no objections to making beds along the lines suggested by the subscriber, as it would certainly give a rich soil in which to grow a few vegetables. In regard to adding stable manure, we would suggest, however, that it would be best to spread it some weeks or months before planting unless it be well rotted before it is applied. The application of fresh strawy manure and spading in deep does not make, immediately, a good condition of soil. Such manure, however, makes an excellent mulch to spread over the top of the ground after the seed are planted.

Government Whitewash.

Can you give me the government receipe for whitewash. I have been told that it is a whitewash used on the buildings at the experiment stations that is as good as paint for rough wooden buildings, and that it can be tinted any color.—Mrs. R. T., Escondido.

Below is given the formula for government whitewash used on light houses and other public buildings. You will probably find this nearly as expensive as paint. For cheap buildings of rough lumber we imagine the use of ordinary whitewash to which a little salt water has been added as a fixative will answer satisfactorily with occasional renewals. Here is the so-called government formula:

Unslaked lime, 2 pecks; common salt, 1 peck; rice flour, 3 lbs.; Spanish whiting ½ lb.; glue (clean and white), 1 lb.; water a sufficient quantity. Slake the lime in a vessel of about 10 gallons capacity; cover it, strain, and add the salt previously dissolved in warm water. Boil the rice flour in water; soak the glue in water and dissolve on a water bath, and add both, together with the whiting and five gallons of hot water to the mixture, stirring all well together. Cover to protect from dirt, and let it stand for a few days, when it will be ready for use. It is to be applied hot, and for that reason should be used from a kettle over a portable furnace.

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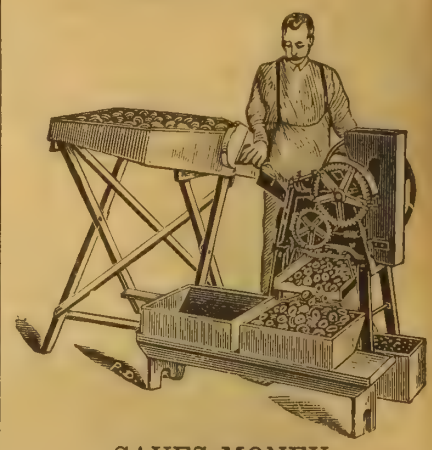

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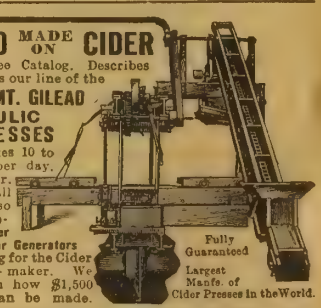

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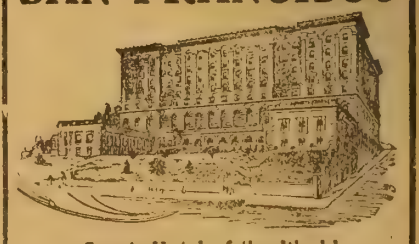

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Legal Queries

Edw. L. Payne, attorney, 301-304 Douglas Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Payne is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Trespassing Cattle.

My neighbor and I built a partnership fence between farms which prevented the cattle and horses from going through. Since then he has rented his place to parties who keep sheep. Am I compelled to fence against these sheep? I use a part of the fence for cattle and horses, and part I do not use at all. What is allowable in taking up sheep where they are on my land causing damage?—Subscriber, Winters.

You are not compelled to fence in order to keep your neighbor's sheep off your property, but you may do so, and if your neighbor makes use of the line fence to help enclose his property by joining on to it, you could collect half of the cost of fencing from him, provided the fence is a lawful fence.

You have a right of action for any damage caused by the sheep through trespassing on your land. You will find in the Cultivator of May 27th, under the head of "Legal Queries" the provisions of the state law governing the taking up of stray animals. The old state law there referred to is superceded by the later enactment, and the only damage now obtainable without an action at law is as follows:

The total amount paid for recording the notice containing the description of the animals, etc., with the county recorder;

The sum of 15 cents per day for the keeping and care of each horse, mule, cow, calf, etc.

The sum of 5 cents per day for the keeping and care of each sheep, goat, or other animal not hereinbefore specified, providing that the taker-up of such animals must properly feed and water the same.—E. L. Payne.

Division of Property.

A man dies in California leaving no will. He is survived by a wife and three children, two of the children being under age. The place—standing in his name—was mortgaged, and there were other debts. The wife put some of her own money, given her by her mother, into the place. Supposing the mother and children stay on the place, rent land, tend the home place, pay off the mortgage and all doctor bills and funeral expenses and other debts, and make improvements, what share will each receive in a division of the property?—R. E. H., Fullerton.

It is impossible to give an intelligible answer to the foregoing in the short space allotted here. There are too many variations possible, but briefly, if the property was the separate property of the deceased, one-third would go to the surviving wife and the remainder in equal shares to the children.

The separate money of the wife having gone into the place, she would be entitled, except for circumstances which might alter the case, to a proportionate amount of the property which would not belong to the estate, and which she would have, plus her one-third interest.

If the property was community property, she would have a one-half interest, plus the interest belonging to her by reason of her separate money having gone into it, and the other half would go equally to his children.

The balance of the question requires a knowledge of more facts than the query furnishes to enable the writer to answer.—E. L. Payne.

Veterinary

Answers in this column by Dr. R. T. Whittlesey, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Sore Eye.

I have a six-year-old horse troubled with sore eye. About six weeks ago it commenced to get sore and watery. He keeps it closed and water runs out continuously. The eye-ball is colored light red or amber.—Subscriber.

Get the following eye medicine and introduce a few drops inside the lids five or six times daily with a curved medicine dropper. Be very careful not to injure the eye in doing so: Adrenolin, 2 drams; atropia sulphate, 8 grains; water sufficient to make 2 ounces.—R. T. W.

Worms.

I have a horse that seems to have scours, and always backs against the fence and rubs. Do you suppose the animal has worms, or what would you call it? I have treated for worms but with no result.—Subscriber.

Give your horse the following medicine for the worms: aloin, ½ oz.; turpentine, 3 oz.; linseed oil, 1 pt. Repeat in three or four days. Rub the tail with kerosene once daily until he stops rubbing it against the fence.—R. T. W.

Sweeney.

What is the best remedy for sweeney?—P. C., Escondido, Cal.

Sweeney may be caused by diseased conditions in other parts of the leg, producing either lack of use or too much exertion in this set of muscles on the shoulder. If there is disease in other parts of the leg, it must be cured or the sweeney never can.

The local treatment we have found most successful is the injection under the skin of a salt water solution, about one heaping teaspoonful of salt to one pint, boiled and strained. Inject one to four ounces under the skin with a hypodermic syringe. This treatment effects a cure in nearly every case. Repeat in two or three weeks. Or several setons or rowels made of cloth or wide tape may be passed under the skin for the distance of three inches. Put in six or eight; wash clean and move them once daily.—R. T. W.

Spavin.

I have a mare that is spavined. Can she be cured. What is the treatment?—H. M. W., Acampo.

There are different kinds of spavins. Bog spavin, a disease of the true hock joint is seldom cured. Bone spavin, a disease of several small bones and joints in the lower part of the hock, can usually be cured, at least well enough for team work. The best treatment is "firing" with a hot pointed firing iron. This should be done by a man who understands the anatomy of the part. You might make a bad matter worse. The so-called spavin cures are useless so far as I have ever seen.—R .T. W.

Swelling of Throat.

I have a three month old colt which I thought had a cold or distemper, but there seems to be something wrong about his swallowing. He nurses a little then drops his head and the milk runs out of his nostrils. He has been this way for a month and is getting worse.—H. S. G., Murrieta.

There is an edema or swelling in the pharyngeal pouch that covers the upper end of the esophagus and prevents the food from all going down into the stomach. It is rather common as a sequel to distemper, and usually rights itself in time. Continuous painting of the throat with tincture of iodine will have a beneficial effect.

DR. WHITTLESEY'S VETERINARY REMEDIES.

These are not ordinary mixtures but are from well tried formulas, used in an extensive practice in Southern California for nearly a quarter of a century. Dr. Whittlesey's Sulphur Arsenical Salve for deep fistulous or ordinary chronic, indolent sores such as, "Poll Evil," "Fistulas," "Quitters," "Thrush," "Scratches," "Warts," "Collar sores" or "Sit-fasts." $1.00 per package postpaid. Printed directions. Dr. Whittlesey's Antiseptic Healing Powder. Forms a coating over raw surfaces, excludes air, flies and floating germs. Makes a cheap and convenient dressing for the many sores that occur to stock on the ranch. $1 full pound can postpaid.

DR. R. T. WHITTLESEY.

Veterinary Hospital, 714 East Seventh St., Los Angeles, Cal.

Leading place is given in the June Century to a curious piece of fiction, called "With the Coin of Her Life," the first of three stories turning on the popular superstition of thirteen at table. The authorship of these stories is not now announced, further than to say that Dr. S. Weir Mitchel, Owen Wister and Margaret Deland are the contributors to this symposium—which was suggested by a private discussion of the influence of point of view on human judgments. The stories were written without any one of the three having knowledge of the plots to b worked out by the other two.

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O. L. CRANE, BREEDER OF PIT AND Cornish Indian Games. Rural No. 3, Santa Rosa, Cal.

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FOR SALE—RENT OR EXCHANGE, boilers and engines, gas engines, pipe and oil well casing, pumps, all sizes and makes; get our prices before you buy. A. CANNADY & CO., 691 N. Main St., Los Angeles, Cal.

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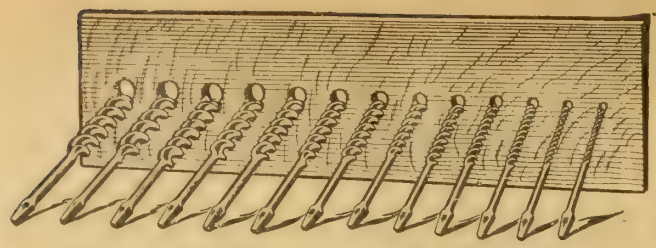

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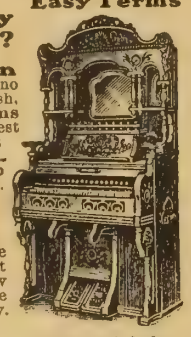

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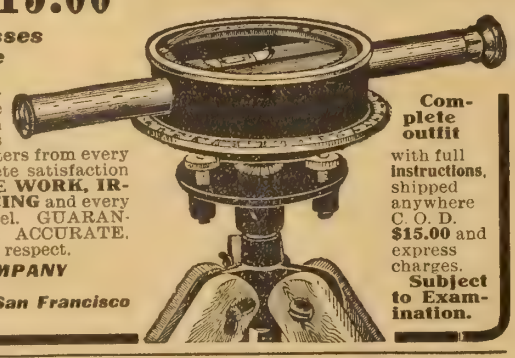

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Household Department

IDEAL FARMING.

If strawberries grew without weeding,
If cherries were rubies aglow,
If plum trees bore turquoise, the farmer
Would no longer bend over the hoe.

If each apple sold for a dollar,
And peaches would sell for a dime,
If each cabbage head were a diamond,
Wouldn't farmers have a good time?

If farmers didn't have to do chores,
If milking machines all would work,
If cow stables were all self cleaning,
Then farming would boom with a jerk.

If farmers made hay in wet weather,
If drouth did no harm to the grain,
If bugs ate nothing but thistles,
Then farm lands would pick up again.

If cobs were covered with gold coins,
Instead of with kernels of corn
We would spend our last days on the homestead
And never look blue or forlorn.

If farmers were rich like Rockefeller,
If lard paid like standard oil,
We might play golf with Carnegie,
And shirk from a lifetime of toil.

But farming is not all a poem,
We must work, we must sweat, we must glean,
So all we have said in this story,
Is much like a summer night's dream.

—Green's Fruit Grower.

PLAYING WILD INDIAN.

"YOU'RE a regular 'Tom-boy', Jess," said Molly one day to her sister, as that young lady came tumbling out of the barn door with her apron full of apples.

"Have an apple,' answered Jess, unconcernedly, burying her own white teeth in the cool, red cheek of a ripe Fameuse. "I'm off for 'Cosy House.' These apples are for supplies. We're playing 'Early Settlers Attacked by Indians' this afternoon, and I'm an Indian, and I'm going to get some turkey feathers for my hair." And off sped the "Tom-boy," practicing a war whoop as she ran.

"I hope she won't frighten the little children out of their wits," said Molly to herself, looking anxiously toward the hilltop.

It was a beautiful golden afternoon in late winter. Up in Cosy house Jess was a long time explaining the game of "Early Settlers Attacked by Indians" to the younger ones.

Tommy was to be the "Early Settler," and Donald, in a white apron and a big paper cap, his wife. Their names were Mr. and Mrs. John Smith. Davie was their little boy, and Virginia Helen the baby, as a matter of course. The "settlers" were to be peacefully lying in their little bunks, or beds, when Jess and Bob, as wild Indians, were to attack the hut and "tommyhawk" the entire family with gilt paper hatchets. The children all thought this a wonderful game, and promised to scream loudly when the attack began ,and to fall on their knees begging for mercy, just as "early settlers" always did—in pictures, you know. The little boys were delighted with their parts, but then they had not seen the costumes in which the Indians themselves intended to appear.

The nicest part of playing "Early Settlers" was the eating of provisions prepared by Jess. The round middles of the doughnuts (which, as you may know, my dears, are especially cut out for little boys) had been set apart for them; also some red apples, and a pile of brown sugar.

The Indians were so long making ready to attack that the provisions were all gone, and the "Early Settlers" had almost forgotten their parts, and were playing outdoors, when the first war whoop was heard. It sounded very horrible, and Tommy and Donald instantly ran into the log house, shut the green door, and flung themselves into their bunks heels over head, while Davie crouched in the fireplace with his arms about Freckles' soft neck. And so they waited the attack.

"Whee-oop! Whee-oop!" began the attacking Indians, pounding fiercely on the green door with their hatchets, only pretending they couldn't get in, for the door was on a crack.

"Ki-yi! Ki-yi Whee-oop! Whee-oop!" next shouted Bob and Jess together, knocking loudly against the side of the house, and making a tremendous racket with a policeman's rattle which they carried.

"We'll climb in at the windows and surprise them," whispered Jess to Bob, as she prepared for another war-whoop. And then they both ran around the little house, and jumped up at the windows.

Indian that she was, Jess was not quite prepared for the yell of fright and anguish which arose from the interior of the hut as she made her appearance. Surely, Davie was doing his part almost too well; and his shrieks awoke Virginia Helen, too, whose cries had not been counted upon. As for Donald and Tommy, they forgot their parts completely. They stood as dumb as if they had swallowed their tongues before Jess, who appeared to them in full Indian regalia, her hair drawn up in a wisp over her head, adorned with all the turkey's best tail feathers, her face outlined in purple stripes, and plenty of black paint under her eyes.

While Jess had been getting in at one window, Bob, who was very much in earnest, had stormed and taken the other, and, notwithstanding his screams (which he regarded as part of the play), was scalping his brother in the corner with graceful sweeps of his home-made tomahawk, only calling upon him to scream louder. Freckles, who didn't understand at all, now began to bark loudly.

The noise and cries soon became so loud and so perfect that Mrs. Love and Molly started up the hill in real affright to find out what was the matter. And when they arrived at the door of Cosy house they found two Indians, with most comical looks of astonishment on their mottled faces, striving to appease Davy and the baby, who were crying violently now, and, there was no doubt, in real earnest.

Jess tried hard to explain. "Why mother," said she, waving one purple hand in despair, and replacing a feather which was inclined to dangle over one ear, "the children don't play fair at all. They've forgotten their parts, and they think we're real Injuns. Even the baby doesn't know me!"

Mrs. Love could hardly keep from laughing at the mixture of paint and chagrin on Jessie's brilliantly colored face; but Molly spoke up:

"Well, I shouldn't think they would know you!" snapped she. "You wouldn't know yourself if you had a looking glass. I wouldn't have known

you myself, with a purple face and a green-striped mouth, and one black eye and one blue one, and those yellow trousers on, and all those feathers sticking out over your ears. Why, you're enough to frighten the dog!" And Molly grabbed the baby and started off for the house in disgust.

"Pooh! They're all babies. They don't know anythin' 'bout Injuns," said Bobbie, contemptuously. "Let's go out in the street and scare the horses," he added, looking down admiringly at his legs, which were elaborately trimmed with chicken feathers and little bells. But Mrs. Love would not allow any more wild Indian exhibitions that day, and so Jess and Bob went sadly home to wash their faces and dress for tea.

"He didn't want to be tommy-talked," explained Donald to Mrs. Love.

"He's a 'fraid cat,' he is!" declared Tommy, pointing to the toddling Davie.

"Where were you, then, when the Indians came?" asked Mrs. Love of the two little boys. "Weren't you afraid, too ,Tommy?"

"No, indeed!" replied the brave Tommy, promptly, adding, regardless of grammar: "Me and Donald was up the tree outside. We wasn't afraid."

And Mrs. Love smiled ,and said softly to herself: "I wonder what those children will be doing next?"—People's Home Journal.

About the House

AN old friend who is always cheerful although many burdens have fallen on her shoulders, one day handed me the following lines with the simple comment, "these words helped me, perhaps they may help others."

God broke our years to hours and days
That hour by hour and day by day,
Just going on a little way,
We might be able all along
To keep ourselves heartwhole and strong.
Should all the weight of life
Be laid across our shoulders, and the future, rife
With woe and struggle, meet us face to face
At just one place,
We could not onward go;
Our feet would stop, and so
God lays a little on us every day.
And never, I believe, on all the way
Will burdens bear so deep
Or pathways bear so steep
But we can forward go if, by God's power,
We only bear the burden of the hour.

* * *

It is said that the most famous recipe in Kansas is Mrs. John James Ingall's recipe for blackberry jam. Every summer it is published in scores of Kansas papers and "B. J." as Senator Ingalls is said to have called it, is a favorite dainty in many Kansas households. If the directions are carefully followed the jam will be first-class.

Take two gallons of blackberries, carefully pick them over, and thoroughly wash in cold water. Drain and put in a preserving kettle and pour over one quart of water. [Note.—Some cooks use only one pint of water.] Cook until soft, being careful they do not burn. Stir at intervals with a wooden spoon to break up the fruit. Remove from the fire and press all through a wire sieve into a large stone or earthen jar. Stir the pulp thoroughly. Take one quart and put into a kettle, and, when it boils, add one quart granulated sugar previously heated in the oven. [Note.—Some cooks prefer less sugar.] Bring it to a boil and let it cook rapidly 15 minutes, shaking the kettle from time to time so it will not stick to the bottom. When it begins to jelly, it is done. This can be tested by dipping a silver spoon in cold water, then take up a little hot jam and drop it slowly in a saucer. If it hardens it is done. One accustomed to preparing it generally can tell by the peculiar sound of the bubbles as they break. Pour into small, large-mouth jars. When cold, seal tightly and place in a dry closet. Paraffine covers it nicely. Never try to make more than a quart at a time. It takes no longer to prepare it this way, and is in every way better.

* * *

An exchange says that a good story is just as interesting as a piece of news, and then goes on to tell of a "Colored gun man" in darkest Missouri who was struggling homeward in the pale moonlight on the night before Christmas. Over his shoulder was a gigantic turkey. As the outraged fowl made vain efforts to free himself his captor said:

"Lookee hyar! Wot's de use ob yo' all kickin'? Among such a large cullu'd population yo' ought to know dat it am only a question ob which nigger gits you'!"

* * *

Here is another from Printer's Ink:

Tommy ,very sleepy, was saying his prayers. "Now I lay me down to sleep," he began "I pray the Lord my soul to keep."

"If,' 'his mother prompted.

"If he hollers, let him go, eny, meny, miny, mo!"—Elbepe.

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That is guaranteed to give perfect satisfaction or your money promptly and cheerfully refunded?
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Write For Special Catalogue Department M.

San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, June 2, 1909.

Butter.

Another advance in butter is noted this week. Market is firm at the advance.

Produce Exchange wholesale quotations are as follows with actual selling price to the trade 2½c advance on Extras.

Creamery per roll .....52½@55
Cooking 22½

Cheese.

Southern California Anchor 18
Northern fresh 15½
Anchor Young America 18
Domestic Swiss .....16@17
Imported Swiss 30

Eggs and Poultry.

Extra selected are commanding 30 cents or an increase of 1 cent a doz. Market is firm.

Paying price f. o. b. L. A. are:
Eggs .....28@30
Case count buying price .....24½@25

Dealers pay for live stock f. o. b. L. A.:
Hens per pound .....13@15
Stags and old roosters.....8
Fryers 2¼ to 2¾ lbs 23
Broilers 1½ to 2 lbs.....20
Broilers 2 lb 30
Roasters 3 lbs and up.....23
Turkeys 22
Geese 14
Ducks 14
Squabs .....1.25@1.75

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs from 175 to 200 pounds 7¼
Prime steers .....4¼@4½
Heifers .....3½@3¾
Calves per pound 5
Sheep ewes per head .....3.75@4.00
Lambs per head .....3.25@3.50
Wethers .....4.50@5.00

Potatoes.

Wholesale prices are:

Sweets per box .....2.25@2.50
New per box .....1.00@1.10
Early Rose local .....2.50@2.75
Early Rose northern .....2.50@2.75
Burbanks local 2.25
Lompocs .....2.60@2.75
Highland Fancy 2.25
Oregons Burbanks 2.60
Utah's .....1.90@2.00

Onions.

Wholesale quotations:

Northern Aust. Brown 3.50
Imperial Bermudas per crate 1.00@1.15
Texas Bermudas per crate ..1.00@1.10
Coachellas crates .....90@1.00
Catchellas sacks .....1.35@1.50
White wax per crate .....1.00@1.10

Vegetables.

Artichokes locals .....40@75
Asparagus .....5@7
Beets per sk .....90@1.00
Beans string .....4@6
Beans wax .....7@9
Cabbages per sack 65
Celery per crate .....6.00@6.50
Chili per lb 25
Chili dried .....9@10
Cauliflower per crate .....1.50@1.75
Carrots per sk .....1.00@1.25
Egg plant .....8@12
Green onions per doz bunches ..15@25
Horseradish per lb 12
Summer squash .....50@70
Leeks .....40@50
Lettuce choice .....50@75
Mushrooms per basket 3.00
Oyster plant 50
Okra per lb 40
Peas per lb .....3@5
Parsley doz .....20@40
Parsnips .....15@20
Rhubarb Northern per box ..1.75@2.00
Rhubarb Crimson Winter ....75@1.00
Radishes per doz .....15@20
Spinach per doz .....15@20
Turnips sk .....65@75
Tomatoes crate .....2.00@2.25

Citrus Fruits.

Navels .....1.25@2.75
Tangerines halves .....1.60@1.75
Grapefruit .....1.50@2.75
Lemons .....1.00@2.25
Unpacked .....1.00@1.35

Fresh Fruits.

Wholesale prices on the market are:

Apricots per crate 1.50
New apples 50
Cherries white .....35@65
Cherries black 75
Cherries per lb .....6@8
Cherries, white bulk .....3@5
Cantaloupes $3.00
Aligator Pears per doz .....3.50@4.00
Custard apples per lb .....10@15
Guavas .....4@6
Pineapples per lb 10
Loquats per lb .....2@3½
Pears box .....1.00@1.50
Raspberries .....3@4
Strawberries .....3@7
Blackberries .....2½@4
Gooseberries .....4@7
Loganberries .....3@4
Currants 2.00
Figs .....1.00@1.25

Dried Fruits.

Wholesale prices are:

Apricots .....10@12
Evap apples fy per lb 8½
Figs loose 5
Peaches .....6@8
Pears 9
Plums pitted .....8@9
Nectarines .....7½@9
Prunes .....7@8

RAISINS—Muscatels, 2-crown, loose, 50-lb. boxes, lb., 3½c; do., 3-crown, 4c; do., 4-crown 5c; sultanas, bleached, lb., 9c; do., unbleached, 3½@4c; new seeded raisins, 16-oz. packages, 6c; do., 12-oz. packages, 5c.

Beans Dried.

Wholesale prices are:

Pink No. 1 .....3.75
Limas per ctl 4.50
Black eyes .....3.75@4.00
Lady Washington 5.75
Small White 6.50
Black eyes 3.50
Garvanzas 4.50

Nuts.

Almonds IXL per lb 15
Pecans polished .....15@17
Peanuts California 5
Walnuts No. 1.....12@13
Walnuts No. 2 .....9@10

Honey.

Wholesale quotations:

Extracted water white 8
Extracted Light Amber .....6½@7
Comb Water White 16
Comb white 15
Beeswax 25

Hay.

Prices paid to producers f. o. b. Los Angeles are as follows:

New Barley hay 13.00
New alfalfa .....12.50@13.50
Wheat hay 14.00
Tame oat 16.00

Grains.

Wholesale selling price f. o. b., Los Angeles:

Wheat new per ctl .....2.30@2.35
Kaffir corn 1.85
Corn Eastern bulk 1.80
Egyptain corn 1.85
White oats 2.25
Seed Rye 2.00

Feed Stuff.

Wholesale selling price f. o. b., Los Angeles:

Cracked corn 1.85
Shorts 1.95
Bran 1.70
Cocoanut cake 1.35
Cocoanut meal 1.85
Cottonseed meal 1.25
Oil cake meal 2.50
Feed meal 1.90
Cracked wheat 2.50
Rolled Barley 1.70

San Francisco Markets

San Francisco, June 1, 1909.

Butter.

Butter has declined a half cent but under present conditions cannot remain long at the lower price.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras per lb 25½
California firsts 25
California seconds 24½

Cheese.

California flats .....11½@13½
Firsts 12
Cal Young America fy .....15½@16½
Young American Oregon fy 16½

Eggs and Poultry.

Eggs have advanced during the week a cent and a half and now stand at 26½ for extras.

Official quotations of the S. F. Wholesale Dairy & Produce Ex. are:

Fresh ranch extras .....23@26½
Hens per doz .....5.00@10.00
Roosters .....5.00@10.00
Fryers per doz .....6.00@7.00
Geese per pair .....2.00@2.50
Goslings per pair .....1.75@2.00
Ducks young .....5.00@8.00
Pigeons young .....1.00@2.00

Live Stock.

San Francisco prices gross weight:

Steers .....4@4¾
Cows and heifers .....3¼@3¾
Hogs 100 to 140 .....4½@7¼
Calves per lb .....4@5¼
Lambs yearlings 5
Milk lambs 5½
Wethers No 1 unshorn 4¾
Ewes No 1 4

Potatoes.

Wholesale market quotations:

River white fy sacks .....1.95@2.10
Early Rose .....1.85@2.00
River Burbanks .....1.85@2.10
Salinas Burbanks .....2.40@2.47½
Sweets per crate .....1.50@2.00
Oregons .....2.25@2.50
New potatoes white .....3@3½

Vegetables.

Wholesale quotations:

Asparagus per box .....1.60@1.75
Bell peppers per basket .....75@1.00
Brussels sprouts per lb .....3@5
Cabbage per box .....2.00@2.25
Cauliflower doz .....75@1.00
Carrots per sk .....65@75
Celery per doz .....40@60
Cucumbers per doz .....1.00@1.75
Chili peppers per lb .....10@12½
Egg plant per lb .....15@20
Green peas per sk .....1.50@2.50
Mushrooms per lb .....12½@25
Squash per box .....65@85
Onions green per box .....50@60
Rhubarb per box for bay .....75@1.25
String beans .....3@5
Tomatoes box Mexicans .....1.25@1.50
Wax Beans .....4@6

Onions.

Australian Brown 4.00
Texas Bermudas per crate ...1.00@1.50
New green per box 65
New red per sk .....75@85

Citrus Fruits.

Navels .....1.25@2.50
Grapefruit seedless .....2.50@2.75
Lemons .....1.25@2.50
Limes .....4.50@5.00
Limes Cal sm box .....1.00@1.25

Fresh Fruits.

Apricots box .....1.00@1.50
Apples new green .....50@75
Bellflowers No 2 .....60@1.00
Cherries Black Tartarian .....40@65
Cherries loose black per lb.....3@5½
do white .....2@3½
Cherries Royal Anne .....50@65
Figs blk box .....1.50@1.75
Strawberries per crate .....60@75
Malindas per chest .....3.50@4.50
Cherry plums per box .....75@1.00
Peaches per box .....1.00@1.25
Longworth per chest .....4.00@7.00
Pineapples per doz .....3.00@6.00
Raspberries per crate .....1.00@1.25
Gooseberries per drawer .....25@50
Logans per chest .....3.00@5.00
Blackberries dbl crate .....60@75
Currants .....35@60

Dried Fruits.

Prunes 4-size basis 2½
Santa Clara 2¾
½c premium for larger sizes
Apricots per lb; Choice 8½; fancy 10½@11.
Peaches—Choice ..4¾; fancy ..6@7½
Apples evap .....5@7½
Pears .....5@8½
Figs .....2½@4
Nectarines .....5@6
Pitted Plums .....7@8

RAISINS—1908 crop, f. o. b.: Fancy Seeded No. 16, cartons, 4½c; do, No. 12, 3¾c; do, Choice, No. 16, 4c; do, Choice, No. 12, 3⅜c. 50-lb. bxs: Loose Muscatels, Standard, 4-crown, 4c; 3-crown, 3c; 2-crown 2½c; Seedless Thompson, unbleached, 3½c; Seedless Sultanas, unbleached, 2¾c; Dried Grapes, 2c; London Layers, clusters, 6-crown, $3; 2-crown, 90c; 3-crown, $1; 4-crown, $1.50; 5-crown, $2.50.

Nuts.

Walnuts soft shell .....7@12
Hard shell .....6@8½
Ne Plus Ultra 10½
Almonds Nonp 11½
Pecans .....15@17
Chestnuts .....7@9
Peanuts .....5@6
Pine nuts .....22½@25

Beans Dried.

Limas .....4.10@4.20
Pink .....3.15@3.30
Small white .....6.00@6.25
Large white .....5.00@5.25
Black eyes .....3.25@3.50
Red kidneys .....3.50@3.75
Garvanzas .....1.75@4.00
Bayo .....5.25@5.40
Horse beans 2.00
Cranberry .....4.25@4.50

Hops.

Hops 1908 crop .....6@10
Old crop .....3@4½
1909 crop contracted for at .....9@11

Honey.

White comb .....11@12½
Light Amber .....9@10
Extracted W W .....7@8
Extacted light amber .....6@7
Beeswax No 1 per lb .....28@30
Beeswax No 2 per lb .....23@25

Hay.

Scott & Magner say: General trade in this city is very quiet, and at present we do not look for any increase in conditions until a little later on in the season. Consumers here are buying sparingly, as the general feeling is that prices that are at present being asked are above the basis the situation justifies on the new crop hay.

At the present writing conditions are unsatisfactory, the market is decidedly tender, and definitely weak.

Alfalfa hay continues to arrive in very small quantities, and as the demand is light, it is well that this condition prevails at this time. Prices are somewhat indefinite under these circumstances.

There has been very little hay shipped for Export recently, and the demand in this direction has been particularly light for some time past.

We quote the general range of prices on today's market as follows:

Choice wheat hay .....22.00@24.00
No. 1 wheat or wheat & oat 20.00@21.00
No 2 wheat or wheat & oat 17.00@19.00
Choice tame oat .....19.00@21.00
Other tame oat .....17.50@19.00
New crop wild .....13.00@16.00
Wild oat .....15.00@19.00
Stock hay .....7.00@10.00
Alaflfa .....13.00@17.00
Straw .....60@85

Grains.

Wheat No 1 .....2.10@2.11
Barley .....1.55@1.62½
Barley common to fair .....1.45@1.55
Oats white 2.20
Oats gray .....2.05@2.15
Rye new crop .....1.80@1.85
Corn Egyptain .....1.60@1.65
Corn Cal sm round .....1.80@1.85
Alfalfa seed, Cal .....16@18
Mustard yellow .....5¾@6
Mustard brown .....3¾@4½
Millet .....2½@
Broom corn seed per ton 23.50

Feed Stuff.

Bran per ton .....29.00@30.00
Feed cornmeal per ton ....37.00@38.00
Cracked corn per ton .....38.00@39.00
Rolled barley per ton ....32.00@33.00
Rolled oats per ton .....42.00@43.00
Oil cake meal per ton .....38.50@40.00
Cocoanut cake per ton .....25.00@26.00
Middlings .....33.00@35.00
Mixed feed per ton .....28.00@32.50
Shorts .....31.00@32.50

Deciduous Market

Sacramento, Cal., May 29, 1909.

The California deciduous season opened April 22nd, when the first boxes of cherries were shipped by express. The first box sold in Philadelphia realized $31 and New York $21.

The first carload of cherries sold in Chicago, May 17th at an average of $2.77 per box for all varieties. The cherry market has held up exceptionally well, and high values have been realized up to date. The market yesterday was as follows: Chicago, Tartarians $1.15 to $2.75, Royal Annes $1.85 to $2.25, Biggereau $1.35 to $2.10, Governor Wood 90c to $1.55, Rockport $1.25 to $2.75, Chapman $1.65. A large percentage of the Placer County output of Tartarians has been shipped by express to various markets in the East and North, and has averaged f. o. b. $1.25 to $1.50. The crop of Tartarians in this part of the State is now picked and growers are receiving some very handsome returns at the present time for this variety. Royal Annes and Black Oregons are coming in quite freely, and they are going forward in iced cars to the East.

The first crate of Pringle Apricots was shipped May 15th and sold in Chicago a few days ago at the handsome price of $3.00 per crate. There are now en route small quantities of Royal, Newcastle and Seedling Cots Alexander Peaches and Cherry Plums.

The first mixed car of deciduous fruits is expected to leave Vacaville sometime next week. This car will contain Apricats, Cherries, Peaches and possibly a few Plums. The same will be sold in either New York or Chicago.

The deciduous outlook at the present time is exceptionally good, inasmuch as the crops in the East in practically every state are reported light and the crops in California are light also consequently very good values should be realized for all of our deciduous fruits.—T. C. Tucker.

Citrus Market

Los Angeles, June 2, 1909.

The orange market is materially improving, owing, in part at least, to the shrinkage in shipments. Navels are practically cleaned up. The few that remain will be gone in the next week or ten days. Seedlings, Mikes and sweets may remain a few days longer, though the trees are rapidly being cleared of all of them.

Valencias are now going forward in quantity and commanding in the neighborhood of $1.75 to $2.00 f. o. b. The outlook for a good return for the Valencias through the summer months is favorable.

Lemons are still going to the bad, at least as to the lower grade stock. First grade goods are commanding a fair price with ready sale. Poor keepers are still begging and many of them hauled to the "wash."

Shipments :

Total shipments to date since Nov. 1 aggregate 26,974 cars of which 23,541 were oranges, 3,432 cars lemons. To this date last year 23,302 cars of which 20,569 were oranges 2,733 lemons.

NEW YORK, May 28.—Twenty-seven cars oranges and one car lemons sold

he market is steady, prices unchanged. Weather clear and warm.

NAVELS—	Average.
hinook, fy Hawarden CFA iced	1.95
rch ch Hawarden CFA iced	1.70
ictoria AH Ex	2.75
oyal Knight RH Ex	2.40
en Hur RH Ex	2.45
ruth Riv Ex Riv	2.50
a Paloma Riv Ex Riv	2.30
uail OK Ex	2.10
ed Globe Riv Ex Riv	2.05
strich SB Ex	2.10
Vinner SB Ex	1.75
ed C Covina Ex	2.50
ovina Covina Ft Ex	2.10
omer QC Ex	2.25
amily QC Ex	2.00
oyote OK Ex	1.95
ed Globe Riv Ex Riv	1.80
ummingbird Riv Ex	2.30
utterfly Riv Ex Covina	2.00
eal Covina Ft Ex	1.65
ointer ACG Ex	1.75
erald xc W American Ft Co	2.20
lephant or OG ash Assn	2.80
lain Ends OG Cash Assn	2.20
oga fy Marino OG Assn	1.95
iger Head xc I L Lyon Sons	2.05
SWEETS—	
ucky sd Tustin Pack Co	1.80
A-One xc or E Peycke Co	1.90
eal sd E Peycke Co	1.55
SEEDLINGS—	
itus Ranch fy San Marino GPA	2.05
iolet OM Ex	2.15
ummingbird Riv Ex	1.90
iverside Riv Ex	1.80
BLOODS—	
outhern Beauties	2.20
ust Rite	1.65
strich	2.50
Vinner	2.05
LEMONS—	
onogram	1.50
ST. MICHAELS—	
onest Pack	2.00
ucky	1.70
urora	2.35
limax	2.10

BOSTON, May 28—Twenty-one cars sold. Weather cloudy. The market is unchanged.

NAVELS—	Average
Colonial SA Ex	1.55
Coyote OK Ex	1.90
Quail OK Ex	2.20
Tiger SB Ex Colton	2.40
Coyote, OOK Ex	2.05
George Washington Riv Ex Riv	2.25
Beulah Riv Ex Riv	1.90
Robusta AH Ex Pachappa	2.65
Orchard or National O Co	2.95
Knight or Ely-Gilmore Ft Co	2.50
W T Michael	1.75
American Beauty	1.55
Black Beauty xf, R H Verrill	1.60
Homegrove S A Ex	2.00
Captain SA Ex	1.85
Queen Bee QC Ex Corona	2.50
Quail OK Ex	2.30
Quail OK Ex	2.10
Martha Washington Riv Ex Riv	2.15
Alta Cresta AH Ex Pachappa	3.15
Quail OK Ex	1.95
Standard sd National O Co	2.50
Gabriella xc Ind Ft o	1.75
La Verne Beauties fy M L Sparks	1.75
La Verne Grove	1.55

PITTSBURG, May 28.—Six cars sold; market is steady on navels, easier on lemons. Weathr, favorable.

NAVELS—	Average
Searchlight SS Ex Orange	1.30
Royal QC Ex Corona	1.45
Royal QC Ex Corona	1.60
Swallow, OK Ex	2.10
LEMONS—	
Setter	70
Pico	1.40

PHILADELPHIA, May 28.—Fourteen cars navels, four mixed cars, two cars seedlings, one car sweets, one car Valencias and two cars lemons sold. Weather warm, cloudy. Market is very much depressed on account of the condition of the fruit. No sale Monday.

NAVELS—	Average.
On Honor Lemongrove Ft GA	1.60
Coyote OK Ex	1.50
Quail OK Ex	2.05
Swallow OK Ex	1.60
King Leo SA Ex	1.80
Sugarloaf Riverside Ex High	2.10
Cluster SA Ex	1.40
King Leo SA Ex	1.75
Plain Ends SA Ex	1.35
Coyote OK Ex	1.70
Cluster SA Ex	1.30
Fruita Riverside Ex High	1.55
Pointer ACG Ex Glendora	1.75
Coyote OK Ex	1.50
Lark OK Ex	2.05
King Leo SA Ex	1.75
Cluster SA Ex	1.45
Victor SA Ex	1.50
Colonial SA Ex	1.40
Sugarloaf Riv Ex High	2.00
SWEETS—	
Pointer	1.50
Hunter	1.25
Sugarloaf	1.50
SEEDLINGS—	
Flamingo or Cal Cit Union	1.75
Mission Bells	1.65
Mission Memories	1.45
Pointer	1.30
Hunter	1.14
Pointer	1.30
Hunter	1.30
LEMONS—	
Hillside Gem	1.90
Palomar	1.60

CINCINNATI, May 28.—Warm. Market steady. Three cars navels, one mixed car navels and lemons and two cars lemons sold.

NAVELS—	Average.
On Honor Lemongrove FGA	1.85
Greyhound SA Ex	1.65
Owl OK Ex	1.90
Sd Growers' Lemongrove FGA	1.40
Captain SA Ex	2.15
Greyhound SA Ex	1.95
LEMONS—	
On Honor	1.55
Sd Growers	1.85
Paradise	1.25
Golf	1.05
Crybaby	1.05
Romeo	65

CLEVELAND, May 28.—Four cars navels, four mixed cars, one car seedlings and two cars lemons sold. Market is advancing.

NAVELS—	Average.
Hawk SA Ex	1.55
King Leo SA Ex	2.30
Cluster SA Ex	1.45
Gold Buckle RH Ex E High	2.45
Riverside Ogs Riv Ex Riverside	1.90
Victor SA Ex	2.30
Cluster SA Ex	1.75
Belt RH Ex E High	2.40
SEEDLINGS—	
Pine Cone	2.10
Arrowhead	1.65
Riverside Oranges budded	1.70
GRAPEFRUIT—	
Tiger	2.20
Floral	1.85
Gold Buckle	2.95
Belt	2.40
LEMONS—	
Belt	2.25
Success	1.25
Our Popular	1.00
Arab	2.65
Duck	1.95

ST. LOUIS, May 28.—Weather favorable. Market strong on navels. Eight cars sold.

NAVELS—	Average.
Owl OK Ex	2.20
Belt RH Ex E High	2.20
Uncle Sam Riv Ex Riverside	2.85
Pond Lily Riv Ex Riverside	2.25
Volunteer SA Ex	2.70
Captain SA Ex	2.25
Owl OK Ex	2.10
Redlands Ogs RH Ex Redlands	1.90
Owl OK Ex	2.10
Plain Ends RH Ex E High	1.80
Fiesta Riv Ex Riverside	2.55
Scroll Riv Ex Riverside	2.15
Greyhound SA Ex	2.35
Swallow OK Ex	2.60
Newsboy RH Ex Redlands	2.1
LEMONS—	
Young America	1.10

THE BEST LIAR.

"Doin' any good?" asked the curious individual on the bridge.

"Any good?" answered the fisherman in the creek below, "Why, I caught forty bass out o' here yesterday."

"Say, do you know who I am?" asked the man on the bridge.

The fisherman replied that he did not.

"Well, I am the county fish and game warden."

The angler, after a moment's thought, exclaimed: "Say, do you know who I am?"

"No," the officer replied.

"Well, I'm the biggest liar in Eastern Indiana," said the crafty angler, with a grin.—Recreation.

LIBERTY POLES.

An interesting feature of the early history of our country was the liberty pole, so dear to the heart of our forefathers, but generally unknown to the present generation.

Liberty poles were for the most part erected after the Revolutionary war was so long an acknowledged fact that the rebels could take time to give it some picturesque expressions.

After the republic was established no more was heard of them until the war of 1812 roused the antagonism of the people, and up went the long shafts again, each a protest against British aggression.

During the whisky insurrection in the last decade of the eighteenth century, when seven counties of Pennsylvania and Virginia arrayed themselves in defiance of the government, liberty poles shot up during the night in the rebellious towns and villages, painted a bright red, as signals of war.

Liberty poles were erected during presidential campaigns in the first part of the last century by both Whigs and Democrats.

They were usually made of white pines, lashed together until they reached a great height. The more fervid the zeal of the party the higher rose the pole. Sailors were often brought out from the seaboard to inland towns to assist in the erection and to rig flags, to the amazement and delight of the boys who knew nothing of ships or seamen.

Mass meetings were held under these poles, which were often regarded with superstitious affection. The blowing down of a pole by a high wind during a campaign chilled the hopes of one party and cheered the others.

These singular emblems of protest against oppression have wholly disappeared of late years throughout the country, except in some remote districts, where old customs are still cherished by rural communities.—Chicago Record-Herald.

The secretary of the Kansas state board of health, in his recent bulletin, says: "The fly is the disseminator of the three D's—Dirt, Diarrhoea and Disease, which often result in the three T's—Typhoid, Tuberculosis and Toxines (ptomaines), and which should teach us to cultivate the three C's—Care, Caution and Cleanliness.

FIGURE IT OUT FOR YOURSELF.

Your dairy cows are milk machines either making money for you, or they are eating their heads off. Would it not pay you to use less of high cost fodders and more sugar-beet-pulp at $1.50 per ton from the silo.

Molasses also is a very cheap and nutritious feed for all kinds of stock. See adv. on page 640.

THE PROBLEM OF SUMMER COOKING.

The weather man says it's going to be a hot summer. This is setting good housewives thinking about the kitchen work—wondering if last summer's toil and worry over a hot stove in a hot kitchen must be all gone through again—wondering if there isn't some way of roasting, toasting, broiling, frying, ironing and washing without having the kitchen like a boiler room.

There is. No longer need the approach of summer be viewed with dread by the woman who keeps house, for science has made is possible for her not only to do all her stove work quicker and better than ever before, but to do it without the kitchen temperature being intensified to any noticeable degree provided she uses a New Perfection Wick Blue Flame Oil Cook-Stove.

The "why" of it is to be found in the wonderful burners of the "New Perfection," which produce intensely hot blue flames, and yet so concentrate the heat that it is not thrown off into the room to cause discomfort. In this way the housewife is enabled to do her kitchen work in comfort—to say nothing of the time saved in lighting—of having no hot fire when the stove is not needed—of being able to get a flame of any required size at will, from one for simmering to one for quick boiling or any other purpose. In fact, while one flame is working away at full blast, the other two can be at medium and low heat—something that cannot be done with a coal or wood stove.

When washing day comes around there is no need for carrying in coal or wood—nor is there any waiting for the fire to get started. The same holds true on ironing day and baking day. All this, added to the splendid results, makes the "New Perfection" an unusually convenient stove to have in the house.

Then there is the cabinet top, which gives the "New Perfection" the appearance of a modern steel range. Its commodious top shelf is extremely useful for warming plates and keeping cooked food hot. Also has two drop shelves on which to stand the teapot and coffee pot. In fact, the "New Perfection" has every convenience—even to bars for towels.

"The "New Perfection" burns ordinary kerosene and effects no small saving in fuel expense in the course of a single season.

Another member of the "New Perfection" family is the Rayo Lamp—an all round house lamp in which illumination by means of kerosene approaches more nearly perfection than in many expensive and complicated systems of lighting. Its latest type of central draft burner and its beautiful porcelain shade unite in producing a light of great brilliancy—yet so mellow as not to tire the eyes.

Whether used in library, parlor, bedroom or dining-room the Rayo Lamp is never out of place, as it harmonizes with the furnishings of any well kept room.

The New Perfection Wick Blue Flame Oil Cook-Stove and the Rayo Lamp, combining as they do beauty, convenience and low price, should be in every home where real comfort is a consideration.

Auction

50 Fine Dairy Cows, 4 Heifers

One Thoroughbred Holstein Bull

On the Tweedy Ranch three-fourths of a mile west of

RIVERA

On the Whittier electric line. Take Whittier cars to McCampbell Station. Ranch 2 blocks north.

Tuesday, June 8th

Fifty head fine dairy cows, mostly Jerseys and Holsteins, a few fine Durhams, all large fine cattle, young and in good condition, fresh and coming fresh soon; large milkers; in fact, one of the very best dairy herds in Southern California. This entire herd has averaged over $125 per head for the past 12 months, 4 fine Holstein heifers, 1 thoroughbred Holstein bull. Intending purchasers are invited to visit the ranch prior to sale and see this stock milked and tested. Terms: Six months' time will be given on sums over $50 with note and approved security and 7 per cent interest; 3 per cent discount for cash on time sums. This stock must and will be sold on above date without limit or reserve, to close the estate of the late G. W. Tweedy, deceased. Free lunch at noon. James R. Tweedy. RHOADES & RHOADES, Aucrs., Office 830-832 S. Main St. Phones F1259, Main 1259.

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May be arranged so that you may travel by way of

New Orleans and the Sunset Route

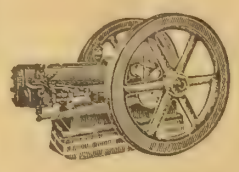
San Francisco and the Ogden Route

Portland and the Shasta Route

Enjoying the balmy air of the South or the cool and bracing air of the North.

Personally conducted excursions every day from Los Angeles via all routes without change to principal eastern points.

Southern Pacific



Information That Is Worth

DOLLARS

To You

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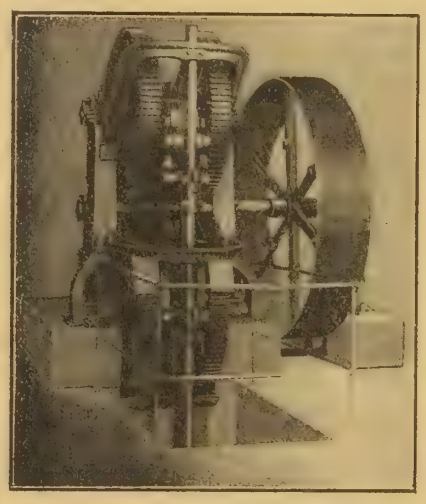
Ask us about the Nix-Frost Crude Oil Gas Producer, the cheapest power on earth using Crude Petroleum as fuel.

Western Gas Engine Company

Northern Branch: San Francisco, Cal. Los Angeles, California

The Smooth Running, Noiseless Pomona Deep Well Pump



It is thirty to fifty per cent more efficient than any centrifugal pump ever made. No high speed bearings to cut out. All breakages and rod troubles eliminated.

This is the only pump you can afford to buy if you consider your own interests. Hundreds of satisfied users testify to this.

Used by the best water companies who know what a good pump is.

Send for a catalog or what is better come to POMONA and let us show you some of these plants in operation.

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POMONA, CALIFORNIA

THE Latest Deep Well Turbine Pump

Guaranteed to deliver from 100 gallons per minute upwards, depending on the diameter and capacity of well, from a depth of 50 to 300 feet below the surface. Can be either belt driven or direct connected to electric motor as occasion requires.

Write for Catalogue 46B.

A deep well pump that has no valves or plungers to wear or get out of order, no gears, consequently no noise or breaking of teeth.

Compact, durable, always primed and ready to operate, constant flow, hence increased capacity of well.

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Byron Jackson Iron Works

Main Office and Works:
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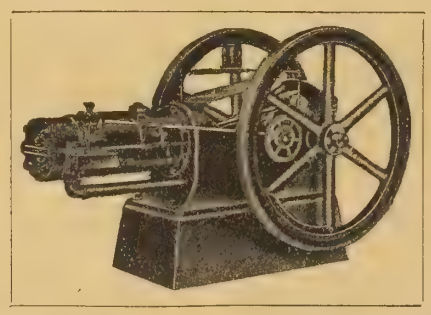
Not too Heavy
Not too Light
But Just Right

Send for Bulletin No. 12.



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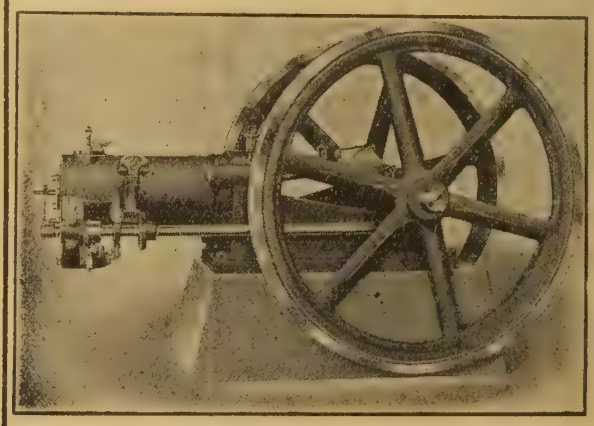

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Write for our catalogue "C".

Doak Gas Engine Co.
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Longer Life! Less Money!

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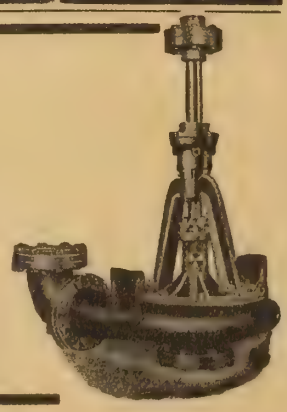

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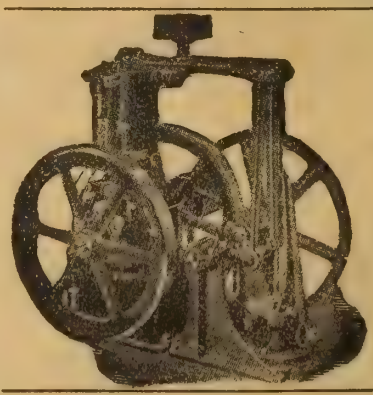

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A High Mountain Valley in the Sacramento National Forest, New Mexico. This is Ideal Grazing Ground for Horses and Cattle, but the Soil is Too Soft for Sheep.

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J. W. Brooks, J. B. Deardorff, J. W. Lamb, J. W. Cook, E. M. D. Smith, C. E. Wells, C. F. Anderson and L. W. Brooks, all of Towner Co., N. D. Together they bought 220 acres of land March 18, and will help to make Kerman the richest colony in California.

Do You Know

That the east is burning up with land hunger? That productive lands are getting scarce and hence higher? Do you know that the people east are just beginning to find out that there are agricultural lands in California and hence that we are on the eve of the greatest emigration movement California has ever experienced.

Do You Know

That as a consequence it behooves all who are landless in California but who hope sometime to enjoy the blessings of a landed home, to get busy and to secure the home before the other fellow gets it, and before prices have advanced to where they are prohibitive? That the easterners who are coming here now are astounded with the agricultural possibilities of "New California?" That they are buying themselves, and then going back home spreading the news of their find, and inducing others to come?

Do You Know

That ere long the man who owns productive land here will discover its value, and will refuse to part with it at several times the amount it now takes to "lift" it, and that when that time comes it will be everlastingly too late for many.

Do You Know

That the value of land depends upon what it will produce per acre? That land on the **Kerman Tract** is today the cheapest land in the United States, value of possible products considered? That this fact is becoming known, and that it is bringing more people here than have ever come to any other similar tract in the same length of time?

Do You Know

That the **Kerman Tract** excels when it comes to water right, quality and lay of soil, natural drainage, location, and in possibilities for fruit and alfalfa growing, dairying and poultry raising? That it is unsurpassed, if equalled, in the things that go to both home and money making? That it is being populated by the very best quality of people, the cream of the country? That undesirable people are not allowed to buy land here and that those who locate are protected against the scourge which has ruined so many otherwise promising colonies in California? If you do not know these things now

We Are Telling You

And we ask the privilege of further informing you. If you are interested we would like nothing better than the chance to satisfy you upon all these points, either by correspondence or by showing you over the tract. We consider it a pleasure to show interested visitors over the colony, and all comers are accorded courteous and considerate treatment. Our circular explains in detail what is here, and it is free for the asking. Write for it, and do it now. But, what is better, come here and satisfy yourself that the **Kerman Tract** is as represented, and that you are not missing something that cannot be retrieved by not taking advantage of this opportunity now. Either write to

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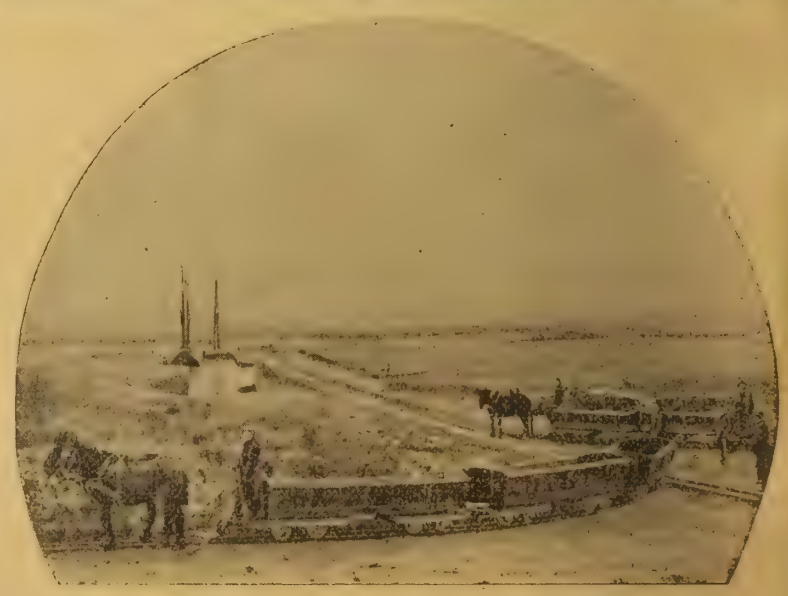

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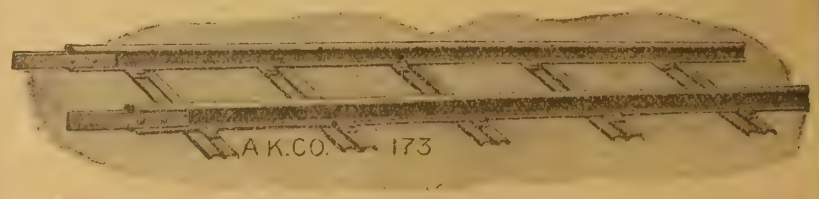

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Our Booklet S. F. 60 gives several suggestions for applying it to the Dairy and Ranch. ***Be sure to write for it.***

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California Cultivator

Vol. XXXII—No. 23 Los Angeles, California, Thursday, June 10, 1909 Subscripiion $1 a Year

The Education of the Farm Boy

Extracts from an Address by George W. Pierce of Davis at the State Farm Picnic Held There May 22d This Year

GIVE the farm boy an equal chance with every other boy of this land. The business he is to follow is of importance enough to entitle him to the best any country can give. All difficulties resolve themselves in the end into a question of education. Knowing how, is the key to the situation. Education today has come to have vastly more importance than the mere establishing and maintaining of schools. It goes into all kinds of work and reaches mature persons as well as the youth. Properly administered it teaches us how to live.

Agriculture is a science. It is an exacting task master. Recent developments along modern lines have been much greater in the city than they have in the country. An exodus from the country to the city has been the result. The country, the source of the real wealth and foundation on which the perpetuity of our nation stands must be made more attractive. Many a boy has been driven from the farm to the city because of the lack of progressive methods. He was ambitious and present farm methods did not outline channels for his ambition. The country lost a gem and the city gained a slave. The material of which a man of worth to his state and nation might have been is swallowed up in that vast seething mass of humanity where the individual is known chiefly by number. The education the boy was given was and is faulty. Now, my farmer friend, do not attempt to shun a responsibility and say you sent your boy to school and thus did your duty. Much of that boy's education was gained on the farm. For much that is faulty in that education, in the school, on the farm or on the streets of the adjacent town you are responsible.

Your boy is being fitted not for the grandest but for the greatest of all callings. He should have a technical education that will quality him for the work. Let us inquire into the magnitude of farm operations as compared with some others and then we may be in better understanding of the question and can answer more intelligently "What should constitute the education of the farm boy?"

According to the census of 1900, the value the farm property of the United States was twenty-one billion dollars. The value of the out put of the farms for 1908 was, in round numbers, eight billion dollars. Can you comprehend it? No, you are lost before you get beyond the returns of your own country. Eight billion dollars not coined but actually created, brought into existence annually by the farmers of America. Should we have experts at the helm?

Compare this with the output of gold in 1907. Eighty-nine million dollars is what the gold mines have to their credit, practically one-hundredth part as much as the farms returned.

* * * * *

The total production of the gold and silver mines since the discovery of America by Columbus has been five billion dollars. According to reliable statistics the cost of all the railroads of the United States, together with all their equipment, has been thirteen billion dollars, and the entire revenue from both freight and passenger traffic was a little over two and one half billion dollars in 1907. So the income of the great transportation companies is less than one-third that of the farms.

These railroads are a small affair when compared with the fertile fields and bursting granaries of the farmers of America. And yet we hear that great political influence is exercised by these same companies; that nominations are dictated, legislatures controlled and legislation advanced or thwarted at their pleasure. They are doing this on one one-half the investment and one-third the income of the farmers of the same territory. What are the farmers doing? Do they initiate measures for the relief of their calling? Do they dictate terms with those who are dependent upon them? Even the resistance of the farmer is feeble in exceptional cases. The bewildering amount of capital invested in farms demands that better farming, better business methods be put into practice. To be attractive farming must not only be profitable but it must be a congenial occupation. If you would have your boy stay on the farm give him an interest in it in some way. Let him have a plat of ground to cultivate, or give him some stock. On the successful management of these make him rely, to some extent, for his spending money. You will then teach him habits of thrift and arouse an interest in the business. Do not fail to make your home attractive by the growth of trees, vines and shrubs. The farm boy has a right to demand this. It is a duty you owe the State.

Let us go farther with with our comparisons. Turning to finance we find that the entire banking capital of the United States, including the National, State, Savings and private banks, and Building and Loan Associations, is less than two billion dollars. This is less than one-tenth part of the capital invested in the farms, yet finance demands the services of our brightest and most highly trained men.

Is there necessity for better methods and larger returns from the farm? Thirty years ago we produced ten bushels of wheat per capita. Increased exports are called for from importing countries and our exports are diminishing. The state recognizes the necessity of educating the farm boy and of educating him along those lines that will make of him the most capable farmer. All education should tend first to the development of a citizen of a high order. On this foundation build the specialist.

Agricultural education as such began about the year 1857, in the University of Michigan. It has extended until today every state and territory of the United States is teaching agriculture. Even distant Hawaii has fallen into line. California has appropriated thus far one-half million dollars for its school of agriculture at Davis, but the success or failure of the institution is in the hands of the farmers.

The nation has recognized the importance of the farmer's calling and some months ago ex-president Roosevelt appointed a Commission on Country Life. In its report it recommends many reforms. Time will not permit an extended review of this valuable document. The organization of farmers for mutual improvement and protection is advocated. "The ultimate need of the open country is the development of community effort and of social resources."

"If the farmer suffers because his business is small, isolated, and unsyndicated, then it is the part of the Government to see that he has a natural opportunity among his fellows and a square deal." I quote once more from this report, this time regarding the liquor question: "The Commission has made no inquiry into intemperance as such, but it is impressed, from the testimony that has accumulated, that drunkenness is often a very serious menace to country life, and that the saloon is an institution that must be banished from at least all country districts and rural towns if our agricultural interests are to develop to the extent to which they are capable. There is nothing local about that. Its application extends from ocean to ocean."

How are the farmers of California faring in this respect? Generous as has been the state in its appropriations for the agricultural education, so far as its protection of the farm youth from the effects of the liquor traffic are concerned, its course has been niggardly. The California farmer because of his lack of effective organization has been victimized. Let me call your attention to that section of the Penal Code of the state that guarantees protection to certain State Institutions.

It is made a misdemeanor to sell, give away, or expose for sale, any intoxicating, vinous or alcoholic liquors within half a mile of the land upon which any state prison is situated. This prohibition cannot affect the convicts as they are denied access to the grog shop. It can only be for the guards. The last Legislature decided that those state prison guards are of more importance to the state than are the farm boys, for it declined to give this University Farm School the same protection it vouchsafed to the prison guard. Farmer friend, how do you like your rating?

It is made a misdemeanor to sell liquor within nineteen hundred feet of any reform school, but sales can be lawfully made within the shadow of this very building. The state subjects the farmer's boy to temptation, and should he fall will confine him in a reformatory, exclude for a distance of nineteen hundred feet the cause of his degradation, and claims to have done its duty to the farmer. Farmers, are you satisfied? Do you believe you have had a square deal?

It is unlawful to sell liquor within one mile of the University of California. This institution is a part of the University of California. Why has this discrimination against the farm boy been made? Stanford University also enjoys freedom from the liquor seller. It is right that it should. In the opinion of the last Legislature the farm boy is not worthy of any protection.

We find that the criminal, the indigent, the political dependent, the young men at the universities, the pages at the legislature, are all protected, while similar protection for the farmer's son at this institution is denied. Farmers, are you going to tamely submit to this injustice? Rather let us rise, as a class, from one end of the state to the other and demand in an emphatic manner that the environments of the farm boy, while obtaining a technical education at the State Farm, have incorporated in them at least

Continued on Page 668.)

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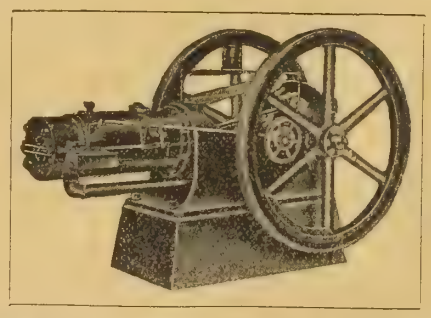

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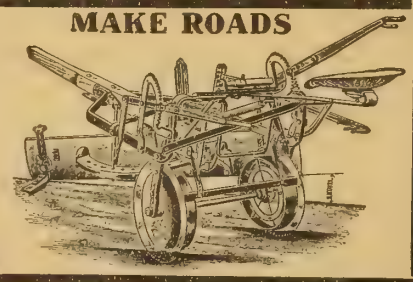

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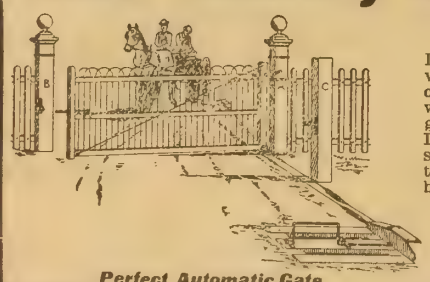

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With the Citrus Growers

RUSSET ORANGES.

A BULLETIN of the Florida Experiment Station gives information as to control of rust mite which was at one time claimed to "benefit oranges" by making them sweeter. Apparently its benefits are not appreciated and an effort is made for its control.

Usually the rust mite does not occur in a grove later than the middle of July. Last year, however, it continued to work vigorously late in the fall, and in some groves as late as into January, causing bright fruit to russet even after it had become ripe. Last spring was also exceptional in regard to the activities of this little pest. Ordinarily it need give us no concern before the middle of May. Many of us, however, were unpleasantly surprised to find that the crop of fruit had been greatly damaged by it before the first of May.

How to Detect Rust Mites.

The rust mite is the smallest animal belonging to the spider-mite family. A single individual can not be seen by the ordinary eye. Nearly every one, however, can detect rust mites by the unaided eye when they occur in countless numbers on citrus fruits, as they are likely to do some time during May. They may be detected on the fruit by a very delicate light coloring, as if the fruit had been dusted from a roadside. When this inconspicuous dusty appearance occurs, one should use the hand lens to determine whether this condition is due to dust which has risen from the soil, or whether it is due to myriads of rust mites on the fruit. If it is found that the rust mite is present, this is a signal for immediate action.

How to Prevent Rusting.

The rust mite like other spider mites, is extremely sensitive to sulphur compounds; consequently we have a cheap remedy in almost all kinds of sulphur mixtures. The most effective, and at the same time, one of the cheapest, is the sulphur spray, made of sulphur and caustic soda. The lime and sulphur mixture is also very effective. Only two quarts of these solutions are usually needed to forty or fifty gallons of water.

A less effective, though somewhat cheaper, method of treating rust mite, is by means of flowers of sulphur. This is a fine powder of brimstone, and may be applied by a powder gun. Before the invention of these powder guns, people treated citrus groves effectively by throwing handfuls of powdered sulphur into the trees. A mixture of flowers of sulphur with about three parts of air-slacked lime is a little more easily applied, and sticks to the leaves better than the sulphur alone. By mixing the lime with the sulphur the workmen are able to see what parts of the trees have been treated, and so to do the work more thoroughly.

The dry insecticides for rust mite have their disadvantages, however, in that they should only be applied when the trees are moist with dew. In a large grove this requires much night work, to which most laborers object.

Other forms of contact insecticide may be used more or less effectively, but should be avoided unless one has in mind the double purpose of destroying rust mite and scale insects at the same time.

Irrigation.

A grove that is kept thoroughly irrigated is not apt to be badly affected by rust mite, since these mites do not endure a moist atmosphere. It is, however, not safe to rely upon an irrigating plant as a preventive of russeting oranges.

STATE INSECTARY.

The work accomplished by the new insectary at Sacramento is as yet hardly pronounced enough to be generally observed, but we believed it has placed the state horticultural commission in a situation to distribute insect friends better than it ever has before. This insectary was dedicated for its uses last December, and since that time the work has been primarily to get insects installed and ready for distribution. Distribution began, of course, months ago, but only last week it was given such a swing by the sending out at one time of 238 colonies of comys fusca which were sent into the apricot and prune sections of the state to dispose of the brown apricot scale. Commissioner Jeffrey says that this one day's shipment was, "the largest shipment of insect parasites perhaps ever made at one time." He further adds, "The success in handling this particular parasite is largely due to the facilities offered by this new insectary. We find everything favorable in this location to the propagation of beneficial insects. We have also received a large shipment of infested material from South Africa, from which we hope to breed out a large number of body parasites for the black scale. These little flies attack the scale in its immature form, and being body parasites should be of great assistance to the Scutellista in maintaining control of the black scale. Perhaps a dozen colonies of these South African parasites have already been liberated in different parts of the state, and we hope within a short time to determine whether they may be established here . We are also sending out a very large number of parasites for the codling moth, and we find no difficulty in keeping the orders for Vedalia filled from our breeding cages. In short the Insectary is doing well, and is absorbing a great deal of attention from all the members of the staff."

BLACK ANTS EAT SCALE?

The following is from a dispatch appearing in papers all over the state, purporting to come from Ukiah, Mendocino county. It would appear that all our citrus growers have to do now is to carry their ants about on a plate of sugar. The scheme surely must be "worth millions:"

Professor Harlan, who is visiting in this city, but hails from the southern part of the State, has discovered that the ordinary black ant will remove the scale from fruit trees without injurying the trees or leaves in the least. He says their work is more complete than that accomplished by spraying or by any of the imported insects.

The ants are captured by placing a plate of sugar near an ant hill, and when covered with ants the plate is put in the forks of the infected tree. The ants leave the sugar and go to work on the scale. As soon as they all leave the sugar the plate is placed at the foot of the tree and as the ants

RED SPIDER

One of the Worst Pests Known to Citrus Trees

Is in abundance in Southern California at this time of the year. The Board of Horticulture recommends Sulphur to combat this pest.

Imperial A Resublimed Flowers of Sulphur

Contains more Sulphurous Acid than any other Sulphur on the market, thus making it superior to all other brands. Write for samples. The price is right.

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All About the Orange and Lemon

Is told in our new book on Citrus Culture, embracing every phase of the subject from the seedling plant to the final disposition of the fruit in the Eastern market. The largest and best book on the subject ever printed —60,000 words, 100 illustrations. You will want a copy, which we will send you for the small sum of 25 cents. Remember we are the largest growers of orange and lemon trees in the world.

THE SAN DIMAS CITRUS NURSERIES

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Hydrated Lime

1 part Taylors Hydrated Lime, 3 parts best Resublimed Flowers Sulphur ..... mixed in a common mortar box

Has given highly satisfactory results in many orange groves, gone over by several different contractors using largest power machines, as a dry spray for the

Red Spider of the Orange

Sulphur alone is too strong and does damage by burning. Hydrated lime remedies this and is the ideal diluent and vehicle for the sulphur—and reduces the cost.

$15.00 a ton net in 100 lb. sacks. Sacks 15c extra.

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come down after having cleaned the tree of scale they again assemble on the sugar, and are thus easily removed to another tree.

Several ranchers in this section have tried the scheme, and estimate that it will be worth millions of dollars to fruit growers.

PAINT POINTERS.

Nothing is superior to linseed oil and white lead as a priming coat.

A priming, or first coat, should be put on as soon as the lumber is exposed to the weather.

All nail holes should be carefully puttied after the first coat is applied.

Three coat work, rightly done, is better than two, because the painter has to flow his paint on too thickly in the latter case.

The writer has used a great deal of both kinds, and prefers a good grade mixed paint to anything the average painter can mix up, because he cannot combine the lead and oil as thoroughly as they do it in the grinding machines at the paint factory.

It pays to hire a painter—not a "Thinks-He-Izzer," but a painter. Anybody can daub paint; it takes experience to properly paint even a woodshed.

Knots should be "killed" with a coating of shellac.

Turpentine deadens the luster of paint, and its excessive use is one cause of peeling.

A good brush saves its cost the first half day.

When using a new brush, dip it into the paint—work the paint all through the bristles—then "spat it out" on a board, and leave it over night—full of paint, remember! This will set the bristles, and keep them from curling. Continue the practice for several days.

Don't let the painter put the second coat on before the first is thoroughly dry. Many a fine house has been spoiled by getting into a hurry right here. A week is short enough time between coats, and two weeks is better.

See to it that the under edges of the clapboards are all painted.

In painting old work, all scaly paint must be removed, and if any spots are bare of paint, these must be covered with a priming coat before an even finishing coat can be secured .

Because of the extra covering quality of good paint, and its better measure per can, such paint is cheaper in dollars and cents than the inferior grades often exploited; besides this, good paint will outwear the poor all the way from 10 to 100 per cent.

The common estimates for amount of paint required to cover a given surface are for new pine lumber. Allowance must be made for work that is old and weather cracked.

Never paint while the surface is damp. A heavy dew or light mist is sufficient to stop work until the bottoms of the clapboards are thoroughly dry.

Do your own figuring—your dealer will help you—and save the profit the painter too often makes from buying more paint than he needs, charging it to you, and using it—again charged—on some other job. There are honest painters—most of them are—and then there are the other kind.

But whether or not you follow any of these suggestions, keep the buildings well painted, partly to save deterioration in their value, partly to advertise the fact that a wide-awake and progressive man lives at your house, partly to enhance the possible selling price of your property.—Farm, Stock and Home.

These Farmers are Building a

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It is the most valuable thing for a community to possess. It puts the doctor, merchant, broker, depot, post office, relatives and friends all within immediate reach. It protects the home and does away with the isolation of farm life that drives the boys and girls to the big cities.

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If you have not, ***cut out this advertisement, write your name and address on the margin and mail it to our nearest house to-day.*** Upon receipt of your address we will send you at once a copy of our Free Bulletin No. 71 on

"How to Build Rural Telephone Lines and their Costs"

We have sold nearly fifty thousand farmers' telephones since March 1st.

The cost is very low where each subscriber helps build the line. Get your family doctor and merchant interested, it helps them and the whole community as well as you.

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The world's oldest and largest telephone manufacturer. There are over 4,000,000 Western Electric Telephones in use in the United States to-day. **Rural Telephones a specialty.**

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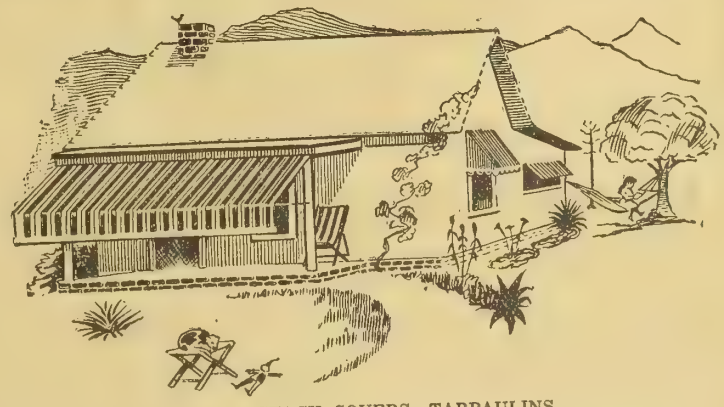

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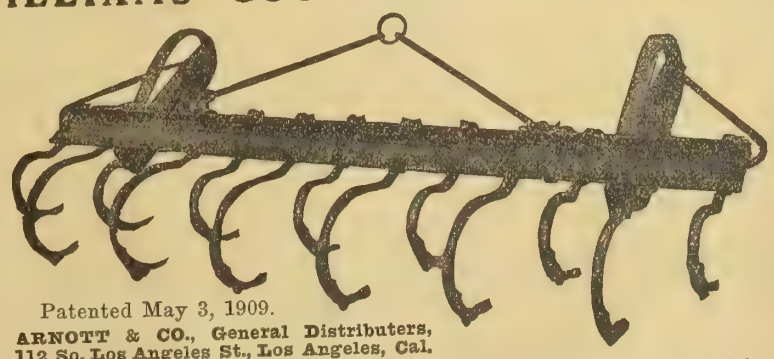

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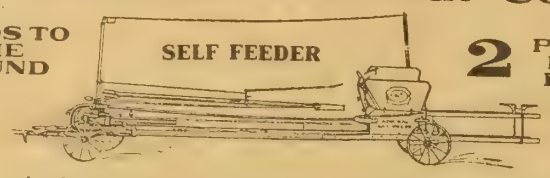

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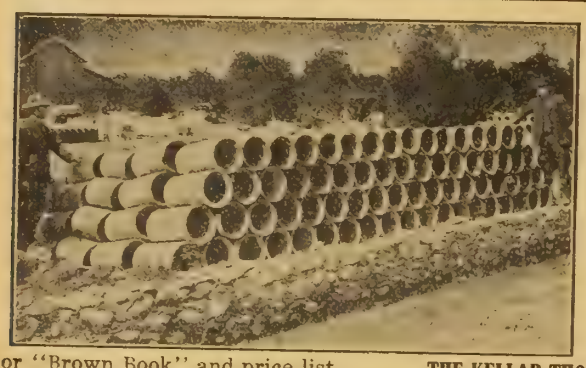

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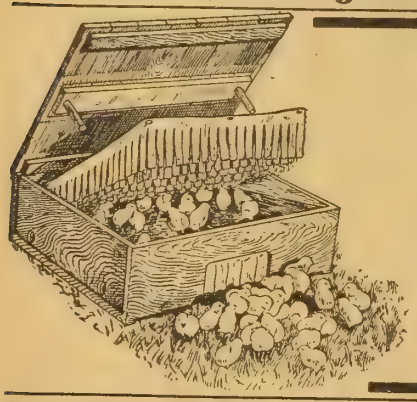

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Deciduous Fruit Culture

By J. W. Mills

PLACE OF NUTS IN THE DIET.

IT HAS been shown by numerous investigations that nuts are rich in protein and fat and that these nutrients can be fairly well assimilated. Nuts being such a concentrated food, their proper place in the diet is a matter for more careful consideration than is the case with many of the ordinary food materials. It must not be forgotten that a certain bulkiness of the diet is conducive to its normal assimilation, and that too concentrated nutriment is often the cause of digestive disturbances. It might be expected, then, that nuts could be most advantageously used in connection with more bulky foods, such as fruits, vegetables, breads, crackers, etc. Most rationally used, they should constitute an integral part of the menu rather than supplement an already abundant meal. Since nuts are so concentrated, eating a considerable quantity out of hand at odd times will mean an over-supply of food if a corresponding reduction is not made in the quantity of other foods eaten during the day. The distress sometimes experienced when nuts are eaten is undoubtedly often due to improper mastication or to overindulgence, since investigations made at the California station indicate clearly that considerable quantities of nuts properly eaten do not cause distress. There is a popular belief that a little salt with nuts prevents the digestive disturbance resulting from eating them. To most persons salt undoubtedly adds to the palatability of the nuts, but no investigations have been found on record which demonstrate any actual improvement in the digestibility of nuts due to salt.

Considering all kinds, nuts are perhaps more often eaten raw than cooked, though some sorts like the peanut, which is not generally considered palatable raw, and the cashew nut, which is poisonous until roasted, are quite generally cooked.

In this country the native chestnut is very commonly eaten raw, and the small native nuts have a distinct and characteristic flavor. The European chestnut, when raw, is lacking in flavor and so is almost universally cooked. The Japanese chestnut is much like the European in its characteristics.

The cocoanut and the almond are important ingredients of many sorts of cakes and confectionery, and often nuts are used in cooking in many ways.

Nuts may be readily used as staple articles of diet, as an ingredient in salads and in soups, as a stuffing for poultry, in the making of desserts,, and in many other ways. Wild turkey stuffed with pecan nuts is a dish popular with old Virginia cooks, just as goose stuffed with chestnuts is prized in Germany. Salted nuts and nuts crystallized in sugar are very common accompaniments of other foods. In general, the nuts rich in protein and fat should be used in combination with carbohydrate foods, as bread, fruit, green vegetables, etc., while such nuts as the chestnut, which do not contain much protein or fat, but are rich in carbohydrates, may be properly combined with meats, milk and cream, eggs, and other foods containing protein and fat.

Since nuts are relished by most persons, are nutritious, and may be readily used by themselves and in various palatable combinations as an integral part of the diet, they have a legitimate place in the menu. Those who, for any reason, wish to live on vegetable foods and dairy products or any form of vegetarian or fruitarian diet will almost inevitably look to nuts, particularly such as the peanut, for a considerable portion of their total nutritive material. A fruit and nut diet may be arranged to furnish sufficient protein, mainly from nuts, to satisfy the requirements of the body, but the consensus of opinion of well-informed physiologists seems to be that such a diet is not generally advisable nor to be recommended for

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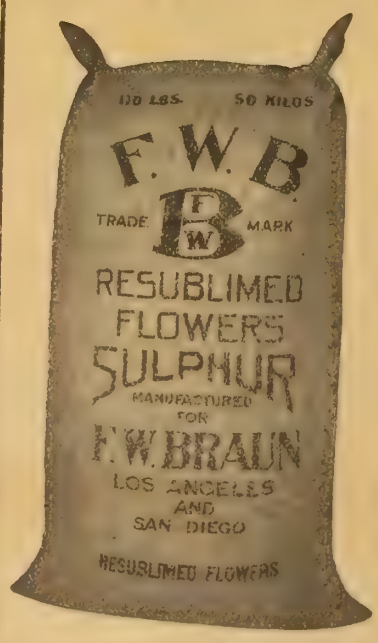

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THE SAVINGS AND LOAN SOCIETY.
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MANY people postpone opening a savings account until they have a round sum, because they feel a hesitation about bringing a small amount to the bank. This bank especially invites small deposits and is daily opening a large number of accounts with one dollar and upwards. Accounts may be opened by mail.

THE OLDEST SAVINGS BANK IN CALIFORNIA

the majority of mankind in place of the more usual mixed diet. It should also be remembered that numerous experiments have shown that the protein from mixed diet has a higher coefficient of digestibility than nut protein, which indicates that the protein of nuts is the less economically utilized by the body. The argument which is so often advanced that primitive man lived on nuts and fruits exclusively and hence his descendants should do so is not generally accepted.

The comparatively high price of many of the edible nuts, particularly when shelled, and the difficulty of cracking some varieties—like pecans, black walnuts, and hickory nuts—and extracting the kernels at home, greatly militate against the freer use of nuts in the household. The consumption of peanuts and English walnuts is perhaps increasing faster than that of some other nuts; but, whatever sort is selected, they should, as already noted, form a part of the diet and not supplement an already sufficient meal.—Bulletin 332 U. S. Dept. Agriculture.

ST. JOHN'S BROD TREE.

The writer has recently visited the famous Escondido Valley in California, where a number of German families who have lately settled there, and whom he met, are on the lookout continually for good locations for friends, says a correspondent in Greens Fruit Grower of N. Y. Not long ago three Germans stopped at the home of Rev. R. L. Vickers near the upper end of the valley, to look over it with an idea of investing. Their attention was called to a handsome tree in the yard, which Mrs. Vickers called a "Palestine tree." The ground beneath it was covered with pods of a dark chocolate color and about five or six inches long by an inch wide and half an inch thick. The Germans instantly recognized it as a locust tree, known and highly prized in Germany as "St. John's Brod Tree." The pods with which the ground was littered and the branches hanging full are the same edible locust pods on which St. John the Baptist subsisted in the wilderness of Judea.

"And the same John had his raiment of camel's hair, and a leathern girdle about his loins; and his meat was locusts and wild honey."—Matt. iii:4.

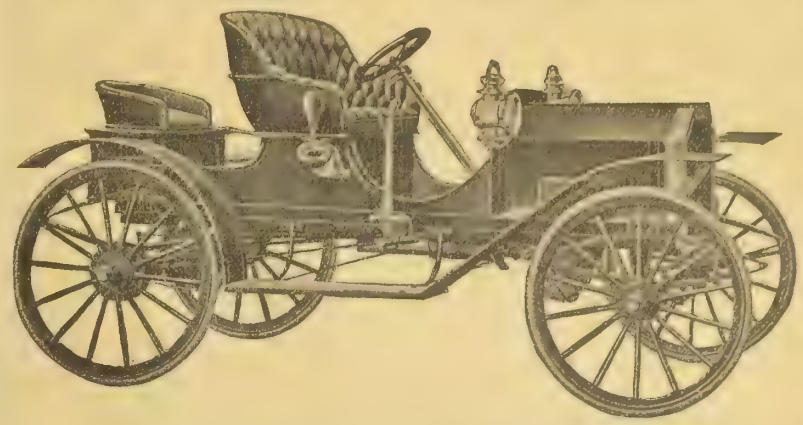
The Germans were delighted, and eagerly filled their pockets and ate the toothsome pods, and with the permission of the owners carried away a large quantity of them. They taste very much like a combination of dried dates and raisins. They will keep for years in this dry condition, and are always ready for eating. The Germans say that the tree is very valuable, and now that seeds can be had, there will be many of them grown in Escondido Valley. The owners of the tree have been using the pods for fuel, but when they know that German families will be glad to get them at a fair price per pound they will likely take better care of them.

A NEW ALMOND.

We recently saw several branches from a new variety of almond discovered by J. C. Oestergard of Burbank and propagated by him at his ranch. Every one of these branches was covered with fruit from tip to base. In fact, so heavily were they loaded that thinning would have to be resorted to in order to save the trees from breaking. Mr. Oestergard says this is not the only season in which they have been heavily loaded with fruit, for every year since they have come into bearing they have exhibited the same tendency. He believes them to be a most valuable new variety of almond which will prove very profitable.

Failure to set fruit is not always due to imperfect fertilization. Efficiency of pollen varies with the conditions of the tree and environment. Some of the main factors which govern the pollination are vigor, variety, health, age, heredity and vitality of the tree. Most all varieties of fruit are improved by cross-fertilization and a large orchard should be planted with one-third of the trees as pollen producers. It is known that the same varieties do not blossom the same time in different parts of the state, but like condition will affect the same varieties similarly. Varieties that are useful for producing pollen must blossom at the same time the desired varieties bloom and the pollen must be potent on that variety. Up to the present time all the work in pollination has shown the following apple varieties to be more or less sterile and should not be planted alone: Northern Spy, Gravenstein, Grimes, Tompkin's King, Red Astrachan, Esopus Spitzenburg, York Imperial, Belleflower, Winesap and Willow Twig. The self-fertile are: Rome Beauty, Jonathan, Ben Davis, Oldenburg, R. I. Greening, Fallawater, Baldwin and Yellow Transparent. The pear varieties considered self-sterile are: Anjou, Bartlett, Bosc, Clairgeau, Clapp, Columbia, Gray Doyenne, Easter, Howell, Idaho, Jones Seedling, Kieffer, Lawrence, Louise, Mt. Vernon, Pound, Sheldon, Superfine and Winter Nellis. Those considered self-fertile are: Buffum, Angouleme, Elizabeth, Flemish Beauty, Le Conte, Seckel, Tyson and White Doyenne.—Field and Farm.

WESTCOTT



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Westcott Tires are solid rubber, held by a steel wire around each edge, next the channel?
Are your roads rough? The four full elliptic, easy springs and the long wheel base make riding easy.
Are there deep ruts in the roads or ridges in the center? The high clearance will let the **Westcott** over them while the wheels stay in the worn track?
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We might ask you more questions, but it's your turn now. Ask us about the **Westcott.**

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who have used our goods once, will always come to us for their fertilizers. We are making a special study of plant life and are therefore in a position to manufacture fertilizers that exactly meet the requirements of each plant. Let us know what you intend to plant, and we will name your special compositions. Write for our new booklet "The Farmers Friend," for 1909.

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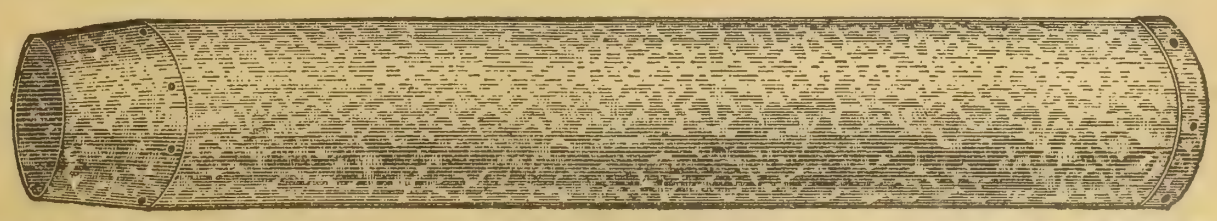

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The **only** way to **Irrigate Alfalfa. Cheaper** than **Flumes.** This is only **one** of our **specialties.** We make **Riveted Water Pipe** in lengths of **ten feet** from **single sheets.** Let us **prove** to you that we make **Pipe** and **Tanks right.** WRITE FOR CATALOGUE.
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Let him show you how a **United States Separator** is made, its perfect mechanical construction, strong, solid, one-piece frame, no bolts to shake loose with wear. Scientific construction of the Separator bowl. You can readily see for yourself how the purchase of a **United States Separator** means economy for you. If you do not know a United States dealer let us send you his name.

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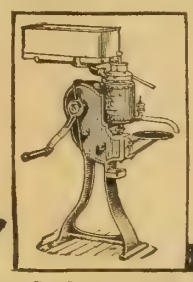

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Fourteen years ago we began selling the **Eagle Hay Press.** During this time we have sold over 600 of these presses, and as near as we can learn there is not a second hand Eagle Press for sale today This, we believe, is the best hay press record of any make sold on the coast. The press, as made today, is, without a doubt, the strongest, best and longest lived press on the market. The question is: Will it pay you to experiment when you know that you can get a tried, and not found wanting, press.

A word in favor of the **Columbia Ann Arbor Belt Power Hay Press:** Three years ago we started to sell these power presses. We now have in the field, and orders written up which will go into the field within the next ten days, 34 of these presses. Last year one of our 17 x 22 steel frame power presses bailed 3800 tons of hay, and averaged a little over 53 tons per day. This is a record that we can assure you no other press has ever made in this territory, or anything near it. If you are a friend to yourself you will thoroughly investigate the power hay presses before placing your order for a press with anyone. We court the closest investigation, as we have the conclusive evidence that we have what you are seeking. You will find us at 110-112 North Los Angeles St.

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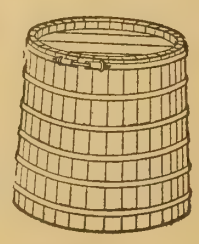
Wine Tank **144-154 Berry St. San Francisco, Cal.** *Water Tank*



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On sale at $1.50 per ton from silo. In use for more than a hundred years, it is conceded to be the ***cheapest*** and ***best*** dairy feed known. Also Molasses equal to corn, pound for pound, $1.50 per barrel.

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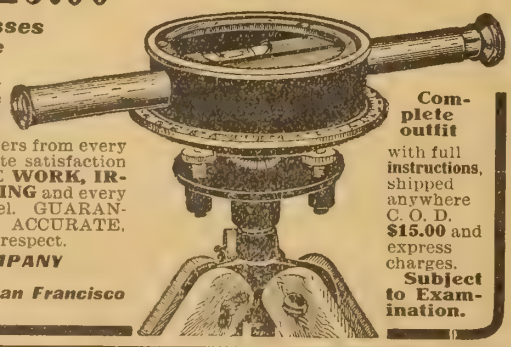

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All our stock comes from the celebrated herd formerly owned by the Pierce Land and Stock Co., the premium herd of Holstein Friesians in California. **Oakwoods Stock Farm Co., Lathrop, Cal**

Pure Bred & Registered

Jersey Cattle—Poland China Hogs
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Large selection. All ages and grades. Correspondence Solicited. Prices Reasonable. Satisfaction Guaranteed.

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By Mrs. Minna E. Sherman

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

BUTTER FROM ONE COW.

TODAY, rather than bother with butter making from the milk of one or two cows, the farmer's wife buys the family butter. There are other things I would rather buy than butter, though I most assuredly do not believe that the farmer's wife should do all the inside work of the home, sew, milk the cow, care for the chickens, and do whatever no one else wishes to do, with the trifling chore of making garden on the side, and, when everything else was done, sewing rags into carpets and making quilts out of the larger pieces. These were the "good old times" when the women stayed at home and grew more and more nervous, and even went mad with the driving push of work all unnecessary to be done. The men never took it so hard, for where was the man who did not find time to hang the reins on the plow and stroll to the fence to listen to the talk of the passer-by? Or when did he not have time to saunter to the store and hear the tattle of the neighborhood? Thank God that today the creamery takes in the milk and the farmer's wife takes in the club! The outlying districts in clubdom are the ones that study Shakespeare and Browning—something as far from the everyday grind as possible. It was an odd experience, when I was chairman of Household Economics in the State Federation of Women's Clubs, to find that the city women with maids were studying household economics while few country clubs were interested at all in the subject.

Cream.

The milk comes into the house warm from the cow, and the portion intended for butter should be poured into its own pan to be left undisturbed by skimming. Set the milk where the temperature is about 60 degrees, and after about eighteen to twenty-four hours, skim the cream off the clabbered milk and stir well into the cream already in the jar. Sometimes a little salt added to this cream will keep down undesirable bitterness. A teaspoonful to a pint of cream will not make the butter too salty if no more is added. The second or third day, or as soon as the cream is thick and slightly acid, it should be churned. In cold weather, to make the cream acid, it may be necessary to warm it by standing the jar in a pan of hot water for a couple of hours until the cream is up to eighty or ninety degrees, then cover and put in a cold place. In ten hours it will be thick enough to churn well.

Churning.

No cream should be added to that being ripened for churning within twelve hours of churning time, as it will not be sufficiently ripened and the butter fat will be lost in the buttermilk. When the butter is the size of small grains of wheat, let off the butter milk and cover the butter with water a few degrees colder than the churning temperature. Let stand while the butter bowl is being scalded and rubbed with dry salt. Rock the churn slightly to separate the grains of butter, and let out the buttermilk between times. Let off the water first added and cover again with water, adding salt at the rate of an ounce and a half to each pound of butter. Rock the churn for half a minute to mix in the salt, then turn it slowly completely over and over to ball the butter into a mass. Turn off the water and gather up the butter with two paddles and put into the butter bowl. Stand away covered for two hours to prevent the butter from being soft and oily. Then work it by compressing to release the excess of water. Butter working is done with caressing little pats rather than by main strength and awkwardness. Kneading bread is good muscle making work and is the craft, while butter working is the art that enriches the bread and must be the work of love to be perfect. Like all true art, however humble, it is the love of making a perfect thing. Art craft work is more enjoyed in the home when it takes the form of making good bread and butter rather than of clumsily tacking together and crookedly glueing furniture which may be made after good models, but distorted into grotesqueness.

Irregular Conditions.

These are vexing in handling the milk of one cow. The cream does not rise properly, or it turns bitter or rancid before churning time. To prevent these conditions it is advisable to go over all the utensils with scalding water and then with cool lime water, turning them upside down to drain dry. The fact is that bacteria are minute and hard to reach and may readily escape what is known as domestic cleanliness, which is far from being laboratory cleanliness. The first thing a woman thinks of is to wipe a pan dry with a towel. That habit must be unlearned, for unless the towel has been baked till it is sterile, it will contain a part of everything it has touched. The first difficulty to be met is quick and complete creaming of the milk. This can be overcome by putting from a pint to a quart of hot water (not boiling, but hot) in the bottom of a pan and standing the milk in it to reach a temperature of not higher than 60 degrees. As the milk cools, the cream comes quickly to the top. This method of raising cream is particularly good when a cow has been in milking some time, or is on dry feed, or in cold weather. Under these last named conditions the cream should be churned at 60 degrees. Thin cream too is churned at this high temperature.—M. E. Sherman.

ORIGIN OF THE RECENT OUTBREAK OF FOOT-AND-MOUTH DISEASE.

The recent outbreak of foot-and-mouth disease in Michigan, New York, Pennsylvania, and Maryland started from calves used in the propagation of smallpox vaccine virus which had been contaminated with the virus of foot-and-mouth disease, and the contaminated strain of vaccine originally came from a foreign country. These are the conclusions from an investigation made jointly by the Bureau of Animal Industry of the Department of Agriculture and the Public Health and Marine-Hospital Service of the Treasury Department, a report of which has just been issued.

Foot-and-mouth disease was dis-

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ABSORBINE, JR., (mankind, $1.00 bottle.) For Strains, Gout, Varicose Veins, Varicocele, Hydrocele, Prostatitis, kills pain.
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Importer and breeder of RED POLLED CATTLE, SHROPSHIRE SHEEP, RAMBOUILLET SHEEP, HORNLESS AMERICAN MERINO SHEEP. Both sexes for sale. Take electric car at Petaluma or Santa Rosa for LIVE OAKS STATION. Address all mail to
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Berkshires--Shorthorns
My Berkshires took 9 First, 6 Second and 4 Third Prizes and both Gold Medals. 50 Head For Sale.
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covered among cattle in Pennsylvania November 10, 1908, and was reported to the Department of Agriculture by the State veterinarian of Pennsylvania. A few days later it was found also in Michigan, New York, and Maryland. In view of the strict quarantine maintained by the Department of Agriculture on imported live stock and the fact that the importation of ruminants from countries where this disease existed was prohibited entirely, the Department considered it highly improbable that the infection was brought in with animals. When, therefore, the disease was traced by inspectors of the Bureau of Animal Industry to calves that had been used for vaccine by a Detroit establishment, and the cases of longest standing were found among these calves, these facts caused Secretary of Agriculture James Wilson and Dr. A. D. Melvin, Chief of the Bureau of Animal Industry, both of whom had gone to Detroit to make a personal investigation of the outbreak, to suspect that the vaccine was contaminated with the virus of foot-and-mouth disease.

The main facts regarding the outbreak as brought out in the report are as follows: The H. K. Mulford Company of Glen Olden, Pa., imported certain smallpox vaccine virus which was contaminated with the infection of foot-and-mouth disease. In May, 1908, some vaccine of this strain was procured by Parke, Davis & Co., of Detroit. Calves used by the latter firm in propagating vaccine, were sent October 16 to the Detroit stock yards and thence on the same day to a farm near Detroit. On October 20 three carloads of cattle from points in Michigan reached the Detroit stock yards and were put into the pens that had been occupied by the vaccine calves four days previously. Some were sold for slaughter at Detroit, while the remainder were shipped to Buffalo and some were reshipped to Danville and Watsontown, Pa., where the disease was first observed some days later. The disease spread to various places in Pennsylvania and New York and to one locality in Maryland.

According to Doctors Mohler and Rosenau, foot-and-mouth disease is primarily and principally a disease of cattle, and affects man only secondarily and casually. Children are occasionally infected by drinking unboiled milk during the periods in which the disease is prevalent in the neighborhood, while persons in charge of diseased animals may become infected through contact with the diseased parts or by milking, slaughtering, or caring for the animals. The disease when communicated to man, however, is very seldom fatal, the affection usually being too slight to come to the notice of the family physician.

As soon as the facts regarding the contamination of vaccine became known, the licenses of the two firms involved were at once suspended, all the suspected vaccine virus on hand was destroyed and that upon the market withdrawn, and other measures of a radical nature were taken. The report commends the intelligent and prompt co-operation of the Mulford Company and Parke, Davis & Co., in accomplishing this end. After an examination of every strain of vaccine upon the market, it is stated that there is now upon the market no vaccine contaminated with the virus of foot-and-mouth disease. Regulations have been formulated with a view to preventing hereafter the propagation of contaminated vaccine virus. No instance of the transmission of foot-and-mouth disease to man through vaccine virus has been recorded, and it is considered doubtful, in view of the tests made, if it is possible to reproduce the disease in him by the cutaneous inoculation commonly used in the process of vaccination.

The recent outbreak of foot-and-mouth disease in live stock has been eradicated after vigorous work by the Bureau of Animal Industry in co-operation with State authorities, involving the expenditure of $300,000 by the Federal Government alone. The quarantine on the last of the infected territory was removed April 24.

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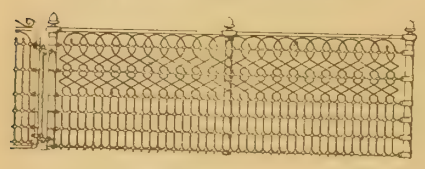

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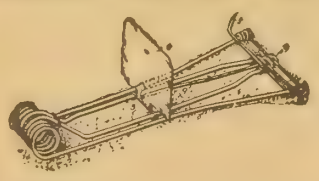

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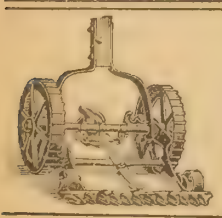

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THIS MONTH.

THE Bermuda or joint grass is being encouraged by this kind of weather, and the careful lawn grower who would keep this pest out must be very watchful. We know that many who are not too fastidious have dropped into the habit of letting Bermuda have entire possession of the lawn, and maintain that it makes a fairly good sward. This is to a certain extent true during the summer, but in the winter when cold weather comes, it turns as brown as the road, though still a heavy sward. There is nothing equal to blue grass, if kept perfectly clear of joint grass.

PRUNING SHADE TREES.

From a paper read before the Minnesota Horticultural Society by Theo. Worth, Supt. of the Minneapolis public parks, the following valuable points are taken:

There should always be a certain desirable object in view when a tree or shrub is pruned. Much of it is done because it is thought customary without any plausible reason to justify that custom. There are two classes of tree butchers—the line men of telephone and other companies, slashing trees in ignorance, and the less willful but equally ignorant tree butcher who has no special object in view when he prunes. The object of this paper is to explain why, when and how pruning should be done.

1. A tree may be pruned to confine its growth within a certain limited space. 2. To afford better passage of sunlight and air through its crown of foliage. 3. Because the tree is affected with a certain disease on account of which it is full of dead branches and twigs. 4. Through damage from storms or other adverse conditions. 5. On account of age and neglect. 6. Because of transplanting.

Some of the branches should be removed altogether, others shortened two-thirds their length and the rest left undisturbed, that their branches may gracefully hide the pruning. Nearly all trees need pruning from time to time for the proper passage of light and air. This means the removal of surplus and dead wood. My experience is that a healthy vigorous tree, under proper care, should receive such pruning once in four years.

Disease, decay and the ravages of insects will undermine the vitality of a tree in a short time. Pruning, by removing affected wood, will help overcome what would ultimately mean death. The same treatment will prolong the life of old, declining trees. The root system through proper cultivation and fertilizers may be in excellent condition, but the upper structure may not give passage to the sustaining powers from below. Such a tree may be given new life and vigor by a timely heavy pruning.

It is almost impossible to transplant a tree without seriously interfering with its roots. It is unreasonable to expect a tree to sustain its upper structure entire when we reduce its life-giving root system. We often see a tree of considerable size planted with roots cut off to almost fit a post hole and not a single branch left. Then again, we see trees planted of 6-inch caliber with root reduced for a 3-foot hole and the top unreduced. Reason must teach all lovers of trees that there must be a certain harmony and proportion of the root and crown system in order to sustain life during the period of transplanting.

All branches or twigs taken out must be cut close to the wrinkle, leaving no stump whatever. The cut must be clean and smooth, and if of any size, should be covered with paint or other preserving compound to prevent decay. In cutting back branches or twigs, the cut should always be close to a twig or eye from which we expect new growth. Leave as few forks as possible. Pruning is best done during the dormant period, but may be done almost any time without serious damage to the tree. The least desirable time is sapping time.

POTTED PLANTS.

New or dry pots should be soaked in water before potting plants, to fill the pores, otherwise they will absorb all the moisture from the soil and dry out the roots. Potted plants growing in exposed locations or in a room with very dry atmosphere should have pot covers or the pot placed inside another to prevent drying out. Some plants stand dry air better than others, among them, palms, aloes, asparagus, sprengeri and plants having broad leathery leaves.

Plant rooted cuttings in 2 and 2½ inch pots and transplant into larger sizes as the roots fill the pot. If planted in a larger pot the earth will become sodden before the roots fill it and the plant will probably die.

To tell when a plant needs repotting, turn over and gently tap the pot till the edges are loosened and contents may be slipped out. If a compact mass of roots has formed about the earth repotting is advisable.

Slips of geranium, foliage plant and many of the more common house and garden plants root readily in water and scores of those little shoots started now will be of good size and ready for out door blooming by spring. A beautiful conventional bed may be made of foliage plants by using a wagon wheel in which to plant.—Farm Stock and Home.

PINK WATSONIAS.

Mr. F. C. Yeomans of Long Beach recently exhibited in this office specimens of Watsonias which were a rarity and of great beauty. Instead of the usual white—the whitest that grows—these were a most decided pink, with all the other beauty of this most beautiful flower. Mr. Yeomans says that these plants are hybrids from the ordinary Watsonia and another variety. He has produced a large number of bulbs.

Chrysanthemums which have not already been planted should be reset at once. The old clumps may be broken apart and the young sets severely cut at the top. It is rather late for golden rod and golden glow, but both may be re-set with care this month. Shasta daisies would have done a little better if re-set a month ago, but they are so hardy that they may be handled almost any month in the year. Among the annuals, plant seeds of stocks, late cosmos, and in fact, any of the fall annuals, including coreopsis, asters, scarlet flax, phlox and mignonette. A succession of gladiolus may be secured by the putting in of a few bulbs this month.

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Small Fruits and Vegetables

THIS MONTH.

THE present warm weather makes it necessary to keep plenty of water at the roots of all plants. Not only must the plants be irrigated reasonably often, but it is advisable to prevent evaporation by dust mulch or good mulch of stable manure, thus keeping the ground cool as well as retaining the moisture.

The planting season is pretty well over, though beans, beets, cabbage plants, corn, melons, potatoes, squash, and tomato plants may still be planted. Of course, where succession of corn, string beans and garden truck is desired, planting may be continued for some time.

This weather will probably fix the cut worms so that we will have but little more trouble with them, but other insects must be fought, and the careful gardener will see that they are subdued. One good way to prevent their spread is by keeping down all weeds and burning all rubbish where they may breed.

BACTERIAL BLIGHT OF THE IRISH POTATO.

Dr. Erwin F. Smith, Bureau of Plant Industry, U. S. Department of Agriculture, has shown that a single species of bacteria, Bacillus solanacearum (Smith), has the power of producing a blight or wilt in a number of plants of the potato family. Among the common ones attacked may be mentioned the Irish potato, tomato, pepper and egg plant. In 1903, Dr. F. L. Stevens and the writer published an account of what appeared to be a bacterial wilt of tobacco in Granville County, North Carolina, to which the name Granville Tobacco Wilt was given. The very recent work of Dr. E. F. Smith confirms this finding and further shows the cause of the disease to be none other than the organism which produces the potato blight. Several common weeds, such as the horse nettle, jimson weed and ground cherry, are also susceptible to the disease.

The blight manifests itself in the vines by a sudden wilting, either of a part or the whole. The stems usually wither, turn yellow and finally black. Young plants appear to contract the disease more readily than old ones. By cutting across the affected stem one can see the characteristic brown or black, woody tissue in which the bacteria are at work. A section across the sick vine just at the surface of the ground, or a little below, will usually show, in addition to the blackened ring, a considerable quantity of a slimy, viscid liquid oozing from the blackened parts, especially if squeezed between the fingers. This is particularly true if the soil is rather moist. Microscopic examination shows this liquid to be swarming with the bacteria, which cause the trouble. It frequently happens in the early stage of the disease that the blackening seen in the cross section of the stem will not appear as a continuous ring, but only as one or two spots. If the vine is slit lengthwise through one of these spots, a blackened streak will usually be found running the whole length of the stem and finally out into the branch or leaf which showed the wilt. The germs appear to live in the soil and gain entrance to the plant through the root or underground stem; and once within the tissue they clog up the water tubes and later on destroy the conducting vessels so that no water can be transported from the soil to the branches and leaves and, as a result, we get the characteristic wilting. The tubers from sick plants show a distinct ring of discolored tissue a short distance from the outside of the potato.

Fungicides are of no value in treating this bacterial disease since the germs are inside of the plant, as well as in the soil, and so far as our present knowledge goes, there is no practical method of sterilizing soil in the field. Prevention is the only remedy. Do not use diseased tubers for planting and avoid planting on potato-sick-land as well as on land which has had diseased tomatoes or egg plants.

This disease must not be confused with the fungus blights, known as early and late blight, which respond quite readily to spraying with Bordeaux mixture. In this case, the organisms which cause the blight grow on the outside of the vines and can be easily reached and destroyed by the spraying mixture.

The symptoms of the blight in the tomato and egg plant are much the same as those for the potato. The vines wilt as if suffering from too hot sun or lack of water. Decay of the stems and branches soon sets in, resulting in the destruction of the plant.

Here, too, spraying has been found useless, for the cause of the disease is deep seated within the tissue and beyond the reach of any germicide. Insects, undoubtedly, play some part in carrying the germs from plant to plant and thus spread the trouble, but the soil seems to be the principal medium of infection. What has been said in connection with the potato may be said about planting tomatoes and egg plants on land that has had diseased specimens of the potato family.

If the disease is not too general, it is possible to control its spread by removing the dead vines with the roots from the field and burning them. It is of utmost importance that the vines be destroyed and not thrown down carelessly to start the disease in a healthy part of the field. Remember that you are dealing with a contagious disease and it is your duty to keep it from spreading. One sick vine in your field this year may mean the loss of half your plants next year. Numerous cases have been reported where soil diseases have been carried from farm to farm, up and down the road by the infected mud that adheres to the wagon wheels. The greatest care should be exercised in plowing and cultivating not to drag sick vines over healthy soil, for by so doing the disease is spread, and what might have been a mild attack is aggravated to such a degree that a general epidemic results. Tools should be thoroughly cleaned before going from an infected field into one free from the disease and, as a further precaution, they should be disinfected by washing or dipping them into a 5 per cent solution of either carbolic acid or copper sulphate, commonly known as blue stone. It is important that the gardener's shoes, as well as those of his horse, be free from clumps of infected soil before going into a new field.

There is a common practice among some farmers of hauling the soil that has washed down a hillside back up onto the shallow places of the farm. If this is done one should be very certain that the hillside from which this soil has washed is free from all plant diseases, for the writer is familiar with several instances where infection has been spread over healthy land in this way.

Where no remedy can be given, it is clear that our only hope of controlling a disease is by preventing its spread. By observing the foregoing suggestions, it is believed that the most serious plant disturbances can be prevented to a great extent, or at least controlled.—Walter G. Sackett, Colorado Agricultural College.

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Contents

GRAZING GROUNDS IN THE NATIONAL FORESTS. Cover.
EDUCATION OF THE FARM BOY, 659.
CITRUS.—Russet Oranges, State Insectary; Black Ants Eat Scale, 660, 661.
DECIDUOUS.—Place of Nuts in Diet; St. John's Brod Tree; New Almonds, 662, 663.
LIVE STOCK AND DAIRY.—Butter from One Cow; Origin of Foot and Mouth Disease, 664, 665.
ORNAMENTAL GARDEN.—This Month; Pruning Shade Thees; Potted Plants; Pink Watsonias, 666.
VEGETABLE GARDEN.—This Month; Bacterial Blight of Irish Potatoes, 667.
EDITORIAL.—Humus; Dried Fruit; Flag Day; Forest Fires; Troubles; Fumigation Report; White Fly, 668.
AGRICULTURAL NOTES OF THE PACIFIC COAST.—Northern, Central, Southern, the Coast, 669.
POULTRY.—Fattening Poultry; Why Hens Lay Eggs Without Shells; Which Shall It Be?; Are Poultry Diseases Increasing? 670, 671.
BEES.—Hives; Cuban Honey, 672.
IRRIGATION AND FORESTRY.—Flood or Furrow Irrigation; California Progressive, 673.
QUERIES.—Fails to Breed; Soiling Crops; Sore on Udder; White Guineas; Peach Leaf Curl, Garlic; Guavas, 674, 675.
VETERINARY.—Broken Bone; More Exercise; Diseased Eyes, 675.
HOUSEHOLD.—The Loom of Life; Barbara's Enterprise; About the House, 676, 677.
PRODUCE MARKET.—Los Angeles Markets; San Francisco Markets; Citrus Markets, 678, 679.

HUMUS.

On the recent demonstration train trips several of the speakers dwelt upon the question of the necessity of humus in California soils to the extent that it became a standing joke with the corps of lecturers on the train that the one great essential to human life was humus. "With all your getting, get humus." There was close rivalry between Prof. Loughridge and Prof. Shaw as to which had the greatest claim to this topic. It became so popular a subject that even the ladies accompanying the train could make remarkably intelligent talks upon the requirements and advantages of humus. In the words of Prof. Loughridge:

"Humus was described as having special properties and these properties were given to the soil in which there is an abundance of the humus. Soils with an abundance of humus were shown to be essential in their texture, highly absorptive of moisture and rich in nitrogen. Soils rich in humus also were capable of holding fertilizers better, of taking mineral matters in the soil and rendering them available for plants. Humus in the soils of Southern California is quite deficient and as a consequence such soils crust over on the surface readily and have other properties which are injurious. Humus is destroyed by constant cultivation of the soil, by fires and by bacteria in the soil. It is restored by a proper system of green manure crops. These turned under the soil deeply and allowed to decay produce after a while the humus but the conditions for such change must be carefully attended to, namely an abundance of moisture, absence of much air and presence of lime. The best crops for green manuring are said to be either the Canadian field pea or common vetch, the latter being especially recommended."

DRIED FRUIT.

One of the largest citrus growers of California, while in the Cultivator office recently, remarked that oranges were doing only fairly well. In fact, the market was rather discouraging. Asked as to reasons, he said; "It is due to the quantity of dried fruit in the market." Of course we at once saw possibilities of conflict between the dried fruit and fresh fruit producers, but it gradually dawned over us that the "dried fruit" to which the citrus grower referred was not California's luscious peaches, apricots, raisins, etc., but "dried oranges."

It cannot be denied that there was much fruit injured during the extreme cold weather of the past season. It was rumored that the injured fruit was all rushed out within a few days after the cold snap so as to get rid of it and make way for the sounder fruit that would come later, but, unfortunately, this was not the case, and all during the season the market has been more or less affected by the pithy, punky, dry "rag" which has been offered in place of the luscious fruit which should have gone forward. This has affected the market on the best grade of fruit. There has been shipped much exceedingly fine fruit this year, and at this time there is much yet to go. Every effort should be made to protect the market for this good fruit, and the most assured way to do this is to cull out all the dry, punky oranges, even if they have been shipped under no-name labels, and so keep them from injuring the entire industry.

FLAG DAY.

Next Monday may not be a legal holiday, but it is a day which is being observed more and more each year. On that date, one hundred and thirty-two years ago, the stars and stripes were first flung to the breeze in New York City. In other words, the day has become known as "Flag Day." In an exchange we note that—"The suggestion for the celebration of this day dates from 1889, when George Bolch, a teacher in the free kindergarten schools of New York City, put his suggestion into practice. That day was chosen, since it was on June 14, 1777, that Congress adopted a resolution providing that "the flag of the thirteen United States shall be thirteen stripes of alternate red and white; with a union of thirteen stars of white in a blue field, representing the new constellation."

That date, then, marks the official birth of the stars and stripes. However, The British Register of 1776 says: "The rebels burned the King's speech, and changed their colors from a plain red ground to a flag with thirteen stripes, as a symbol of their union of thirteen colonies."

The flag was first carried in the battle of Brandywine, September 11, 1777. It was first saluted by foreign navel vessels in a French port when displayed by Paul Jones, flying from the Ranger."

FOREST FIRES.

From reports which have already been coming in of field and forest fires which prevail in nearly every section of the state this season, it is apparent we will have our usual, if not a greater, number of fires to contend with this summer. The dry season will be a long one, and unless great care is exercised on the part of all, great disaster will be visited upon every section. Let everyone constitute himself a committee to educate others in the handling of fire in the forests. Nine-tenths of these fires are the result of pure carelessness on the part of those who simply "didn't think." A few embers left from the camp fire may cause a conflagration which will sweep several thousand acres. Any such carelessness should be promptly reported to the proper authorities and the penalty visited on these careless ones who jeopardize the interests of producers.

TROUBLES.

Once upon a time, so the old fable says, the creator, wearied of the continual lamentations of mankind over their grievous burdens, issued edict permitting each one to bring his burdens, cast them down and choose the burdens of anyone else which he thought to be easier than his own. Great was the rejoicing and quickly did each one avail himself of the opportunity, and with much care choose what seemed to him to be a very light burden. Alas for human judgment, in a short time each one found his newly-chosen burden to be more grievous than his old one, and again the creator was besieged with prayers and petitions until at last, through sympathy, he permitted each one to exchange his new burden for his old. Henceforth each one bore his old burden without complaint, for it had ceased to be grievous because all burdens are grievous only by comparison.

Commenting on the above and comparing the troubles of the Porto Rican fruit growers the P. R. Horticultural News says: "We think we have troubles, very serious troubles, but everywhere I went I found the planters fighting with their troubles and meeting many obstacles in their road to success. In Haiti the rotten government kills all progress and almost absolutely precludes any successful industry. In Cuba it is trade restriction, tariffs, and other troubles similar to our grown. In Florida they have the same difficulties with insects and diseases as we have and some other troubles which we have not, such as drouths, poor soils, and frosts."

California growers have troubles, but they are all bearable, and intelligent fighting them down wins both money and the admiration of others.

FUMIGATION REPORT.

The first report of fumigation investigations in California has been published in bulletin form by the U. S. Department of Agriculture and will be mailed in a very short time. It is the report of an extensive series of investigations conducted by Messrs. Woglum and Maskew during the past two years. This will be looked forward to with interest on the part of citrus growers who have already been greatly benefited by the investigations of these two men. The Cultivator has been granted the courtesy of reproducing some of the charts which have been made as a result of these investigations. These publications should be of great value to many fumigators. We assume that copies of the bulletin may be obtained by addressing the Department at Washington.

WHITE FLY.

From present indications it would seem that the white fly have been absolutely eradicated from the Bakersfield and Oroville sections. As to Marysville, we are told there is a possibility of further trouble, but there is most constant and careful watchfulness on the part of the inspectors to keep it under subjection. State Commissioner Jeffrey writes us that the situation at Marysville is now in as good shape as possible, and adds; "We have no fear of the insect getting the upper hand in this state." From other sources, this appears to be generally conceded, and we feel that the state should be deeply grateful for the vigorous and successful campaign which has been carried on.

THE EDUCATION OF THE FARM BOY.

(Continued from Page 659.)

the same protection that is guaranteed to our criminal classes.

Establish standards and create ideals that will hold the rural element. The open country should be the most beautiful spot on earth for we there have soil, water, sunshine and opportunity to combine them. Teach the boys to love nature in its attractive forms. Give him health and strength through right living in the open air. Make him master of his calling and he will respect and dignify his occupation. Each farm of the state should be an object lesson as to what a farm ought to be. How many reach the standard? Practical results are what we seek, so take this question home and ask yourself, what are you doing to make farm life attractive?

Agricultural Notes of the Pacific Coast

Northern California

Sacramento has recently started an ostrich farm.

Tehama county fruit is reported as excellent in quality.

Winters, Yolo county, shipped her first ripe apricots on May 22nd.

Red Bluff, Tehama county, reports extremely heavy crop of apricots.

Table grapes are generally promising and a fine output is expected.

Placerville, El Dorado county, had quite heavy rains during the last of May.

Georgetown, El Dorado county, reports an exceptionally good cherry crop.

Grass Valley, Nevada county, has had 72.21 inches of rain during the season.

Sacramento Bee appeals for more systematic planting of trees along road sides.

Volunteer barley on one Yolo county ranch will yield twenty-five sacks to the acre.

A number of Sonoma hop growers have already made contracts for this year's output.

Sonoma county is appealing for a county fair to be held next September or October.

Hop prices are increasing and the growers generally feel satisfied with the present outlook.

Anderson, Shasta county, reports exceptionally heavy yield of all fruits, especially of prunes.

Willows, Glen county, reports an immense crop of beets which are now being weeded and thinned.

A dispute has sprung up between Lake and Butte counties as to which has the "largest oak in California."

A contract has been let for the construction of six miles of canal to irrigate lands at Los Molinas, Tehama county.

A large new fruit warehouse and packing house has recently been constructed at Placerville, El Dorado county.

Lincoln, Placer county, recently held a big irrigation meeting to encourage more scientific and intensive farming.

The thirty-sixth annual picnic of the Bennett Valley Grange was held at the grange hall and picnic grounds last week.

A boy at San Leandro made a hearty meal from cherries and warm milk and was poisoned so that he died shortly after.

Some Sonoma county farmers are experimenting with a farm automobile much cheaper than the ordinary and equally effective.

Orange growers at Oroville have sued a fruit company for balance of contract price of nine car loads, which the buyer refuses to pay because the growers did not deliver the number of cars which were estimated.

A phemonena in tree growth is shown in Santa Rosa where the roots of an old fig tree which had been covered, after the tree was chopped down, by a building for 25 years, retained their vitality. When the building was razed to the ground recently the roots of the old tree began to send up sprouts.

Central California

Lodi is now in line with suggestion for Unfermented Grape Juice Day.

A $3500 irrigation plant has been installed by one orchardist at Lindsay.

Petition has been filed for the formation of a levee district in Tulare county.

Salmon are running heavily in Monterey Bay and immense catches are reported.

Quite extensive planting of orange trees will be made near Bakersfield this season.

Corn fields at Hanford have been attacked by a large green worm which has done much damage.

Forest Supervisor Shinn has notified the stock men of central California that the forests are not yet open.

Owing to shrinkage in the tonnage of grapes now grown near San Jose, the winery there will remove to San Martin.

The pumping plant of the Copo de Oro Water Company at Porterville, suffered a collapse because given too big a load.

Santa Clara Valley shipments of cherries are said to be about the same as last year's output and at prices that are fairly satisfactory.

Turlock berry growers claim their berries are the very best ever, and that they bring the top of the market in San Francisco and Oakland.

The station at Earlimart, Tulare county, has been moved about three miles to bring it into the more thickly settled part of the community.

A farmers' union local has been organized at Cupertino, Santa Clara Co. F. M. Coleman is president, H. B. Lydiard, secretary and treasurer.

There are twenty-five pumping plants located on the ranches around Delano, and all of them have proved remarkably profitable investments.

San Joaquin county is planning for an irrigation system which it is claimed will cover 62,000 acres of land. It will be under the Wright Irrigation Law.

A monster traction engine at San Jose tried a bridge which was too lightly constructed for its weight and both went to the bottom of the stream.

A Porterville grain grower has some volunteer wild oats which stand in the sheaf seven feet high. The same grower also exhibits alfalfa six feet high.

A serious outbreak of black brood disease has appeared in the apiaries of eastern Tulare county. The department of agriculture has been asked to investigate.

People along the line of the old narrow gauge from San Jose to Santa Cruz were highly elated on the reconstruction of that line and the sending through of the first train last week. This is the first train over the line since April 1906.

Tulare county horticultural commissioners have been so energetic in the enforcement of the horticultural laws that it has been discovered that some nursery trees have been shipped to other points outside the county then hauled by wagon and planted within the county without inspection.

Southern California

Hemet farmers are busy harvesting hay.

Many are engaging in the poultry industry in the Coachella Valley.

Escondido, San Diego county, hay crop is proving of very high-grade.

Coachella claims the record for shipping the first green corn this season.

Large numbers of Arizona cattle are being shipped into Imperial Valley for fattening.

It is now estimated that the crop of cantaloupes in Imperial Valley may not exceed 800 cars.

So far the Imperial Valley cantaloupe growers have shipped melons only in express lots.

County Bee Inspector Pleasants of Orange county reports inspecting a dozen apiaries during May.

The first melons out of Imperial Valley commanded $5.00 apiece. There were only two of them, however.

The big sugar factory at Santa Ana is steaming up and every promise is made for a good run for its first season.

The good old summer time began in Imperial Valley last week when 108 degrees in the shade was reported.

Riverside county officials have been experimenting with a weed burner which is reported to be remarkably satisfactory.

Nothwithstanding the indifferent prices which oranges have commanded this year, many sales of real estate have been made at Riverside.

The Coachella Valley has proven a winner this season with early shipments of summer squash, string beans, tomatoes, egg plant and apricots.

Palo Verde on the banks of the Colorado River, in the extreme northeastern corner of Imperial county, has been partly under water owing to high water of the Colorado.

Lemon growers are still shipping large quantities of lemons, notwithstanding weather conditions are such that sales are most unsatisfactory. As a rule the lemons have been poor keepers this year.

Owing to the absence of late rains and the continued dry weather which will be before us for months, many interested in the preservation of the mountain forests are using all possible precautions to prevent careless starting of fires.

The contest between the stockholders and former directors of the California Development Co., which is the great corporation responsible for the largest irrigation development ever made in California, and the Southern Pacific, seems to be impossible of settlement. The directors maintain the Southern Pacific is not just.

A "Professor" from Southern California has been interviewed by a paper at Ukiah and in the interview it is stated that he has discovered in the southern end of the state "that the ordinary black ant will remove the scale from fruit trees without injuring the trees or leaves in the least. The work is more complete than that accomplished by spraying." Fruit growers are asking, "Where is the ant at?"

The Coast

Hop contracts have been made at Portland, Ore., at 10 cents.

The record price for wool sold in Montana this year was 24 cents.

The annual cherry fair of Salem, Ore., will be held about the middle of July

A collection of logs and Hawaiian woods will be exhibited at the A-Y-P Exposition.

Swine raisers at Pullman, Wash., have been selling hogs at seven and a half cents.

The wool growers association at the Dalles, Ore., held their public wool sale May 21st.

Cantaloupes at Glendale, Arizona, are reported to be an exceptionally fine crop this season.

A company of Japanese have formed a corporation and are planting 5000 acres near Dufer, Ore.

One hunter employed by the forest service at Wallowa, Oregon, recently killed seventeen bears.

Snake River Valley near Lewiston, Idaho, has promise of an immense crop of peaches and cherries.

Hop growers are elated over the probable increase in duty on hops from twelve to twenty cents.

The Inland Empire of eastern Washington has a greater acreage of grain than ever in its history.

This is said to be the most prosperous season for cattle business in Arizona that has ever been experienced.

Four thousand acres on the Nez Perce reserve are to be thrown open for settlement July 1st, and opened for entry July 31st.

Government engineers are investigating the possibility of an irrigation scheme in the Horse Heaven country near Prosser, Wash.

Contrary to custom, only one wool sale has been held in Idaho this year. Practically all of the clip has been sold at private sale.

Ranchers at Beverly, Washington, are installing large pumping plants and securing fine results from irrigation with pump water.

Government officials in the Hawaiian Islands are making strenuous efforts to encourage the preservation of the forests of those islands.

The Portland hop market within one week recently advanced from ten to twelve cents. The poor crop in England is said to be the cause.

The Hawaiian Experiment Station urges cotton growers to import seed only through the experiment station in order to escape possible introduction of cotton boll weevil.

There is some contention between the farmers of Salt River Valley, Arizona, and the citizens of Phoenix, as to use of water from the great Roosevelt dam for creation of electric power.

Many Oregon farmers are greatly disappointed in not being able to collect bounty on coyote scalps. The recent legislature passed a law granting a heavy bounty, and the farmers supposing the scalp only to be sufficient, have been killing the coyotes in vast numbers. It now appears that not only the scalp, but all four feet of the animal, must be delivered up before the bounty will be paid.

Don't Forget Quality

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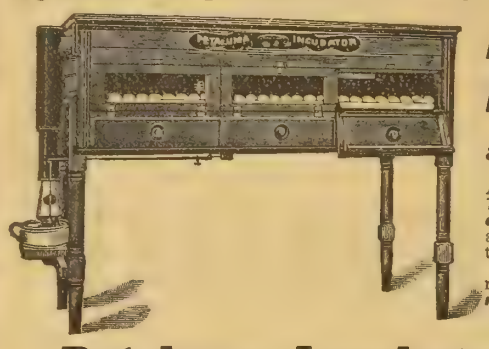

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Large birds, heavy layers, bred for highest utility only. Order book now open for season 1909

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Black Orpingtons and White Rocks

Write for Circular

San Fernando, California

El Centro farmers are discussing the formation of a new co-operative market association.

An expert on rice will be sent by the Department of Agriculture to the Sacramento Valley this season.

Profit in the Poultry Yard

By Mrs. Frank Metcalf

We solicit short articles of a practical nature from the fancier and utility breeder, giving their experience with poultry. All inquiries pertaining to feed, management, disease and its prevention will be answered through these columns.

FATTENING POULTRY.

THE fatening-pen should be dry and well ventilated and free from drafts. The birds that are cooped must not be placed in direct drafts or many will take cold. An open shed, with three sides tight, makes a good place for early fall or summer fattening, but for late fall more protection is required to secure the best gains.

Crate Feeding vs. Loose Pen-Feeding.

For a number of years the writer has conducted experiments with chickens in crates and in loose pens. He has tried six different feeders, with varying results. With some feeders, equally good results were secured with birds in crates as in loose pens. In the case of two feeders in particular, the birds could not be fed to advantage in loose pens as compared with crates. With one feeder, on the other hand, slightly better returns were secured in some cases with birds in pens. The majority of buyers of chickens seem to think that the crate-fed birds are much superior to those fed in loose

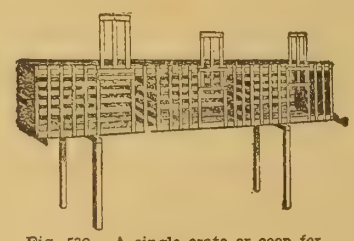

Fig. 539. A single crate or coop for fattening fowls.

pens. The writer prefers to feed birds in crates, for the reason that it takes less room. They are fed with less expenditure of labor, and a more even profit is returned. However, there are many persons who can get good results from feeding birds in box-stalls and like apartments.

Construction of Fattening Crates.

A fattening crate is usually made six feet six inches long, eighteen to twenty inches high, and sixteen inches wide. It is divided into three compartments, each holding four to five birds, according to the size of the chickens. It is made of slats, except the ends and partitions between the compartments, which are of solid wood. The slats on the top, bottom and back run lengthwise of the coop, while those on the front run up and down. They are usually one and one-half inches wide and five-eighths inch thick. Those in front are placed two inches apart to allow the chickens to put their heads through for feeding. The slats on the bottom are placed about three-fourths of an inch apart, so as to permit the droppings to pass through to the ground. Care should be taken not to have the first bottom slat at the back fit closely against the back. An opening at this point prevents the droppings collecting and decomposing. The slats on the top and back are usually two inches apart. There is a small V-shaped trough arranged in front of the coop for feeding and watering the chickens. The trough is two to three inches deep and is generally made of three-fourth-inch lumber.

Very fair coops may be made from old packing-boxes, by taking off the front and bottom, and substituting slats in their places. When fattening chickens inside of a building, it is well to darken the building and keep the birds as quiet as possible.—From Cyclopedia of American Agriculture, L. H. Bailey, Editor-in-Chief. Reproduced by permission of The Macmillan Company, Sew York.

WHY HENS LAY EGGS WITHOUT SHELLS.

There are several reasons for this, and while shell-less eggs are generally attributed to a lack of sufficient shell-forming material being supplied to the hens, in nine cases out of ten improper feeding is at the root of the mischief. This is demonstrated repeatedly by the fact that, even where shell-forming matter is supplied in abundance, hens will still lay shell-less egg. In that case we must look further afield for the cause.

A great deal of mischief is done by feeding on over-stimulating foods and the reckless use of condiments which over excite the ovary, and inflame the lining membranes of the oviduct. In this way the egg-producing organs are stimulated to excessive production with the result that the oviduct becomes diseased and those organs which produce the mineral matter for the shelling of the egg are too debilitated to perform their function properly. It is worthy of note that fowls suffering from inflammation of the oviduct often lose the use of their legs, the trouble being frequently attributed to cramps.

A very common cause of shell-less eggs is internal fat, which blocks the walls of the oviduct and impairs its functions. Worms in the hen's intestines sometimes lead to eggs, being expelled before they are properly shelled. Narrow perches are also responsible for shell-less eggs, the eggs being dropped prematurely, owing to the struggle of the fowls to retain their balance. Similarly, fright will cause a fowl—more especially a pullet—to expel the egg before it is ready.

When a fowl has acquired the habit of laying shell-less eggs there should be a complete change of diet. All soft food, except what is cooked, or juicy vegetables, which may be freely supplied, should be withheld for a time and grain only be given. Enough Epsom salts should be added to the drinking water to make it taste faintly saline, and for a few days the fowl should be housed in a quiet place. To help steer clear of shell-less eggs always supply the fowl with plenty of flint grit and guard against internal fat by feeding moderately—two meals a day are ample—giving a plentiful supply of green stuff. Perches must be of the proper size, and, above all, leave condiments and all that sort of things severely alone.—W. R. Gilbert.

WHICH SHALL IT BE?

The beginner in the poultry business is first confronted by this question.

He discards the mongrels, then he says to himself: "What pure breed of the many shall I procure?" Possi-

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Fifty Tanks from one thousand to ten thousand gallons that must be sold regardless of profit.
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Write for prices.
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When writing advertisers, mention Cultivator.

bly he can not keep many and only wants one breed.

So now comes the question: "Which is best?"

One neighbor has the small breeds, he has plenty of eggs, but when he sells his fowls they do not weigh much. Then another has a large breed; when he sells his fowls they weigh well but he complains he does not get as many eggs as others. Now, the beginner does not know as yet which to choose.

I would say: First, study your surroundings and decide which breed you can best raise if you have free range and no near neighbors; then choose a small breed or one of the small breeds.

If you must confine them, then choose a large breed. Then which one of the breeds?

I would answer: "The one that suits you best."

As to the financial returns from a large or small breed, we think that at end of the year they will amount to about the same.

The next question is: "Shall I buy a few birds or eggs to make a start?"

This is a debatable question. If the beginner can keep but few chickens he can make a very good start by buying a few good fowls in the fall, and possibly get enough eggs to raise as many as he would wish to keep and some to spare in one summer.

If he wishes to begin on a larger scale, then get an incubator of some reliable make and a hundred or two hundred eggs of some reliable breeder; then by careful management he can raise as many pullets as are wanted for another year.

The inexperienced poultryman or woman will find plenty to do and it must be done. "A stitch in time saves nine." If he expects to buy the chickens, build the houses and then sit down and wait for the money to be handed in for eggs and chickens, he had just as well step down and out.

But attend to every detail at once—feed, house and work, rain or shine, sometimes if necessary in the rain—he will be successful.

The person who does not expect to work and keep moving all the year had better seek other employment than poultry raising.—Poultry Tribune.

ARE POULTRY DISEASES INCREASING?

It is noticeable that, with the extension of commerce between foreign countries and our own, new forms of disease have from time to time been imported, notwithstanding the precautions which are taken to prevent such an occurrence. Our modern methods of transportation by land and sea facilitate the rapid distribution of disease, for no sooner has a disease of an infectious nature broken out than it is conveyed from the place of its origin to the various countries which may be engaged in commerce with that place, and so rapidly does the whole thing occur that in many cases the germs of disease have been widely distributed before the proper authorities can interfere. Not only are diseases more readily distributed now than formerly, but also our modern methods of poultry keeping tend to make our poultry more subject to attack, for every day we are making them more and more of an artificial product. In bygone times, when fowls roosted on trees, or on the tops of houses, or in open sheds, and when comparatively few of them were kept on the average farm, they had a wider range and far more liberty to pick up a great variety of food than they have now, and in these days they were ractically immune from disease. Like wild birds, they were hardy, and could stand extreme exposure without the slightest injury, but, like them also, they were unprofitable, for though their food cost practically nothing, no profit was made.—Reliable Poultry Journal.

Baby Special

Chicks, extra big hatches due every week till late in June. Barred and White Rocks, Rhode Island Reds, White Wyandottes, Black Minorcas, Buff Orpingtons, White and Brown Leghorns. We can supply any of the above kinds in large lots every week.
PRICES—$14 per 100 for all kinds except White Leghorns $10 per 100, and Brown $11 per 100. Cut this ad out and mail with order for 100 chicks of any kind and we will send 10 CHICKS FREE OF THE $14 kind, or 5 free of the $10 or $11 kind. Order at once; we can ship most any day. This offer is good till June 10th. Free chick and hatching egg book, ask for it. We hatch 17 kinds of chicks.
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EGG FOOD
At this time of year the hens are apt to begin falling off in their laying, and it is necessary for poultrymen to keep them up as long as possible. If they stop laying too early and start molting they are likely either to take a long time over the molt or if they molt quickly to have another molt in the late Fall.
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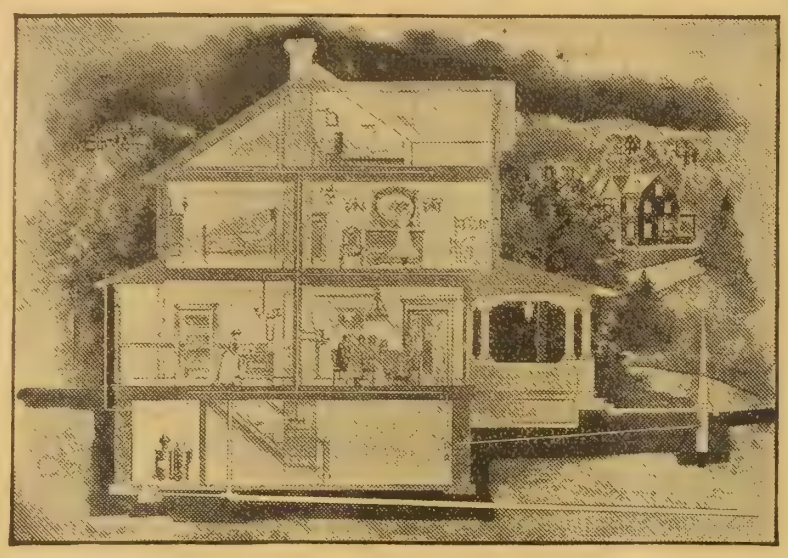
Light and Cook with Colt Acetylene



Here we have a sketch showing a Colt Acetylene light plant in operation. You will note that it is a very simple outfit that can be installed in any house without trouble. The small machine simply sets in one corner of the cellar or shed on a low platform, and is connected with chandeliers in every room, by small pipes running inside the walls, out of sight. That's all there is to it—just the machine, the fixtures and the pipes. Over 150,000 country homes, churches, hotels and stores are lighted by such plants. You can obtain full information concerning Colt Acetylene plants and installations, fixtures, stoves, etc., by addressing

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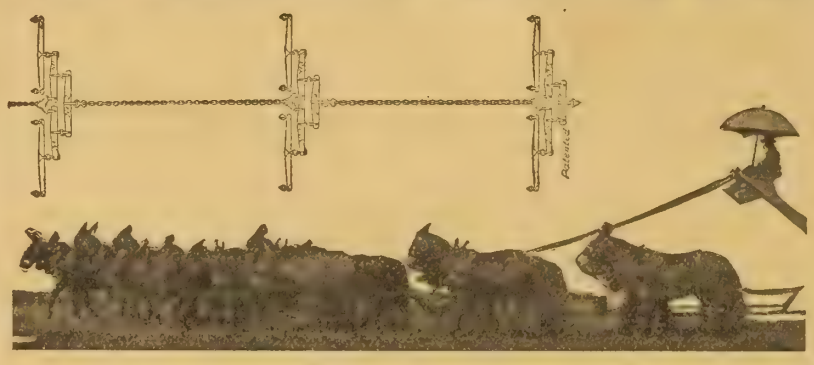

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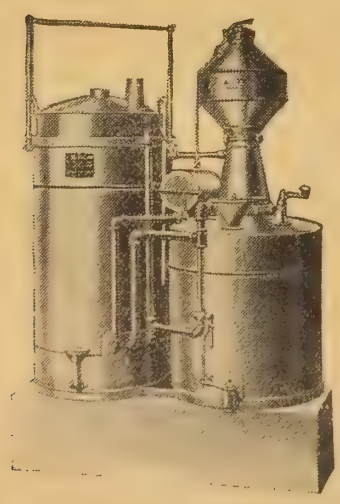

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Bees and Their Care

By Henry E. Horn, Riverside

HIVES.

THE main principle in comb-honey production is to have one's hives abundant in bees on the very day the honey campaign begins, and to have all fixtures in readiness. If the honey is to be obtained from clover or basswood blossoms, the apiarist must be in a position to prophesy fairly the day the blossoms will appear. The chief difficulty the comb-honey specialist has to contend with is the desire of the bees to swarm; for if a swarm issues, that generally puts an end to the work on the comb-honey supers. To retrieve themselves, bee-keepers capture the swarm and place the upper chamber of the parent colony on the swarm colony. To compel the bees to begin work actually at once, our best apiarists confine the colony to a small brood-compartment, which has the effect of causing the bees to invade the uper chamber at once; once in there, they will proceed to work on the boxes.

Fig. 319. Divisible brood-chamber, hive and super. The two lower stories for a brood- or breeding chamber, upper one for honey.

A goodly proportion of our apiarists are turning to what is termed the shallow or divisible brood-chamber hives to accomplish this result with the least possible labor. (Fig. 319.) A shallow hive is simply a hive which is shallow in proportion to its length and breadth. Langstroth's hive was ten inches deep, whereas a shallow hive is seven and one-half inches or less in depth, say six inches. The reason for resorting to this kind of hive is that the bees are very loath to enter the small compartments, holding no more than a pound of honey, and compulsion must be used to some extent. To produce extracted or strained honey is easier, as the brooding-chamber and upper story are alike; and as there is plenty of room, there is little desire to swarm. By robbing the hives occasionally, the bee-master deprives them of all signs of high prosperity, and this is sufficient to hold in check the swarming instinct, which is undoubtedly, the bane of successful bee-keeping. Swarming and honey-production are not compatible, and the modern bee-keepers would give a great sum for a method of action which would effectually control it. There are many minds at work on the problem.—From Cyclopedia of American Agriculture, by permission of The Macmillan Company, New York.

CUBAN HONEY AND BEESWAX.

Consul General James L. Rodgers of Habana, in answer to inquiries, furnishes the following information concerning the exportation of honey and beeswax from Cuba:

Although there are large amounts of these products exported, there has been no practical exploitation of the business except on a few places in Oriente Province, owned by Europeans.

During the calendar year of 1906, the last available statistics, the exports of honey amounted to 6,712,[illegible] pounds, of which a little less than [illegible] per cent went to Germany, about 2[illegible] per cent to France, about 15 per cent to the United States and the remainder to various European countries.

The exports of wax, which was principaly produced from honey, during the same calendar year, amounted to 1,383,464 pounds, of which Germany took a little less than 50 per cent, the United States about 25 per cent, France about 20 per cent, the remainder being distributed among various European countries.

The keeping of bees is a general practice in the country districts, and the hiving and all other matters connected therewith are of a most primitive character, the hive being usually a section of a palm trunk, and no particular care is taken to preserve the life of the hive during the taking of honey. Such practice, it should be understood, is not followed, at the modern apiaries, where there is as careful treatment and as modern apparatus as is found in any country.

All varieties of bees, especially the Italian, thrive exceedingly well in Cuba, there being an abundance of the plant life needed for their maintenance.

SPRA-MULSION.

A solution which has proved remarkably successful for scale, plant lice, aphis of all kinds, and other soft bodied insects, has recently been introduced. It is a wash which may be diluted in different proportions with water according to the plant or to the season in which the spraying is done. One advantage it has is that it will mix readily with cold water so that no cooking or other preparation is necessary, more than to stir thoroughly with from 25 to 50 parts of water. It is said to be not only good for the ordinary pests of fruit trees but for lice, gnats, fleas, borers, and mosquitoes, and is recommended for applying to horses and cows to prevent annoyance from insects. The solution is known as Spra-mulsion. It makes a perfect, permanent milk-white emulsion when stirred into water. It is recommended as superior to kerosene emulsion, and to keep indefinitely. It is manufactured by the Rogers Chemical Company of San Francisco.

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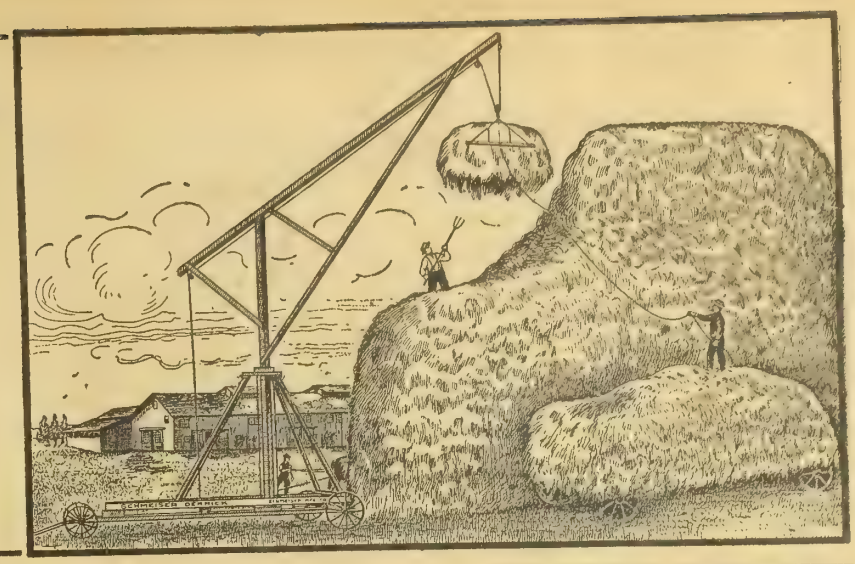

Irrigation and Forestry

FLOOD OR FURROW IRRIGATION.

THE best arrangement of a tract of land designed for submersion is to divide it into sections, or basins, by means of dikes or ridges, which may be thrown up by the plow. Each section, fed by the ditch, retains its water, the same being allowed to run into it laterally until it stops, and becomes stationary or stagnant. In this way the humidity in the soil is equalized or rendered uniform.

On large level land, or where the subsoil is impervious, the sections or basins may be enlarged. In that case the flow into the basins should be hastened so that every portion of the basin be covered simultaneously, otherwise the humidity would not be uniform. The only limit to the size or extent of these basins is the supply of water and the facilities for flowing it upon the soil. Several openings may be made for the distributing ditch to hasten the process, and the length of time the water is to remain upon the soil is gauged by its permeability. The soil should not be saturated unless a system of drainage is provided. This can only be determined by testing the soil after the water has been run off or is all taken up. If sodden, there is too much, if after a few hours it will not pack in the hands, it is ample. If the quantity of the flow of water justify it, a number of basins may be submerged simultaneously by openings made through the ridges or dikes.

Submersion without dividing the land into basins causes a great loss of water. During the daytime it is possible to regulate the flow of water, and with a plow, furrows may be run in various directions or a hoe is often sufficient to direct the water uniformly over the surface. But at night it is not so easy to control the course of the flow, particularly on large tracts of land. Night irrigation of this kind is practiced, but the crop appears luxuriant in spots, which show the lack of uniformity in the application of water.

As to the size of these basins to be submerged, the lay of the land and the water supply must be the guides. There are irrigated lands with submerged basins from the extent of a small garden patch up to a hundred-acre tract of alfalfa.

In extensive tracts, particularly cereals, beets, etc., flowing and ditch irrigation would be speedier and more economical than submersion, and in many cases more advantageous, particularly in the case of barley, but submersion would be beneficial in the case of peas, the former spreading out its roots near the surface, and the latter thrusting them down deep into the soil. So potatoes will not stand submersion but beets can scarcely be drowned out.

Should the land have a slope or grade impossible to level, care must be taken to provide a lower dike sufficiently high to overcome the height at the top where the water supply enters, for in such case the water at the top of the grade would barely cover the soil, but flow over the top of the lower dike and thus become flowing water and not stagnant or stationary.

Professor Schwerz, in his treatise on practical agriculture, thus refers to the advantages and the disadvantages of submersion:

"By inundating the soil it is easy to shield a field from any unfavorable temperature (heat or cold).

"The preparations for inundation are generally inexpensive. The food elements held in solution by the water have ample time to be deposited upon the soil. Insects injurious to vegetation, and which are not destroyed by ordinary irrigation, are totally destroyed, and the same may be said of noxious weeds in arid soils.

"On the other hand, many serviceable plants are drowned by prolonged inundations; herbs are rendered less hardy to changes of temperature, and hay and forage plants generally are of inferior quality. Inundation is deleterious at the flowering period of plants, though they can be irrigated beneficially in other modes. Finally, to inundate a large field rapidly throughout its entire extent is to consume an enormous amount of irrigation water."

From these considerations, the scientist draws the conclusion that "The choice between inundation and ordinary irrigation must lie in favor of that ordinary irrigation, although in turfy, tough soils, or on one very porous, inundation is more advantageous."—Anderson, Primer of Irrigation.

CALIFORNIA PROGRESSIVE.

CALIFORNIA took another step in its effort to promote the practice of forestry within the state, when Governor Gillett signed the bill providing for the creation of county boards of forestry. This bill authorizes the country supervisors to appoint a Board of Forestry whose secretary shall be a trained forester. Such forester shall have power to enforce the provisions of the Act, and all lawful orders of the Forestry Board, and in addition is vested with the powers of a peace officer to make arrests for violation of the law.

The County Board of Forestry is granted exclusive power to decide upon the variety, character and kind of trees, hedges and shrubs that shall be planted upon county roads, highways, grounds and property, and to determine all questions respecting the pruning, cutting and removal of all trees, hedges and shrubs, and the extent of and manner in which such work shall be done.

A violation of any of the provisions of the Act shall be deemed a misdemeanor. A special fund was also created to be made up of any penalties incurred through a violation of the provisions of the Act, and all moneys thus received shall be available to cover the expenses of the Board.

This law was the direct result of the work accomplished by Riverside County, which has for some time maintained a paid forester to look after the setting out and caring for trees within the county. The results obtained in that county were so satisfactory that it was thought desirable to extend the scope of the work to other localities.

It is odd to reflect that it is possible for one to be in four states at the same time. Yet there is one such spot in the United States. Glancing at a map, one finds an intersection between two straight lines, where Colorado, Utah, New Mexico and Arizona meet. The place is seldom visited as it is not easily reached. The stone erected by government surveyors is on the top of a spur in the Carrizo mountains. The nearest railway town is Mancos, nearly a hundred miles from the four corners. The region about was once densely populated by cliff dwellers, but there are now no human beings within miles. Some years ago the Indians destroyed the boundary shaft and it was not replaced until 1904, probably because a long time elapsed before the authorities knew the old one had been wrecked.—Field and Farm.

The Colorado river is showing its "June flood" much earlier than usual.

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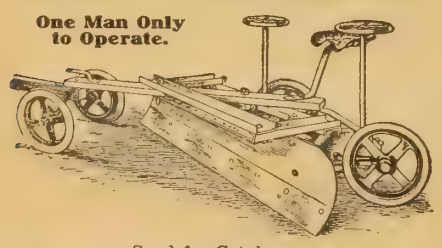

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Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Fails To Breed.

My oldest Jersey was four years old this spring. She freshened first at twenty months, and three months later freshened again. Then we thought it best to let her rest a while, and didn't send her away for six months, after which we thought her with calf as she didn't come in heat again for three months. We have kept that up for over a year, have her served and she seems all right for about three months, then comes in heat again. The first two males she was served with have given a great deal of trouble in that respect, many fine heifers being butchered because they failed to get with calf by them, but the third time I sent her to a male which I had never known to fail, but the result was the same. Now I have had her served the fourth time, with what results I cannot say, as it is yet too soon. Do you think she aborts? I take care of her personally and have never seen any signs of it.

Which way would I raise the most feed on a small patch of ground, by planting to alfalfa or putting it into oats in fall and corn in spring?—Mrs. I. W., Long Beach.

A good breeding powder might prove beneficial. On the ranch we do not have this trouble. I believe it is because the sires are well fed and not over used. In the town the trouble prevails. I had a sire that last spring was used on eighteen cows and produced a calf to every cow. I sold him to a man to use in a stable and showed him that the sire was right. Now I am waiting with interest to see what the report will be of the use of this animal in the village.

Oats, peas, corn and beans will give greater tonnage of green feed on a small plat than alfalfa. Manure must be returned to the land and more labor put on the cultivation. Adding peas will give earlier feed than oats alone. Planting half sorghum and half corn will increase the later yield of feed. The sorghum can be cut to the first joint three or four times, and come again and again. If the winter is a mild one, this plant becomes perennial.—M. E. S.

Soiling Crops.

I am told that you have raised many field peas on your place, and have received good results from feeding them to cattle. Would you kindly advise me if these field peas are of the Mexican field variety which are fed out in Colorado to the lambs and hogs? What time of the year do you plant these, and what is your method of harvesting? Have you fed any of these field peas to sheep in your section?—J. H. W., San Francisco.

We have raised the common garden pea sown with oats for both silage and hay. On this feed both cows and colts do well. On the same land we grow a summer crop of corn. The Canadian field we have sown as a green cover crop in the orchard and turned it all under except a little used for making seed for next year. These peas go under when in blossom. The straw from the plants that make seed is eaten clean by the young heifers. We cut peas with the mower and have them forked into stacks by hand as the rake breaks them too much. The stacks or cocks are put up as fast as cut and weigh about three hundred pounds after they are cured. Three days cures them down here in the dry air. All these peas must be inoculated to make satisfactory growth. We use soil from the pea rows in the vegetable garden, dampen the peas, roll them in it, sow at once and cover before they dry out. The Cow peas are beans and are used for summer sowing. We prefer them in rows to cultivate and irrigate during the season. The common garden peas, the Tangier peas, and the Canadian field peas may be broadcast and sown in the fall, or may be drilled in the corn field after the corn is siloed and left for the first rains to start into growth. They are cut when in bloom and cured for hay the same as other crops. If you can manage to hit it just right putting in the peas and sowing broadcast, any grain with it makes good feed. We have a few times come out right by broadcasting peas ahead of the gang plow, then after the plowing harrowing the ground carefully. Sheep, we know nothing about here, except as a means of cleaning up the land after the vintage and then it is grapes they feed upon. Mexican field peas I do not know, and yet if they are like most southern peas, would hardly think they would do for winter sowing.—M. E. S.

Sore On Udder.

I have a very fine cow, six years old, fresh two weeks, had no trouble with bag caking. The third or fourth time I milked her, something came down in her front teat like a small pea and stopped the flow, then went up and comes back now and then. A few days ago the milk smelled badly. I looked the udder over carefully and found a scab near the top in front and between the two milk veins. I pulled it off and found a very angry looking sore there, There seems to be a core running back over top of the udder about the size of a fifty-cent piece. Cow was in pasture until she came in. Now I feed four quarts bran night and morning, with a little salt and handful of oil cake meal with each feed, and all the oat hay she wants. She is in good flesh but has gone off about one-half in milk. We don't use the milk, but feed some to calf. Will it hurt calf for veal?—M. D. M., Watsonville.

If this is a sore, not an abscess, I should simply coat it with powdered willow charcoal to dry it up. If it is a deep-seated affair throwing off pus, it should be washed out with a teaspoonful of peroxide of hydrogen a few times and then dusted with the charcoal. If this is a surface sore, dusting it daily with powdered charcoal will soon cause it to dry up and heal completely. If it is more deeply seated and the supposed core is not merely a swelling coming from it, I should see that it was well opened up, and then every day for four or five days inject peroxide of hydrogen one teaspoonful to a quart of warm water. If she is a valuable animal I would watch her carefully to see if the udder is really involved in this trouble. The small bit of curd that dropped into the teat duct for the time may have been caused by the heat of fever from the sore. This trouble, like similar troubles in ourselves, will pass away in time. I hardly think that the milk will affect the calf. If it does, by bringing it to a scalding temperature, the trouble will probably be entirely remedied.—M. E. S.

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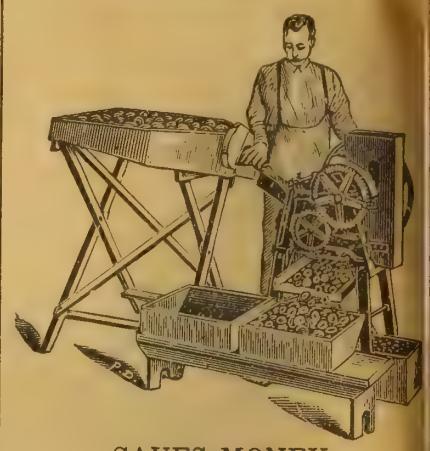

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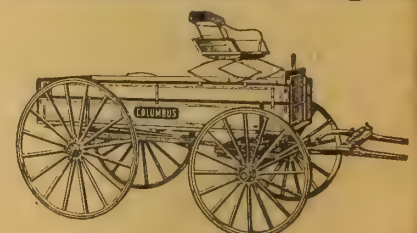

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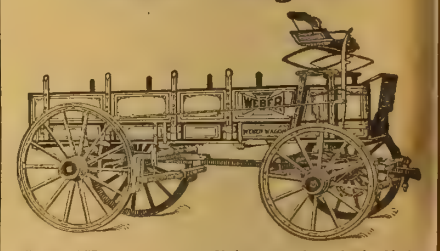

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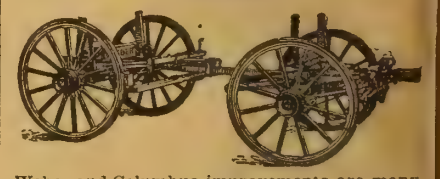

Weber and Columbus improvements are many. In fact, no matter what part of the wagon you examine you will find something to demonstrate that every detail has been carefully observed. If your dealer cannot supply you with these goods buy direct from us.

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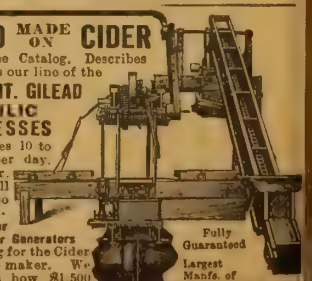
$1,500 MADE ON CIDER

Write for Free Catalog. Describes and illustrates our line of the

ORIGINAL MT. GILEAD HYDRAULIC CIDER PRESSES

Built in sizes 10 to 400 barrels per day. Hand or power. Presses for all purposes. Also Steam Evaporators, Apple-Butter Cookers, Vinegar Generators and everything for the Cider and Vinegar-maker. We can show you how $1,500 clear profit can be made.



Fully Guaranteed

Largest Manfs. of Cider Presses in the World

HYDRAULIC PRESS MFG. CO., 122 Lincoln Ave., Mt. Gilead, Ohio

White Guineas.

I note your inquiry in regard to guineas. White guineas are scarce this year and the eggs not very fertile. It is also late in the season. It is possible that I might let your inquirer have a dozen eggs later should the hens commence laying. Just now none of them are laying. I make no guaranty of the fertility of guinea eggs, all are, however, dated. I have only three guineas hatched and about twenty eggs hatching. Guineas are much harder to raise than pheasants. Out of a hundred young pheasants I raised, none have died. It would be far better for your correspondent to buy young guinea stock later. If he buys twelve eggs, the chances are he will not raise a single one.—Capt. C. Nielsen, Sebastopol.

Peach Leaf Curl.

Please tell me what is the trouble with leaves I am sending?—Subscriber.

There were two kinds of leaves in the package sent, both in such condition that it was almost impossible to tell what the trouble was, excepting that the peach leaves were undoubtedly affected with a bad case of peach curl. The one remedy for it is winter spraying with Bordeaux. It is now too late to spray to any advantage.

Garlic.

Spring planting of garlic I have never found successful. December is the best time to plant the cloves like onion sets. In the summer when the tops are entirely dry, the garlic may be pulled or dug up and hung out doors in the sun for several weeks to insure keeping. Garlic brings a good price in the late spring if it has been carefully dried and kept.—Subscriber, Gaviota.

Guavas.

May the lower branches of guavas that hang to the ground be cut off? What is the best time for planting? What soil suits guavas best, and how much irrigation produces most and best fruit?—Subscriber, Gaviota.

The Strawberry guava has a tendency to overbear and is benefited by thinning out and shortening the branches. It is well to keep the bush within such bounds that the fruit may be easily reached when picking. Any branch may be cut off without detriment. Should the entire plant, in fact, be cut off close to the ground, a new growth would soon appear as vigorous as ever. As nearly all the strawberry guavas are seedlings, there is a natural variation in size and quality which cannot be entirely overcome. I do not know of any ordinary soil in which it will not grow and bear well, and as a general rule there is very little danger of over irrigation, but rather the contrary.—C. P. Taft.

Veterinary

Answers in this column by Dr. R. T. Whittlesey, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Broken Bone.

I have a young heifer that threw herself, falling on her doubled up leg. The hock joint is badly swollen and the joint above the hoof is swollen and tender. She is losing flesh. I bathe the leg with hot applications and rub in liniment.

A neighbor's cow had the skin cut over the hip bone. The hide is off and foul smelling matter runs. The wound is washed with warm water and peroxide of hydrogen, and burnt alum applied.—Subscriber, Watsonville.

Either the bone in the leg is broken or the ligaments holding the joint together are torn loose. Recovery will be slow and very little can be done to aid it.

In the second case, I think a piece of bone is knocked loose from the point of the hip bone. Cut open the hole from which the foul smelling pus comes, giving it a free outlet, and hunt for a loose piece of bone. Wash with plenty of water from a hose, using considerable force. Follow with peroxide of hydrogen or carbolic acid solution.—R. T. W.

Give More Exercise.

I have a fine driving mare. Have been feeding her wheat and oat hay, some alfalfa, very little rolled barley with bran and some shorts, stock food twice daily, and some green barley. For two months she has had a cough with slight discharge from eyes and nose. Have given her "Carolina Pine Tar." Many lumps appear on her, especially after driving, a few have formed scabs. She is losing flesh though eating well. Urine is milky at times. Bites herself a good deal.—Subscriber, El Monte.

I presume your mare is hog-fat, gets about twice as much feed and half as much work as she should have. My advice is to give her no hay excepting thoroughly cured alfalfa, a little grain night and morning, and not less than fifteen miles driving every day.—R. T. W.

Diseased Eyes.

I have two cows that are going blind. Water drips from their eyes and they hold them shut. The balls turn blue and later white.—L. O. J., Silsbee.

Your cows have a conjunctivitis and probably other complications. As you have made no statement in regard to surroundings, I have no idea of the cause. My recommendation would be that you procure the following and inject a few drops three times a day with a medicine dropper. Adrenolin, 2 drams; water, 2 ounces.—R. T. W.

DR. WHITTLESEY'S VETERINARY REMEDIES.

These are not ordinary mixtures but are from well tried formulas, used in an extensive practice in Southern California for nearly a quarter of a century. Dr. Whittlesey's Sulphur Arsenical Salve for deep fistulous or ordinary chronic, indolent sores such as, "Poll Evil," "Fistulas," "Quitters," "Thrush," "Scratches," "Warts," "Collar sores" or "Sit-fasts." $1.00 per package postpaid. Printed directions. Dr. Whittlesey's Antiseptic Healing Powder. Forms a coating over raw surfaces, excludes air, flies and floating germs. Makes a cheap and convenient dressing for the many sores that occur to stock on the ranch. $1 full pound can postpaid.

DR. R. T. WHITTLESEY.
Veterinary Hospital, 714 East Seventh St. Los Angeles, Cal.

Classified Liners

FERTILIZERS.

NOW IS THE TIME
to fertilize for results in the coming crop.
ARMOUR'S "O.T.M.", "B.B.&P.", and "5-8-2" grow big crops and build up the soil. They have been doing it for years.
THE ARMOUR FERTILIZER WORKS, Los Angeles, Cal.

HORSES.

FOR SALE—ABOUT 200 HEAD OF work and brood mares, including young mules and horses from one year to four years of age. One full blooded Percheron Stallion four years old in May. One Jack about seven years old. Several full blooded Poll Angus Bulls and a number of full blooded Durhams. CHAS. W. HART, Farmersville, Cal.

FOR SALE OR TRADE—5 JENNETS, 2 good jacks, Missouri and Kentucky bred. Write OLIVER & ELTER, Dinuba, Cal.

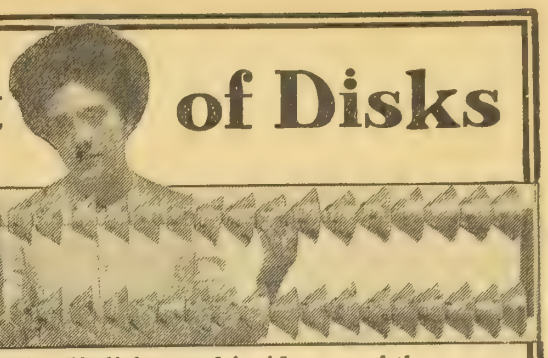
GRAPE CUTTINGS.

STRONG OUT DOOR GROWN ROOTED cuttings. All kinds of plants. Send for 1, 2, 3c list. GEM NURSERY, Los Gatos, Cal.

HOGS.

REGISTERED BERKSHIRE AND POland China hogs, both sexes. C. A. STOWE, Stockton, Cal.

10 Feet of Disks



THIS picture shows the 52 disks used inside one of the many "bucket bowl" cream separators that farmers and their wives are everywhere discarding for the simple, sanitary Sharples Dairy Tubular. We have slipped the 52 disks onto two 5 foot sticks so you can count them. The manufacturer and his agents call this disk bowl simple. Looks simple, doesn't it? They also say the 52 disks can be washed all together—as one piece—and hung up to dry. What do you think of such a statement? Ten feet of disks to wash clean and dry thoroughly, on both sides, twice daily. What a weary job after a hard day's work or a late milking. The maker of this "bucket bowl" machine has brought infringement suits against several concerns who have made and sold cheap cream separators with disks like his for a number of years. Disk machine sales have so decreased that he needs all the business he can get.

Why make the mistake of getting a "bucket bowl" machine? You'll very quickly wish you had a simple, sanitary, Sharples Dairy Tubular Cream separator instead. The dairy Tubular bowl contains just one instantly removable piece about like a napkin ring in size and shape. The entire Dairy Tubular bowl is easily washed clean in 3 minutes. 1909 sales exceed most, if not all, "bucket bowls" combined. Write for catalog No. 260.

TRADE Sharples MARK 29 Yrs

The Sharples Separator Co.

Toronto, Can. West Chester, Penna. Portland, Ore.
Winnipeg, Can. Chicago, Ills. San Francisco, Cal.

FARM LANDS FOR SALE.

FOR SALE—PALOMITAS VINEYARD 194 acres; 106 planted to choice Emperor, Malaga and Muscat vines, 3 to 6 years old Part or all. Half cash, balance on easy terms. MRS. M. E. SHERMAN, Fresno, Cal.

GOVERNMENT LAND. WHERE IT is and how to get it. You can locate yourself. Important pointers by experienced ex-locator for one dollar check or money order. Send now. JOE CLARK, Armona, Cal.

FOR SALE OF EXCHANGE FOR LOS Angeles or Orange County walnut land, 140 acre mountain apple, berry, vegetable and chicken ranch, near Santa Cruz. WILLIAM RICHARD, owner, 438 River St., Santa Cruz, Cal.

GRAIN AND STOCK FARM, 316 acres 3 miles from Oakdale, fenced in 4 fields, hog-tight, with stock and implements; by owner. Price $10,000. Box 121, Oakdale, Stanislaus County, Cal.

I MAKE A SPECIALTY OF ORANGE and alfalfa ranches and exchanges. 826 Main St., Room 9, Riverside, Cal. N. R. BELL.

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BUFF PLYMOUTH ROCKS, BRED TO lay, win and pay. My birds have won more prizes than all competitors combined. Eggs and stock. Circular. DR. W. H. HOLMES, Slavin Block, Pasadena, Cal.

FOR SALE—INDIAN RUNNER DUCKS, first class stock, great layers. Write for prices. Eggs for hatching, $1.00 per dozen, $5.00 per hundred. GEO. BAUM, Mountain View, Cal.

BABY DUCKS—MAMMOTH WHITE Pekins and pure bred Indian Runner ducks, one week old. $15.00 per 100; $2.00 per doz. Eggs $4.00 per 100. J. W. LYON, Gardena, Cal.

YOUR CHANCE TO START RIGHT. A few Black Minorca trios, properly mated, at $5.00 and up. Eggs for sale. J. P. McDONOUGH, Geyserville, Cal.

O. L. CRANE, BREEDER OF PIT AND Cornish Indian Games. Rural No. 3, Santa Rosa, Cal.

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PURCHASE THROUGH US ANYthing desired. Ask us about the Edison talking machines. We pay transportation charges. This wonderful entertainer will drive away the blues. Ask for catalog. COLUMBIA COMMERCIAL COMPANY, 204 East 9th St., Los Angeles, Cal.

CATTLE.

TWO NO. 1 REGISTERED JERSEY cows for sale. One (5 years old), churned 8 lbs. per week (by home method) on wild grass pasture, other her 16 month heifer by a Golden Fern bull. Breeding No. 1. Prices reasonable. TRIBBLE BROS., Elk Grove, Cal.

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FOR SALE—RARE BARGAINS IN slightly used gasoline and distillate engines from 2 H.P. to 80 H.P. Also complete line new Union engines at remarkably low figures. Complete pumping plants installed. See us before buying as we can save you money. BAILIE & BRANDT CO., 943 N. Main St., Los Angeles, Cal.

FOR SALE—RENT OR EXCHANGE, boilers and engines, gas engines, pipe and oil well casing, pumps, all sizes and makes; get our prices before you buy. A. CANNADY & CO., 691 N. Main St., Los Angeles, Cal.

FOR SALE—WE BUY, RENT, EXchange and sell electric motors and generators. See us for anything in electric apparatus. We can save you money. BAILIE & BRANDT CO., 943 N. Main St., Los Angeles, Cal.

FOR SALE—DOZEN SECOND-HAND windmill outfits, fine shape, also fifty tanks, iron and redwood, farm machinery. Save you half. Also new outfits. DEMMITT COMPANY, 120 North Main St., Los Angeles, Cal.

FOR SALE—4 H.P. UNION STATIONary distillate engine and pump in good running order or will trade for electric motor. MACHINERY EXCHANGE, N.W. Cor. Main & Bruno Sts., Los Angeles, Cal.

FOR SALE—DE LAVAL SEPARATOR, in perfect condition, capacity 400 lbs. per hour. W. J. WALLACE, R. D. 1, Riverside, Cal.

FOR SALE—CLOSING OUT CENtrifugal pumps and have some good bargains to offer in both horizontal and vertical. BAILIE & BRANDT CO., 943 N. Main St., Los Angeles, Cal.

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WANTED—A MAN TO BUD DEciduous nursery stock. State experience. Good wages to first class workman. Address, FANCHER CREEK NURSERIES, Fresno, Cal.

SEED WANTED.

WANTED—MYROBOLAN OR CHERRY plum pits. In writing state number of trees you have and approximate quantity of seed which can be supplied. Address, GEO. C. ROEDING, Fresno, Cal.

TREES.

FOR SALE—1500 EUREKA LEMONS, 1 and 2 years old; Blue gums, Sugar gums, and Red gums; street and ornamental trees, etc. GEO. R. WARNER, Santa Ana, Cal.

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with my Portable Billiard and Pool Tables. Send for Catalog and let me show you good, practical Tables at the price of toys. Used anywhere. No special room required. C. RIDDERHOF
Merchants Trust Bldg., Los Angeles

ATLAS E-Z SEAL JAR

When preserving time comes round and the "jar question" comes *up*, you will decide wisely if you choose jars of the "Atlas" brand they are far superior to all others. The Atlas E-Z Seal Jar shown below is an *instant* and *perfect* sealer. It has a *wide mouth*, that permits the preserving of whole fruits. It is extra strong at the top and *not* easily broken. It is made by machinery and therefore of uniform thickness and perfectly smooth finish. The most convenient jars to *fill*, *empty* and *clean* are "Atlas" brand jars.

ATLAS SPECIAL MASON

is another extra good jar. It possesses every advantage of the E-Z Seal — strength, wide mouth convenience and smooth finish, but closes with a screw cap. Made specially for those who prefer this kind.

A Book of Preserving Recipes

Sent free to every woman who sends us the name of her grocer, stating whether or not he sells Atlas jars.

If your dealer cannot supply these jars, send $3, and we will express prepaid thirty (30) quart size ATLAS E-Z SEAL JARS to any town having an office of the Adams or U. S. Express Co., within the States of Pennsylvania, New Jersey, New York, Delaware, Maryland, Virginia, West Virginia, Ohio, Illinois, Indiana or Michigan, or we will quote delivery prices in other portions of the United States by freight or express.

HAZEL-ATLAS GLASS CO., Wheeling, W. Va.

WOULD YOU LIKE TO SLEEP ON A MATTRESS

That is guaranteed to be absolutely hygienic?

That insures healthy, comfortable sleep?

That possesses all the good qualities of the finest hair mattress at about one-half the cost?

That is made in a factory where every precaution has been taken to insure the most perfect sanitary conditions?

That is made by skilled workmen in the most approved manner and the latest style?

That is guaranteed to give perfect satisfaction or your money promptly and cheerfully refunded?

That costs $15.00 for the full size, $12.50 for the ¾ size, $10.00 for the single size and is positively the best mattress made anywhere at these prices?

A Postal Card Addressed to the

John Breuner Co

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Will bring you a booklet describing their famous **"Kapokeen"** Mattress, which has all the good points mentioned and many more. Write today

Angle Lamp

The Light That Never Fails

Thousands in use all over the country. A good light is the greatest pleasure and the first necessity of every home.

The only lamp on the market that is sold under an absolute guarantee.

Remember, the light from Kerosene is the light science has agreed upon as being the purest and best, because it is soft and mellow and restful to the eyes. Here are a few of The Angle Lamp Merits:

NO UNDER SHADOW. NO SMOKE, NO ODOR, LITTLE HEAT.

GREAT ECONOMY—COST LESS TO BURN than an ordinary lamp. As easy to operate as gas or electricity, and better than either. **ABSOLUTELY SAFE** under all conditions. Lighted and extinguished like gas. Burned **HIGH** or **LOW** like **GAS** without a trace of odor. And a **BRILLIANT**, soft, steady, shadowless light—but this you will have to see to appreciate.

The lamp as shown in cut burns 22 hours on 3 quarts of oil.

Send for Illustrated Catalogue with Prices

Boesch Lamp Co., 1135 Mission St., San Francisco

Established 1869 Incorporated 189

NITRATE OF SODA

We are prepared to furnish Nitrate of Soda at the lowest market price, and will be pleased to quote prices and furnish literature to any one interested, on application. Advise us what crops you are interested in.

NITRATE AGENCIES COMPANY

W. S. SPARR, Agent, 321 Stimson Block, Los Angeles

When writing advertisers, mention Cultivator.

Household Department

THE LOOM OF LIFE.

All day, all night, I can hear the jar
Of the loom of life, and near and far
It thrills with its deep and muffled sound
As the tireless wheels go always round.
Busily, ceaselessly goes the loom
In the light of day and the midnight's gloom;
The Wheels are turning early and late,
And the woof is wound in the warp of fate.
Click! Clack! There's a thread of love wove in!
Click! Clack! And another of wrong and sin!

What a checkered thing this life will be,
When we see it unrolled in eternity!
Time, with a face like a mystery,
And hands as busy as hands can be,
Sits at the loom with its warp outspread
To catch in its meshes each glancing thread.
When shall this wonderful web be done?
In a thousand years, perhaps, or one,
Or tomorrow, Who knoweth? Not you nor I,
But the Wheels turn on, and the shuttles fly.

Oh, sad eyed weaver, the years are slow,
But each one is nearer the end, I known.
And some day the last thread shall be wove in.
God grant it be love instead of sin.
Are we spinners of woof for this life-web, say?
De we furnish the weavers a thread each day?
It were better, then, O my friend, to spin,
A beautiful thread, than a thread of sin.

—Anon.

BARBARA'S ENTERPRISE.

"FATHER, Austin Pierce has just returned from a trip and tells me he is positive our land can be used to make brick," exclaimed Barbara excitedly, "and at last we may be able to make the farm pay."

Mr. Meadows had sold his interests in the East and moved with his wife and daughter to the Middle West, with hopes of restoring his wife's health. Here he had been induced to buy a hundred acres of what to his inexperienced eyes, appeared to be good farming land. It proved to be unfit for farming purposes, however, and although the change had been beneficial to Mrs. Meadows in the beginning, hard work and worry soon broke her down, and three years after they moved west, she died leaving a bright, clear-headed girl of twenty to take up her struggle.

His wife's death made Mr. Meadows more discouraged than ever and preyed upon his mind to such an extent that he became a broken-down, childish man, dependent upon his daughter.

Barbara realized her responsibilities and immediately set to work to devise some plan for making money. She found this a hard task for although she had ideas they all had to be abandoned because of the lack of funds with which to carry them out.

Why not take boarders for the summer? This seemed to her the most feasible plan she had yet thought of. She knew that many people spent their summer with other families in the vicinity, and she was convinced that she could succeed.

With the beginning of warm days came the usual summer crowd and Barbara found boarders plenty, for, as one young college man remarked to another, "Miss Barbara is so neat and charming, and so good natured; I know she won't scold and be unpleasant, as Mrs. Johnson was last year, if we should happen to come in late for lunch."

These young men were students at a university and as both had engineering majors, they spent a great part of their vacation in surveying and studying the formation of the country about them, and it was while on one of these trips that Austin Pierce made his startling discovery.

Barbara was too busy to make any investigation into the brick theory just then, but gradually it was noised about the vicinity that "One of them young college fellers boardin' with Miss Barbary, sez he's sartin old man Meadow's land kin be turned inter brick." In some way the news was carried to the nearest city, twenty-five miles distant, and it was not long before she was obliged to give it thought, for she was besieged with speculators and real estate agents, some even going so far as to make offers on the ranch.

But Barbara was suspicious of these men because she felt that, being a woman, and a young woman at that, they would try to swindle her out of the land, and although she had received several offers which seemed quite a sum to her, still she resolved to get the most out of it that she possibly could, and decided to get advice before she took any definite steps.

So early the next Monday morning she went to the city, where she immediately sought out the office of Edward Towne, a lawyer who had settled Mrs. Meadow's estate. To him she told every detail, and before long he was completely won by her earnestness and show of business ability, and he resolved to help her in every possible way. Together they went to a brick specialist who promised to go to the Meadows' farm in a few days and make an analysis of the soil.

When Barbara reached home late that afternoon, she found Mr. Granger, a real estate agent, waiting for her. Mr. Granger had come to the ranch that morning shortly after Barbara had left and had made a thorough inspection of the place. Finding that it was excellent for brick, he had immediately used his large vocabulary of persuasive words in trying to influence Mr. Meadows to accept three hundred dollars an acre.

Poor, incompetent Mr. Meadows was entirely carried away by Mr. Granger's fluent talk, and by the time Barbara reached home the papers had been drawn up and now all that was needed to close the transaction was Barbara's signature.

Fortunately, Mr. Meadows had placed half of the farm in his wife's name when he purchased it, and upon her death her share had gone to Barbara, and consequently both her father's and her signature were necessary.

Barbara was too shrewd not to see in Mr. Granger's smooth words and too polite manner, that the purchasing of the farm would mean a great gain to him, and his haste in trying to close the deal only added to her suspicions. To Mr. Granger she simply said, "As this is a very important and serious matter with me, I must have time in which to think it over, and I will give you my decision one week from today."

Coax as he would, he was unable to move Barbara, and he left in an ungracious mood, showing only too plainly his disappointment, and realizing, too, that this young woman was one who could not be easily fooled.

In a few days, Mr. Moulton, the brick specialist, in making his report of the analysis, said:

"I find that your land is of a clay formation suitable for the making of brick, and as brick is scarce in these parts you should realize at least six hundred dollars an acre; but if that were my land, I wouldn't sell it at any price. My advice to you, Miss Meadows, is to keep the place and start a plant of your own. Well equipped and managed, this should bring you a fortune.

To Barbara this seemed impossible, for she knew it would take money and experience and for the next few days she was in a most wrought up frame of mind. But Mr. Towne came to her assistance, for he realized that there were great possibilities in the scheme and offered to finance her if he could be allowed to purchase one third interest in the plant. Barbara considered this plan in every light and finally consented, for by this scheme she could be able to carry out her ideas and still not be so greatly indebted to Mr. Towne.

When Mr. Granger returned for his answer, Barbara's most emphatic "No," gave him to understand that the matter was not to be pressed and she refused absolutely to divulge any of her plans.

The next few weeks were busy ones for Barbara. Mr. Towne had several cases to attend to and was unable to do any more than give her instructions as to how to start the work, so that the business transactions were mainly in her hands.

Her first step was to decide upon the best location for the buildings, and in this she was aided by Mr. Moulton. When this point was settled he further assisted her by taking her to builders and machinists. Finally with Mr. Towne's approval, she let the contract for the plant. Construction was carried on rapidly, and eleven months afterward everything was in working order.

Austin Pierce having graduated from college and now working for a railroad company, found himself in the vicinity of Barbara's home with an intense longing to go for a quiet week to the place where he had spent such an enjoyable summer three years before.

Imagine his surprise when he found that instead of the old run down farm, there was now a flourishing brick plant, managed by Barbara herself and operating under the name of "The Meadows-Towne Brick Manufacturing Company."

Barbara was too busy to take boarders this summer, but she consented to take Austin for a week because she felt that she owed a great part of her good fortune to him.

That week went all too quickly for both of them, but their friendship was not dropped with the ending of his visit, for, as the old postmaster said to some loungers, "Miss Barbary has sure got a beau in the city, 'cause she gets a letter reg'lar every Wednesday."

A year later the firm's name was changed to "The Pierce-Towne Brick Manufacturing Company," which proved that the old postmaster's words were true.—I. E. A., Campbell, Cal.

About the House

THIS is the "season for refrigerators" and perhaps some general rules for "running" a refrigerator may help some of the younger housekeepers.

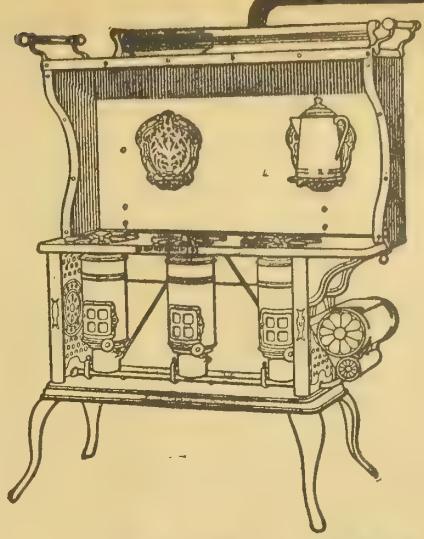
First, the refrigerator must be kept sweet and clean in every part—ice-box, waste pipe and provision chamber. Then the ice box must be well filled with ice. Ice will not melt so fast if the box is kept full.

Be sure to see too, that the lid of the ice box and the doors of the provision chamber are kept tightly closed, for the warm air rushing in will melt the ice and the food will spoil.

A porch where the wind and sun can reach it is not a good place for a refrigerator, and the cellar is too damp. The kitchen or pantry is a better place. The kitchen stove will not be as harmful as the wind, sun or dampness.

If by any chance the ice in the ice box should give out, open up the refrigerator and let the air in or the food will mould and spoil, and in the fall when you quit using ice, be careful to air and dry the refrigerator thoroughly or you may have a musty refrigerator ever after. It makes a difference where the various foods are placed. Butter, milk or drinking water in open vessels should never be placed in the ice chamber, for they will absorb the odors that come from the food stored below. Just under the large opening where the cold air descends from the ice chamber is the place in a refrigerator that is almost entirely free from odors. This is the best place for milk and butter. Milk in covered bottles can be placed in the bottom of the provision chamber, as that is the coolest place. This is the best place for fresh meats. Fish, cleaned ready for cooking, may be wrapped in a clean cloth and placed here. Bottled water or other bottled beverages, and such vegetables as lettuce, cucumbers, celery, radishes, etc., may be laid in the ice chamber.

A can of fresh oysters should not be put on top of the ice, for cold air never goes up and the oysters in the upper part of the can might spoil. Lay the can in a basin or pail, cover with water and lay a piece or two of ice on top of the can and place in any part of the refrigerator. Or lay the can in the ice chamber under a piece of ice.—Elbepe.



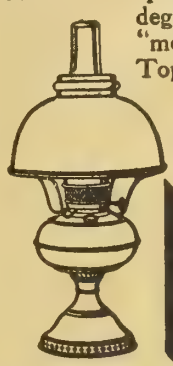
The Oil Stove With a CABINET TOP

The New Perfection Wick Blue Flame Oil Cook-Stove differs from all other oil stoves.—*It has a CABINET TOP.* This means you can keep dishes and utensils within easy reach while cooking, *and can keep food hot after removing it from the blaze.*

From its wonderful burners to its racks for holding towels the

NEW PERFECTION
Wick Blue Flame Oil Cook-Stove

is without equal. Its principle of concentrated heat means that the work can be done quickly and without the kitchen being heated to an unbearable degree. Can be lighted instantly and turned "high," "low" or "medium" at will. Three sizes. With or without Cabinet Top. At your dealer's, or write our nearest agency.



The **Rayo Lamp** comes as near lamp perfection as it's possible to get. Gives a clear, bright light that reaches the farthest corner of a good-sized living-room. Well made throughout of nickeled brass; perfectly safe and very ornamental. If not with your dealer, write our nearest agency.

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Write For Special Catalogue Department M.

San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, June 9, 1909.

Butter.

Butter is exactly as last week with featureless market.

Produce Exchange wholesale quotations are as follows with actual selling price to the trade 2½c advance on Extras.

Creamery per roll .....52½@55
Cooking 22½

Cheese.

Southern California Anchor 18
Northern fresh 16
Anchor Young America 19
Domestic Swiss 18
Imported Swiss 30

Eggs and Poultry.

Eggs took a slight decline during the week and case count now stands at 23 a two cent lower price.

Paying price f. o. b. L. A. are:
Eggs .....27@29
Case count buying price 23

Dealers pay for live poultry f. o. b. L. A.:

Hens per pound 3½ up 15
Stags and old roosters.....8
Fryers 2 to 2¾ lbs 22
Broilers 1½ to 2 lbs.....20
Broilers 2 lb 30
Roasters 3 lbs and up 22
Turkeys 23
Geese 14
Ducks 14
Squabs .....1.25@1.75

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs from 175 to 200 pounds 7¼
Prime steers .....4¼@4½
Heifers .....3½@3¾
Calves per pound 5
Sheep ewes per head .....3.75@4.00
Lambs per head .....3.25@3.50
Wethers .....4.50@5.00

Potatoes.

Wholesale prices are:

Sweets per box .....2.25@2.50
New per box .....75@90
Early Rose local .....2.50@2.75
Early Rose northern .....2.50@2.75
Burbank local 2.75

Onions.

Wholesale quotations:

Northern Aust. Brown 3.50
Imperial Bermudas per crate 1.00@1.15
Texas Bermudas per crate ..1.00@1.10
Coachellas crates .....80@90
Coachellas sacks .....1.25@1.35

Vegetables.

Artichokes locals .....40@75
Asparagus .....5@7
Beets per sk .....90@1.00
Beans string .....2@4
Beans wax .....7@9
Cabbages per sack 65
Celery per crate .....6.00@6.50
Chili per lb 25
Chili dried .....9@10
Cauliflower per crate .....1.50@1.75
Carrots per sk .....1.00@1.25
Corn per doz 25
Egg plant .....8@12
Green onions per doz bunches ..15@25
Horseradish per lb 12
Summer squash .....40@50
Lettuce choice .....50@75
Mushrooms per basket 3.00
Oyster plant 50
Peas per lb .....3@5
Parsley doz .....20@40
Parsnips .....15@20
Rhubarb Northern per box ..1.75@2.00
Rhubarb Crimson Winter ....75@1.00
Radishes per doz .....15@20
Spinach per doz .....15@20
Turnips sk .....75@1.00
Tomatoes crate .....2.25@2.40

Citrus Fruits.

Navels .....1.25@2.75
Tangerines halves .....1.60@2.75
Grapefruit .....1.50@3.50
Lemons .....1.00@2.25
Unpacked .....1.00@1.35

Fresh Fruits.

Wholesale prices on the market are:

Apricots per crate .....1.40@1.50
New apples 50
Cherries white .....35@50
Cherries black .....75@85
Cherries per lb .....8@9
Cherries, white bulk .....3@5
Cantaloupes $3.00
Aligator Pears per doz .....3.50@4.00
Pineapples per lb 10
Loquats per lb .....2@3½
Peaches, box 75
Pears box .....1.00@1.50
Raspberries .....6@7
Strawberries .....3@6
Blackberries .....3@4
Gooseberries .....8@10
Loganberries .....3½@4
Currants .....1.35@1.75
Figs 1.75

CANTALOUPES.

Cantaloupes are doing well. Specials are commanding $1.50 to $2.25 and Ponies go as high at $5.00. Express shipments only are received. Car shipments will probably commence soon. Report from Imperial indicate much preparation on the part of the transportation company to give best facilities to handle the 800 or 1000 cars which will be produced there. The acreage is about one-third that of last year, so fair to good prices are anticipated during the season. Quality of melons so far received is excellent.

Cantaloupes .....1.50@5.00

Dried Fruits.

Wholesale prices are:

Apricots .....10@12
Evap apples fy per lb 8½
Figs loose 5
Peaches .....6@8
Pears 9
Plums pitted .....8@9
Nectarines .....7½@9
Prunes .....7@8

RAISINS—Muscatels, 2-crown, loose, 50-lb. boxes, lb., 3½c; do., 3-crown, 4c; do., 4-crown 5c; sultanas, bleached, lb., 9c; do., unbleached, 3½@4c; new seeded raisins, 16-oz. packages, 6c; do., 12-oz. packages, 5c.

Beans Dried.

Wholesale prices are:

Pink No. 1 .....3.75
Limas per ctl 4.50
Black eyes .....3.75@4.00
Lady Washington 5.75
Small White 6.50
Garvanzas 4.50

Nuts.

Almonds IXL per lb 15
Pecans polished .....15@17
Peanuts California 5
Walnuts No. 1.....12@13
Walnuts No. 2 .....9@10

Honey.

Wholesale quotations:

Extracted water white 7
Extracted Light Amber .....5½@6
Comb Water White 16
Comb white 15
Beeswax 25

Hay.

Prices paid to producers f. o. b. Los Angeles are as follows:

New Barley hay 13.00
New alfalfa .....12.50@13.50
Wheat hay 14.00
Tame oat 16.00

Grains.

Wholesale selling price f. o. b., Los Angeles:

Wheat new per ctl .....2.35@2.40
Kaffir corn 2.00
Corn Eastern bulk 1.95
Egyptain corn 1.85
White oats 2.25
Seed Rye 2.00

Feed Stuff.

Wholesale selling price f. o. b., Los Angeles:

Cracked corn 2.00
Shorts 1.95
Bran 1.70
Cocoanut cake 1.35
Cocoanut meal 1.85
Cottonseed meal 1.25
Oil cake meal 2.50
Feed meal 2.05
Cracked wheat 2.50
Rolled Barley 1.60

San Francisco Markets

SAN FRANCISCO, June 8, 1909.

Butter.

Butter recovered the half cent it lost last week and again starts at 26 for extras. Market firm.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras per lb 26
California firsts 25½
California seconds 24½

Cheese.

California flats .....11½@14
Cal Young America fy .....15½@16½
Young American Oregon fy 16½

Eggs and Poultry.

Eggs declined slightly during the week, losing 1½ cent after a material advance.

Official quotations of the S. F. Wholesale Dairy & Produce Ex. are:

Fresh ranch extras .....23@25
Hens per doz .....4.50@10.00
Roosters .....4.00@12.00
Fryers per doz .....6.00@8.00
Broilers .....2.50@5.50
Geese per pair .....1.50@1.75
Ducks young .....6.00@7.00
Pigeons young .....1.50@2.00

Live Stock.

San Francisco prices gross weight:

Steers .....3@4¼
Cows and heifers .....2@3½
Hogs .....4@7¼
Calves per lb .....3½@5
Milk lambs .....5@5¼
Wethers No 1 unshorn 4½
Ewes No 1 .....3¾@4
Shorn sheep .....½c less

Potatoes.

Wholesale market quotations:

River white fy sacks .....2.00@2.10
Early Rose .....1.85@2.00
River Burbanks .....1.85@2.10
Salinas Burbanks .....2.40@2.47½
Sweets per crate .....1.50@2.00
Oregons .....2.00@2.50
New potatoes white .....2@3

Vegetables.

Wholesale quotations:

Asparagus per box .....1.00@2.00
Bell peppers per basket .....75@1.00
Brussels sprouts per lb .....3@5
Cabbage per box .....2.00@2.25
Cauliflower doz .....75@1.00
Carrots per sk .....65@75
Celery per doz .....40@60
Cucumbers per doz .....1.00@1.75
Chili peppers per lb .....12½@15
Corn per doz .....15@50
Egg plant per lb .....12½@15
Green peas per sk .....1.25@2.50
Mushrooms per lb .....12½@25
Squash per box .....1.00@1.25
Onions green per box .....50@60
Rhubarb per box for bay .....1.00@1.25
String beans .....3@5
Tomatoes box Mexicans .....1.50@2.00
Tomatoes Cal .....1.50@1.75
Wax Beans .....4@6

Onions.

Australian Brown 4.00
Texas Bermudas per crate .....90@1.00
New green per box 65
New red per sk .....50@65

Citrus Fruits.

Navels .....1.75@3.00
Valencias .....2.50@2.75
Grapefruit .....1.00@3.25
Lemons .....75@3.25
Limes .....4.50@5.00

Fresh Fruits.

Apricots box .....75@1.25
Apples new green .....50@75
Cherries Black Tartarian .....40@65
Cherries loose black per lb.....3@5½
do white .....2@3½
Apples new green .....40@85
Cherries Black Tartarian .....60@75
Cherries loose black per lb .....4@6
do white .....2@3
Cherries Royal Anne .....50@65
Figs blk box .....1.50@1.75
Malindas per chest .....3.00@4.00
Cherry plums per box .....50@65
Peaches per box .....60@1.00
Longworth per chest .....4.00@7.00
Nutmeg melons .....1.50@5.00
Pineapples per doz .....3.00@6.00
Raspberries per crate .....1.00@1.25
Gooseberries per chest .....4.00@4.50
Logans per chest .....3.00@4.00
Blackberries dbl crate .....60@75
Currants per chest .....4.00@7.00

Dried Fruits.

Prunes 4-size basis 2½
Santa Clara 2¾
½c premium for larger sizes
Apricots per lb; Choice 8½; fancy 10½@11.
Peaches—Choice ..4¾; fancy ..6@7½
Apples evap .....5@7½
Pears .....5@8½
Figs .....2½@4
Nectarines .....5@6
Pitted Plums .....7@8

RAISINS—1908 crop, f. o. b.: Fancy Seeded No. 16, cartons, 4½c; do, No. 12, 3¾c; do, Choice, No. 16, 4c; do, Choice, No. 12, 3¾c. 50-lb. bxs: Loose Muscatels, Standard, 4-crown, 4c; 3-crown, 3c; 2-crown 2½c; Seedless Thompson, unbleached, 3½c; Seedless Sultanas, unbleached. 2¾c; Dried Grapes, 2c; London Layers, clusters, 6-crown, $3; 2-crown, 90c; 3-crown, $1; 4-crown, $1.50; 5-crown, $2.50.

Nuts.

Walnuts soft shell 9½
Hard shell .....6@8½
Ne Plus Ultra 10½
Almonds Nonp 11½
Pecans .....15@17
Chestnuts .....2@10
Peanuts .....5@6
Pine nuts .....22½@25

Beans Dried.

Limas .....4.00@4.20
Pink .....3.15@3.25
Small white .....6.50@6.75
Large white .....5.50@5.75
Black eyes .....3.35@3.50
Red kidneys .....3.60@3.85
Garvanzas .....3.00@3.25
Bayo .....5.40@5.50
Horse beans .....2.00@2.10

Hops.

Hops 1908 crop .....5@9
Old crop .....2@5
1909 crop contracted for at .....12@13

Honey.

White comb .....11@12½
Light Amber .....9@10
Extracted W W .....7@8
Extacted light amber .....6@7
Beeswax per lb .....23@30

Hay.

Scott & Magner say: The majority of the hay that has been coming in lately has been of the new crop. There has not been much of the old crop offered, and very shortly this small supply will cease. Our new crop being in such good condition, it has been going into consumption satisfactorily and extensively.

The majority of the offerings here has consisted of volunteer crop, which is selling on the cars in San Francisco at from $11.50 to $15.00. In some cases a little better figure has been realized for something that was exceptionally choice, or on days when arrivals were particularly moderate.

New wheat and wheat and oat hay is just beginning to put in its appearance on the market here, and no definite trading basis can be figured on until later on when conditions throughout are better understood by both buyers and sellers.

Alfalfa hay has been in light supply and the demand is also moderate. The market is a little weak and no activity shown at any point.

Choice wheat hay .....20.00@22.00
No. 1 wheat or wheat & oat 19.00@20.00
No 2 wheat or wheat & oat 17.00@19.00
Choice tame oat .....18.00@21.00
Other tame oat .....16.00@18.00
New crop wild .....12.00@16.00
Stock hay .....7.00@10.00
Alfalfa .....11.00@13.50
Straw .....60@85

Grains.

Wheat No 1 .....2.15
Barley .....1.57½@1.60
Barley common to fair .....1.45@1.55
Oats white .....2.15@2.25
Oats gray .....2.05@2.15
Rye new crop .....2.10@2.15
Corn Egyptain .....1.60@1.65
Corn Cal sm round .....2.00@2.10
Alfalfa seed, Cal .....16@18
Mustard yellow .....5¾@6
Mustard brown .....3¾@4½
Millet .....2½@3
Broom corn seed per ton 23.50

Feed Stuff.

Bran per ton .....29.00@30.00
Feed cornmeal per ton .....39.00@40.00
Cracked corn per ton .....40.00@41.00
Rolled barley per ton .....34.00@36.00
Rolled oats per ton .....44.00@47.00
Oil cake meal per ton .....38.50@40.00
Cocoanut cake per ton .....25.00@26.00
Middlings .....33.00@35.00
Mixed feed per ton .....30.00@32.50
Shorts .....31.00@33.00

Deciduous Market

Sacramento, Cal., June 5, 1909.

The cherry market has remained very steady since our last report as is evidenced by the markets yesterday, which we quote as follows:

Minneapolis:—Royal Annes 80c to $1.45, Black Oregons, $1.75 to $1.90, Centennial $1.30 to $1.40, Tartarians $1.55 to $1.90.

Chicago:—Royal Annes 80c to 3.35, Tartarians $85 to 1.85.

New York:—Tartarians $1.10 to $2.25, Royal Annes $1.25 to $2.20, Rockports $1.20 to $1.75.

Billing price on express shipments is $1.25 f.o.b. for all varieties.

The first mixed cars, which were shipped from Vacaville and Winters districts, are now en route to the East. These contain about an equal assortment of apricots (Royal, Seedling and Newcastle varieties), Alexander peaches, Clyman Plums and Royal Anne, Bing and Black Oregon Cherries.

The first mixed car from Placer County was shipped yesterday, being billed from Loomis. The same contained 400 Alexander Peaches and the balance apricots, Clyman Plums and a few cherries. Very good prices are expected for these first cars, the first of which will sell the middle of next week. Shipments will increase daily as other varieties of peaches and plums come in. The next varieties of plums will be the Tragedy, Burbank, Abundance and Climax. There have been a few Tragedys shipped already. The Alexander Peaches will be followed by Triumph and Hales.

The weather has been very warm the last three or four days and this has caused the fruit to ripen very quickly, and by next week we should have a plentiful supply of all the early varieties, which will enable the shipping firms to fill their orders for Western markets.—T. C. Tucker.

Citrus Market

LOS ANGELES, June 9, 1909.

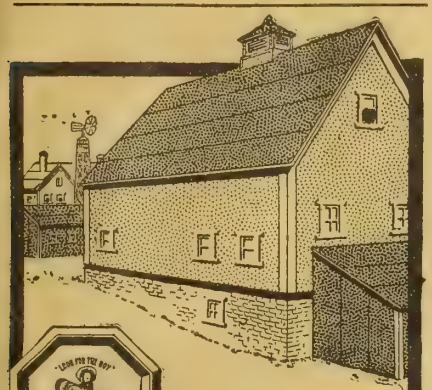
The present market conditions on oranges are such as to gladden the heart of the grower of Valencias. In fact, the navels yet to be marketed are commanding 35 to 40 cents in advance of prices secured a couple of weeks ago, but as the navels are practically all shipped, this will not be such good news to the navel men as to growers of the late fruit. The output of Valencias will probably be very large. The estimate is that it will be at least twice that of last year, but if no stampede is made toward shipping all in a bunch and the shipments are properly distributed from now until November 1st, it should all command a good price.

Lemons are brightening up materially and recent shipments will probably command a good price. The weather in the east is more favorable for lemon sales, and the season is ap-

proaching when even the lower grade fruit should be unloaded at a fair price.

Shipments.

Total shipments of oranges and lemons to date since November 1st, 27,962 cars, of which 24,372 were oranges and 3,590 lemons.



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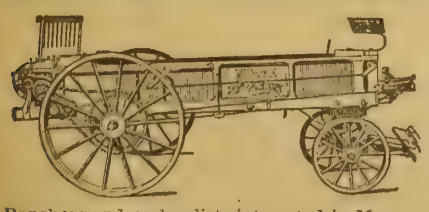
Management
Palace Hotel Company

MANURE SPREADERS



Ranchers and orchardists interested in Manure Spreaders will receive valuable information and catalogues by addressing us on this subject. We carry these spreaders in stock ready for immediate delivery.

Arnott & Company
112-118 So. Los Angeles St., Los Angeles

NEW YORK, June 7.—Forty-four cars oranges and two cars lemons sold. The market is very strong on oranges with an upward tendency on good grades. Weather clear, warm, favorable.

NAVELS—	Average.
Parrot SA Exchange	1.75
Orchard Run	2.05
Cluster SA Exchange	1.95
Blue Globe Riverside Ex Riverside	1.75
Royal Knight RH Exchange	2.70
Ben Hur SB Exchange	2.35
Tally-Ho SB Exchange	2.40
Bear OK Exchange	2.45
Pet SA Exchange	2.05
King Leo SA Exchange	2.25
Standard National O Co	2.90
Orchard National O Co	3.30
Rialto Girl Growers F Co	2.05
Lion Head Lyon Sons	2.20
Klondike Speich & Co	1.85
Carnation M & Greene Co	2.35
Tropical Queen M & Greene Co	1.60
Heap Good Pattie & Lett	2.40
Cerrito Brown	4.05
Elephant Cash Assn	3.05
Plain Ends Cash Assn	2.45
SEEDLINGS—	
Slover Growers F Co	1.95
Mission Bells Chapman	2.20
Mission Memories Chapman	1.80
Titus Ranch San Marino GPA	2.15
El Toreador San Marino GPA	1.90
Titus Ranch San Marino GPA	2.35
El Toreador San Marino GPA	2.00
Preferred Stock Allen Break	2.05
Brook Allen Break	1.25
MEDITERRANEAN SWEETS—	
Preferred Stock A Break	2.05
Honest Pack Tustin P Co	1.70
Lucky Tustin P Co	1.40
BLOODS—	
Blue Globe	2.30
Red Globe	2.15
Queen Bee	1.80
Royal	1.95
Yankee Doodle	2.00
Sweetheart	2.35
LEMONS—	
Flower Growers F Co	1.85
Standard	1.00
Commodore	.85

PHILADELPHIA, June 7.—Eleven cars navels, three mixed cars, two cars seedlings, one sweet, one St. Michaels and two cars lemons sold. Market is advancing. Weather favorable.

NAVELS—	Average.
Coyote OK Exchange	1.85
Owl OK Exchange	2.05
Coyote OK Exchange	2.15
Blue Jay O KExchange	2.05
Lark SA Exchange	2.35
Rialto Girl Growers F Co	2.10
Producers Red O P Co	1.90
Cluster SA Exchange	1.50
Owl OK Exchange	1.85
Coyote OK Exchange	1.90
Greyhound SA Exchange	1.85
Owl OK Exchange	1.95
Rialto Girl Growers F Co	2.10
Aloha Red O P Co	1.90
SWEETS—	
Coyote	1.65
Independent	1.80
Defender	1.75
Buscada	1.55
Stock Label	1.50
SEEDLINGS—	
Producers	1.95
Rialto Girl	1.80
Aurora	1.70
Climax	1.55
LEMONS—	
Blue Jay	1.10
Rialto Girl	2.45
Choice	2.10
Cry Baby	1.70
Romeo	1.55
Defender	1.45

CLEVELAND, June 7.—Three cars navels, one seedling, one sweet, three mixed and two lemons sold. The market is higher on oranges and lemons. Weather favorable.

NAVELS—	Average.
Quail OK Exchange	2.15
Truth Riverside Exchange	2.70
Greyhound SA Exchange	2.50
Highlander High FGA	2.60
Setter SH Exchange	2.85
La Paloma Riverside Ex Riverside	2.85
Rod Covina F Exchange	2.05
Cactus High FGA	2.50
SWEETS—	
Highlander	2.65
Cactus	2.40
Arab	2.75
LEMONS—	
Whittier ST Exchange	2.75
Pico	2.40
Picnic	1.60
Arab SF Exchange	3.15
Duck	2.80

BOSTON, June 7.—Seventeen cars sold. Weather favorable. The market is unchanged.

NAVELS—	Average.
Hummingbird Riverside Ex Riv	2.35
Rey ST Ex Fernando	2.40
Queen Bee QC Ex Corona	2.75
Camp Fire ST Ex Nordhoff	2.40
Orchard National Orange Co	3.55
Elephant OK Cash Assn	2.80
California Beauty	2.55
Canyon Crest W American F Co	2.45
Blue Star ch Worthley & Strong	1.55
Quail OK Exchange	2.05
Tunnel ST Ex Fernando	1.95
Security ST Ex Nordhoff	1.80
Royal QC Ex Corona	2.10
Standard National Orange Co	2.95
E Highland E Highland CFA	2.65
GRAPEFRUIT—	
Extra Choice	1.85
Standard ST Exchange	1.50
Royal QC Exchange	2.30
Security	1.70
Pine Cone	1.85
Pine Cone	1.65
Royal	2.00
VALENCIAS—	
Security	2.90
East Highland "B"	2.20
MED. SWEETS—	
Arrowhead	1.95
Black Beauty	1.20
LEMONS—	
Rialto Girl	2.40
East Highland "A"	2.10

PITTSBURG, June 7.—Nineteen cars sold. Market very steady on navels. Weather favorable.

NAVELS—	Average.
Orchard National Orange Co	2.85
Chuckawalla	1.30
Colonial SA Exchange	1.70
Coyote OK Exchange	2.05
Volunteer SA Exchange	2.00
Cluster SA Exchange	1.95
Owl OK Exchange	2.00
Blue Print Riverside Ex Riverside	2.50
Green Print Riverside Ex Riv	2.15
Victor SA Exchange	2.10
Hawk SA Exchange	2.15
Coyote OK Exchange	2.15
Standard National Orange Co	2.30

ST. LOUIS, June 7.—Hot. Market is weak on account of the other varieties of fruit which are offered. Nine cars sold.

NAVELS—	Average.
Yankee Doodle AF Ex Highgrove	2.20
Owl OK Exchange	2.25
Belt RH Exchange E Highland	2.25
Stork SA Exchange	2.00
Dan Patch AF Ex Bloomington	2.10
Plain Ends RH Ex E Highland	1.80
GRAPEFRUIT—	
Royal Knight	2.45
LEMONS—	
Just Rite QC Exchange Corona	1.90
Minerva	1.75
Arab	2.50
Duck	2.05

CINCINNATI, June 7.—Weather warm. Market wavering. Two cars navels, one seedlings and one lemon sold.

Pet SA Exchange	2.10
Owl OK Exchange	2.30
Greyhound SA Exchange	2.25
SEEDLINGS—	
N W B selected	2.30
LEMONS—	
Goldfinch SS Ex El Modena	1.75
El Modena	1.35

ON TIME.

As usual the Petaluma Incubator Co. is on time. This time it is at Seattle. Gen. Manager Gray of the company, writes us: "A message from our president, Mr. L. C. Byce, who is in attendance at the Alaska-Yukon-Pacific Exposition, at Seattle, Wash., superintending the installation of our exhibit of "Petaluma" Incubators and Brooders in the California Building, states that the Petaluma Incubator Co.'s exhibit is one of the few all ready for opening day, June 1st. Many exhibits are backward, some just commencing, others just arriving. Those that are actually ready for the opening day are in the minority.

"The Petaluma Incubator Co.'s exhibit is attracting great attention from the start, great interest being taken in the full line of "Petaluma" Incubators and Brooders, Baby Incubator, or Infant Nursery, Bacteriological and Ostrich Incubators, and the large Electric Advertising Cabinet."

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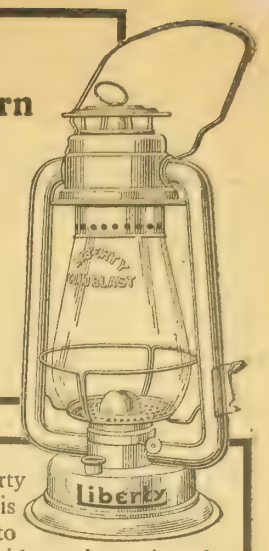

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cannot get out of order. Each burner has a special device that prevents the wick from jarring or jolting down. Wind proof. Storm proof. Easy to fill. Burn *all* the oil. Never leak. Bail stays in any position. Globe tough—clear as crystal. Prices range from 60c to $3.50.

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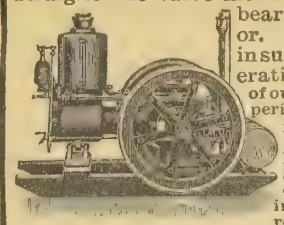

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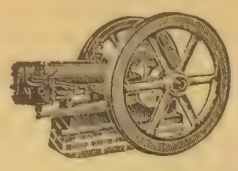

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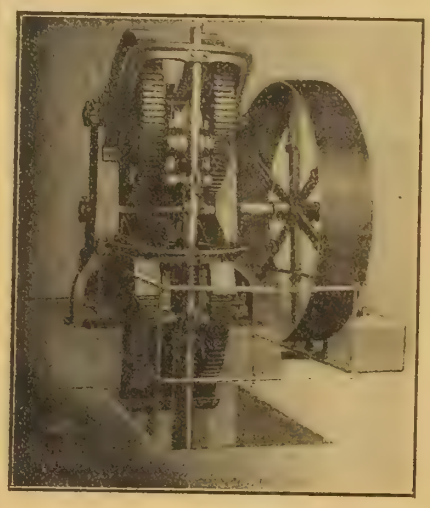

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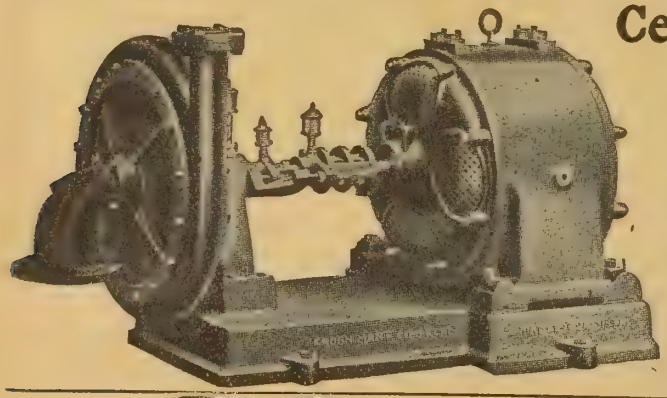

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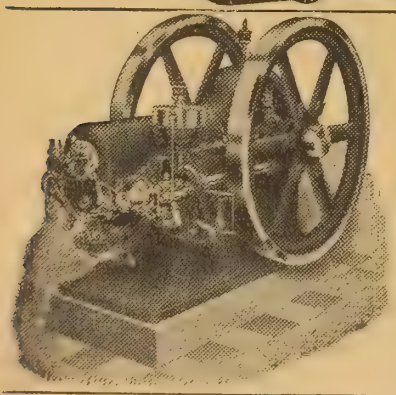

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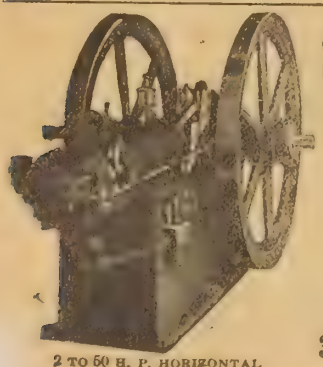

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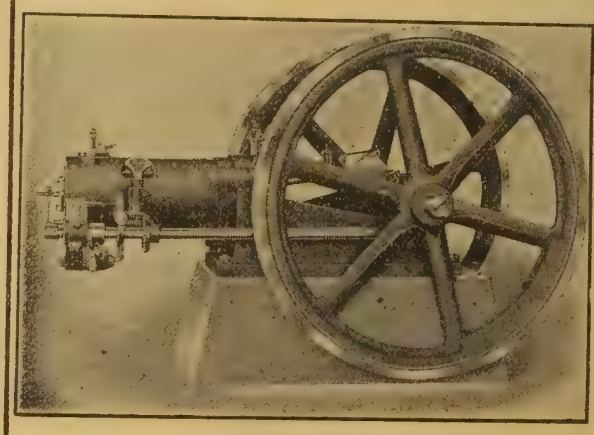

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Published Weekly — One Dollar a Year

Los Angeles — June 17, 1909 — San Francisco

As They Harvest Grain at Sanger

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Do You Know

That ere long the man who owns productive land here will discover its value, and will refuse to part with it at several times the amount it now takes to "lift" it, and that when that time comes it will be everlastingly too late for many.

Do You Know

That the value of land depends upon what it will produce per acre? That land on the **Kerman Tract** is today the cheapest land in the United States, value of possible products considered? That this fact is becoming known, and that it is bringing more people here than have ever come to any other similar tract in the same length of time?

Do You Know

That the **Kerman Tract** excels when it comes to water right, quality and lay of soil, natural drainage, location, and in possibilities for fruit and alfalfa growing, dairying and poultry raising? That it is unsurpassed, if equalled, in the things that go to both home and money making? That it is being populated by the very best quality of people, the cream of the country? That undesirable people are not allowed to buy land here and that those who locate are protected against the scourge which has ruined so many otherwise promising colonies in California? If you do not know these things now

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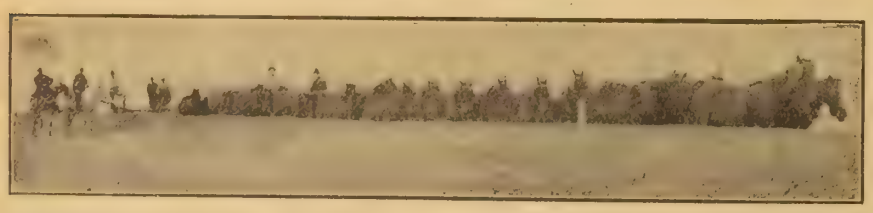
Dodd & Neu, 520 San Pablo Ave., Oakland, Cal.

H. J. Young, 222 Globe Building, Seattle, Wash.



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On this tract, and in two months, over 6,000 acres of new land was put under water, and into fruit, vines and alfalfa.

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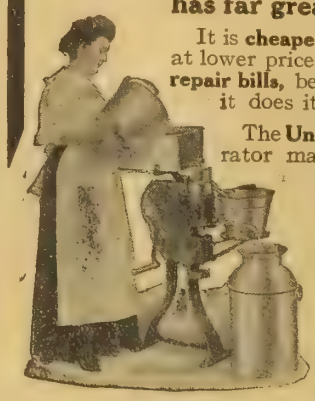

It is **cheaper** in the end than Separators selling at lower prices, because there are practically no **repair bills,** because it does **better work,** because it does it **easier.**

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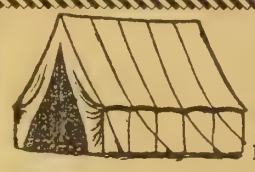

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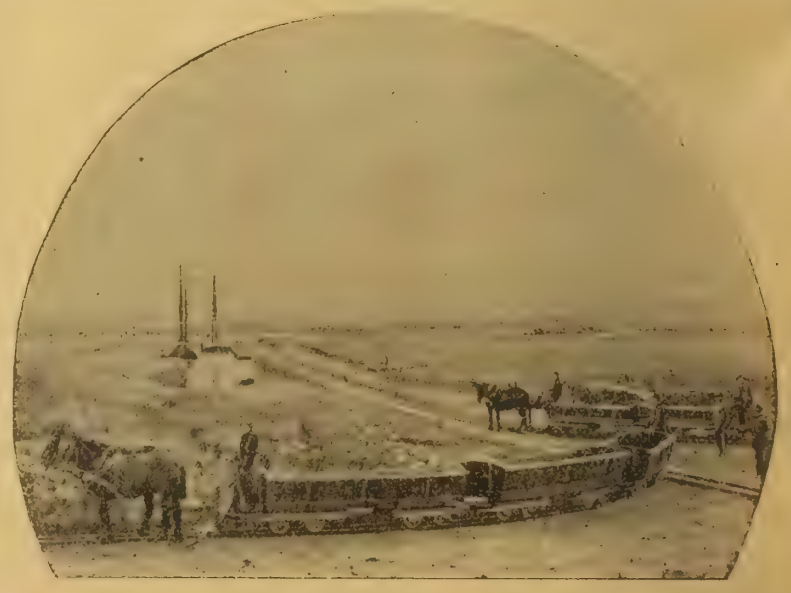

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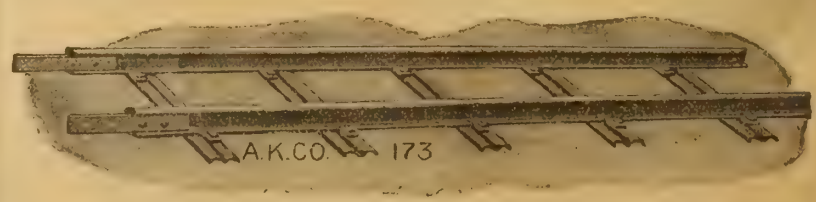

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California Cultivator

Vol. XXXII—No. 24 Los Angeles, California, Thursday, June 17, 1909 Subscripiion $1 a Year

Forestry in Other Countries

Practical Ideas on Forestry Gathered from Other Countries by Gifford Pinchot, Forester of the U. S. Department of Agriculture

EXCEPT China all civilized nations care for the forest. Until recently the United States ranked nearly with China in this respect, and our country still remains far behind the progressive modern nations in nearly all that relates to the protection, preservation, and conservative use of the forest. Japan has a well-developed forest service and a national forest school. In Austria, Italy, Norway and Sweden government forestry is a well-established portion of the national life. Turkey, Greece, Spain, and Portugal give attention to the forests. Russia, dealing like ourselves with vast areas of forests in thinly peopled regions, but by methods wholly different from our own, is drawing enormous revenues from the systematic care and use of the forests. In Germany the scientific treatment of forests has reached, perhaps, its highest development. The foresters of France have perfected a most practical and effective general system of forestry and have created the difficult art of controlling the floods of mountain torrents by planting trees. The Republic of Switzerland, by the use of methods most instructive to citizens of the United States, has developed a type of government forest policy more worthy of our attention and imitation than any other in Europe. In Australia and New Zealand forestry has already made important advances. In Canada the English have made real progress in forestry. The Government sells the timber from its forests, but retains possession of the lands and employs fire guards. At the Cape of Good Hope they have an excellent forest service. In British India they have met and answered many questions which still confront the American forester, and in a little more than thirty years have created a forest service of great merit and high achievement. The United States has scarcely yet begun.

The Forest In Early Times.

In very early times the forest was preserved for the game it contained. Forestry then meant the art of hunting, and had very little to do with the care of trees. Even the word "forest," which really comes from the Latin foris, meaning out-of-doors, was thought in England to be derived from the fact that it was a place given up to wild animals for rest. But gradually the forest came to be considered more than the game, and the serious study of forestry begun.

Modern Forestry.

Forestry as a science is of comparatively recent origin, although a work in which all the European trees are described was one of the earliest printed books. Until the end of the eighteenth century forestry was discussed chiefly by men who were either scholars or practical woodsmen, but who were not both. Then appeared Hartig and Cotta, two men who united these points of view, and their writings are at the base of the whole modern growth of the subject. Both were German. Each covered the whole field as it was then understood, and together they exerted an influence which has not been approached by any other authors since. From Germany their teachings spread to France, and early in the nineteenth century their doctrines were introduced into the French Forest School at Nancy by Lorentz, who, with his successor, Parade, was the founder of modern forestry in France.

Under the feudal system, which was finally destroyed in France by the revolution of 1789, the forest was the property of the feudal lord. In order to make the life of his serfs, who were useful both as taxpayers and as fighting men, easier, and so increase their number, he gave them the privilege of taking from his forest the wood which they required. For similar reasons the wealthy religious houses, like that of the Grande Chartreuse, made grants of land and of rights in the forest. But after a time the number of peasants increased so much that their wants absorbed nearly the whole produce of the woodlands. Then it was found necessary to limit the prescriptive rights to forest products by restricting them to certain parts of the forest, or to make an end of them by exchanging them for the absolute ownership of smaller areas. Thus many of the communities, to which, and not to individual peasants, these rights belonged, came to possess forests of their own. But the communes, as they were called, managed their forests badly, and about three hundred years ago the Government was forced to intervene. Under the management of officers of the government forest service, the results from the communal forests have been excellent. At present these forests not only supply fuel to the villages which own them, but in some cases they produce enough to pay all the village taxes as well.

Germany.

Germany still holds the high position in forest science which began with Hartig and Cotta. The German forest schools, of which there are seven of the higher grades, are still among the very best, and the study of forestry, both in the schools and in the forest experiment stations, is eagerly pursued. The forests in Prussia, Saxony, and other German States are admirably managed, and yield important returns. The total value of the German forests, public and private, is said to be about $4,500,000,000.

France.

Forestry in France has long been associated with the names of famous men. Henry of Navarre and his friends and minister, Sully; Palissy, the great potter, who called the neglect of the forest prevalent in his time "not a mistake, but a calamity and a curse for France," Colbert, the minister of Louis XIV; the botanist Duhamel du Monceau; Buffon, the celebrated naturalist, are among the men to whom France owes the rise and progress of her present excellent forest policy. Their peculiar service was to lay the foundation, both in law and in public opinion, upon which modern forestry in France now rests.

The forests of the French Government are admirably managed. They cover only about 2,750,000 acres, but they yield a net return each year of more than $2 per acre. Besides handling their national forests with great intelligence and success, the French foresters have done much for the general progress of forestry. They developed the art of reforesting denuded mountains, and were the first to plant trees on moving sand dunes along the seashore. More than 150,000 acres of these dunes, which once were blown about by the wind until they overwhelmed great stretches of fertile ground, and even threatened to bury whole towns, are now covered with forests of pine, and produce great quantities of turpentine, lumber, and charcoal.

Switzerland.

In Switzerland forestry received attention from very early times. Nearly two hundred years before the discovery of America the city of Zurich began to make rules for the protection and management of the Sihlwald, a forest which it still owns, and which now yields an annual return of about $8 per acre. In the Canton of Bern a decree of the year 1592 warned the people against the wasteful use of timber and provided for the protection of the forest along various lines. It also directed that for every tree cut down a young one should be planted in its place. It is curious to find this mistaken prescription for the ills of the forest already in fashion more than three centuries ago. To save the forest every old tree must be replaced by many young ones.

The first general forest law of Bern was passed as early as 1725. It embodied the most important principles of wise forest legislation as we know them today. But this was only one of a long series of forest laws in which, from the beginning, the idea of the importance of the forest to others besides its owner became steadily stronger. The citizens of Bern have grown ever more willing to place restrictions on themselves for the benefit of the Commonwealth.

There were great floods in Switzerland in 1834, and they were the cause of a general awakening of interest in forestry. Somewhat later a federal forest commission was appointed. Since the appearance of its final report in 1861 the progress of forestry in Switzerland has been steady. In 1875 a federal forest inspector was appointed, and a year later the first Swiss forest law was passed. This law does not extend to the whole of Switzerland, but only to the Alps and the steeper foothills. In a country of steep mountains it is of first importance to guard the forests on the higher slopes. Consequently all the forests on these higher lands which serve to protect the lowlands against floods, avalanches, and other similar dangers of wind and weather are put in charge of the Swiss federal forest service.

A Great Saying Of Landolt.

"Our forest laws," said Elias Landolt, a great and simple man, whose name stands first among Swiss foresters, "are intended to work more through instruction, good example, and encouragement than by severe regulations. This method is somewhat slower than one which should involve harsher measures, but the results achieved are more useful and lasting. When forest owners do something because they are convinced of its usefulness it is done well and with an eye to the future, but what they do under compulsion is done carelessly and neglected at the first opportunity. What they have come to learn in this way and have recognized as good will be carried out, and that better and better from year to year."

British India.

For many years after the British conquest, forestry in India made very little progress. Much time was wasted in half measures, until in 1856 Doctor (now Sir Dietrich) Brandis was put in charge of the teak forests of Pegu. He acted at

(Continued on Page 692.)

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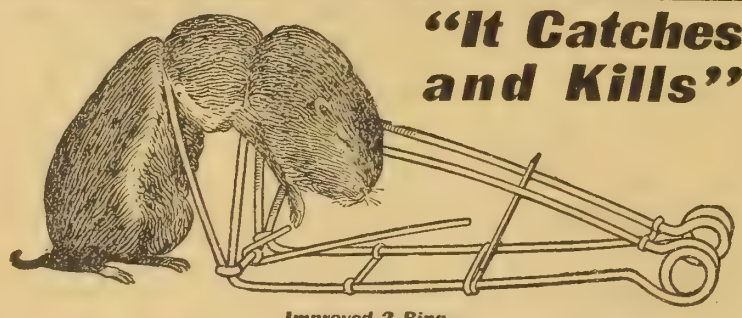
Prices, specifications, hydraulic data, and general information furnished upon request.



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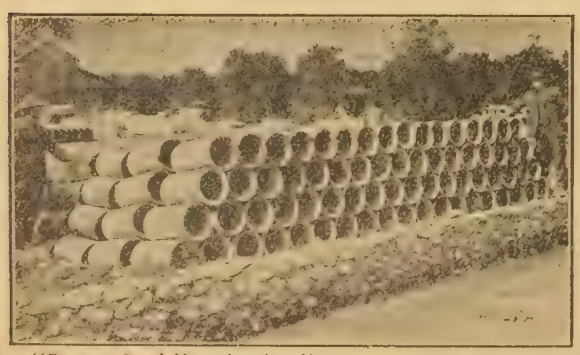


From photograph showing amount of

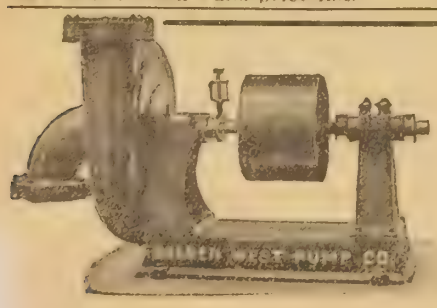
Ten-Inch Pipe

made by four men from 10 bbls. of cement in 9 hours — 280 two-foot joints, or 560 feet. This pipe was made with the

"K T" Moulds

An equal amount can not be made with any other tools in the same period of time. Write for "Brown Book" and price list.

THF KELLAR-THOMASON MFG. CO., Covina, Cal



Golden West Pump Co

311 Harriet Street San Francisco, Cal.

Manufacturers of

Centrifugal and Deep Well Pumps, Foot, Check and Flap Valves, Long Sweep Flanged Elbows, Pipe and Casing Flanges, Pipe Saddles, Pipe Clamps, Etc.

Write for prices.

With the Citrus Growers

FLORIDA FRUIT EXCHANGE ASSURED.

MANY orange growers will be interested in the result of the trip of the Florida orange growers to California. Growers from all parts of that State gathered at Tampa on June 1 and from the Florida Fruit and Produce News we take the following extract:

The Florida orange growers will have an organization modeled after the successful California Fruit Growers Exchange and it will cut a large figure in the handling of the next season's orange crop.

So much was determined at the big rally of orange growers who met at Tampa Tuesday and Wednesday of this week, where they assembled, according to pre-arranged program, to hear the report to be made by Dr. F. W. Inman and the other members of his committee which recently returned from a visit to the orange growing district of California where they pursued their very thorough investigations. The following is only a brief outline of what was done:

Committee Meets.

The members of the California committee held a short session previous to the formal opening of the convention so as to get their reports in proper shape. As the convention was a continuation, or a reassembling of that held at Tampa earlier in the year under the initiative of the Florida Orange Growers' Company, J. W. Sample, of Bartow, called the meeting to order at 10 a.m. Tuesday, June first, when the Casino was well filled with some 400 or 500 auditors, all wearing orange colored badges, which had been provided by the publishers of the Florida Fruit and Produce News. A registration book also had been provided, and the delegates, as they entered the hall, each inscribed therein his name and address. An examination of this list revealed the presence of very many of the most prominent growers from all sections of the state.

Soon after the meeting had been called to order, Josiah Varn, of Bradentown, resigned as secretary and Charles H. Walker secretary of the California committee, was elected in Mr. Varn's place. Prominent figures on the stage with President Sample were Dr. F. W. Inman, of Florence Villa, chairman of the committee which visited California, and at whose suggestion and very largely through whose efforts the organization of the orange growers here was accomplished, and Col. Thomas Palmer, of Tampa, who accompanied the committee to California as its legal advisor.

A general committee on organization was appointed.

At a later session of the convention the matter of expenses of this committee was brought up. It was stated that about $2,500 would be required for incidental expenses, and more than this sum was subscribed in a few minutes by those present.

On the second day of the convention, the committee on organization made its report. After very careful deliberation of all material available, they had decided upon the following men to compose the executive committee, upon whom the chief work of organization in all its details will fall. The executive committee is composed of Thomas Palmer, Hillsborough, chairman; Eugene Holtsinger, Polk; W. S. Gray, Marion; W. C. Temple, Orange; W. A. Fulton, Hernando; J. W. Sample, Polk.

The committee's headquarters will be in Tampa and it will hold its first important meeting on Friday, June 18, by which time all the preliminary details as to legal formalities will have been attended to.

Telegrams were sent to the Legislature demanding the passage of the Humphries bill, providing for the organization, management and co-operation of agricultural, (viticultural) and horticultural non-profit co-operative associations. This bill passed the senate on Tuesday night, and was passed by the house on Thursday.

The executive committee at its meeting two weeks hence will have articles of incorporation prepared which are to be signed by representatives from each county interested, who will go to Tampa on the 18th for that purpose. It is probable that at this time some arrangement will be made with the officers and stockholders of the Florida Orange Growers' Company, of which Josiah Varn is president, to merge the interests and identity of that organization into the new Florida Citrus Exchange.

REGARDING THE CITRUS TARIFF.

The Dingely tariff act took effect July 24, 1897—1 cent per pound on citrus fruits.

For the year 1897-98 California produced 15,153 carloads of citrus fruit, of which 1166 cars were lemons and 13,987 cars were oranges.

The growers, now between 9,000 and 10,000 in number, with 100,000 acres planted, will receive this year upward of $20,000,000, less packing charges, for their crop, while about $13,000,000 is paid the transportation companies for freight and refrigeration.

The greater part of this fruit is grown upon land that twenty-five years ago was thought to be a part of the great American desert.

For the year 1900 there were 7685 carloads of lemons consumed in this country, of which 1447 cars were California grown, and 6418 cars, or 82 per cent, were imported. The consumption has steadily increased until this year (1908) we have consumed 12,110 cars, of which 5000 cars were California grown, and 7119 cars, or 59 per cent, were imported.

The digging out of lemon orchards because of poor returns to growers a few years ago was stopped and an incentive given for planting new orchards, by a favorable freight rate which does not apply to oranges.

The imports of oranges have gradually decreased from $1,097,596 in 1899 to $275,060 for 1908, while the domestic exports of oranges have increased from $282,313 in 1899 to $1,577,661 in 1908—principally to the Canadian provinces and the northwest.

The foregoing figures indicate that we are now producing more oranges than are consumed in this country, but only 41 per cent of the lemons.

The retail dealers are offering lemons to consumers at from 8 to 20 cents per dozen, as shown by printed newspaper advertisements from many states; this indicates the tariff has not increased the price unreasonably to consumers, nor would it do so if the tariff on lemons were doubled; an additional half cent per pound on lemons could not affect the price over

RED SPIDER

One of the Worst Pests Known to Citrus Trees

Is in abundance in Southern California at this time of the year. The Board of Horticulture recommends Sulphur to combat this pest.

Imperial A Resublimed Flowers of Sulphur

Contains more Sulphurous Acid than any other Sulphur on the market, thus making it superior to all other brands. Write for samples. The price is right.

GERMAIN SEED AND PLANT CO.

326 S. Main St., Los Angeles, Cal.

TREES TRUE TO NAME — The SILVA-BERGTHOLDT CO. NEWCASTLE, CALIF. — PLACER NURSERIES

FRUIT TREES

ALL STANDARD COMMERCIAL VARIETIES

The best that good care can produce

Write us now concerning your Fall and Winter Planting

AGENTS WANTED

The Silva-Bergtholdt Company

115 Orchard Street Newcastle, California

All About the Orange and Lemon

Is told in our new book on Citrus Culture, embracing every phase of the subject from the seedling plant to the final disposition of the fruit in the Eastern market. The largest and best book on the subject ever printed —60,000 words, 100 illustrations. You will want a copy, which we will send you for the small sum of 25 cents. Remember we are the largest growers of orange and lemon trees in the world.

THE SAN DIMAS CITRUS NURSERIES

San Dimas, Cal.

Hydrated Lime

1 part Taylors Hydrated Lime
3 parts best Resublimed Flowers Sulphur ..... } mixed in a common mortar box

Has given highly satisfactory results in many orange groves, gone over by several different contractors using largest power machines, as a dry spray for the

Red Spider of the Orange

Sulphur alone is too strong and does damage by burning. Hydrated lime remedies this and is the ideal diluent and vehicle for the sulphur—and reduces the cost.

$15.00 a ton net in 100 lb. sacks. Sacks 15c extra.

W. H. TAYLOR 846 Commercial St. Los Angeles, Cal.

Orange Trees For Sale

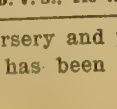
Dormant buds, Navel and Valencia.

J. S. Killian, El Monte, Cal.

Phones: Sunset, 8x4. Home, Red 31, or,

L. C. Rice, Tropico, Cal.

Phone Sunset Glendale, 263

BOOK  **ON**

DOG DISEASES

AND HOW TO FEED

Mailed FREE to any address by the author.

H. CLAY GLOVER, D. V. S., 118 W. 31st St., New York

A large nursery and plant introduction garden has been established at Honolulu,

1½ cents per dozen on 300s, or 1¼ cents per dozen on 360s, and would so stimulate the industry that in the next ten years we would supply every demand for consumption in this country—just what was promised would be done with oranges eleven years ago.

Citrus fruits are perishable and must sell daily for what they will bring—over 40 per cent. are now sold under the hammer at public auction.

Our principal competitor in lemons is Italy, with orchard labor at 30 cents per day (our money) and a freight rate of 24 cents per box to New York. In regard to oranges, Italy and the West Indies are the largest exporters to this country, yet we have good reasons to guard against Mexico; orchard labor ranges from 30 to 50 cents per day in these countries, while we pay $1.50 and $1.75 per day in California.

GOPHERS.

The pocket gophers live almost entirely under the ground. They are light brown or yellowish in color, the front feet are fitted with long claws especially for digging, and the skin on either side of the head is folded into deep pockets. Ground squirrels, of which there are several kinds, are often called gophers. These little animals are rather slender and very active. They are often seen running about the fields.

The pocket gophers are quite easily killed with poisons. The United States Department of Agriculture gives the following formula for this:

Dissolve one ounce of strychnia sulfate in a pint of boiling water. Add a pint of thick sugar syrup. Scent this mixture by adding a few drops of oil of anise. Steep a half bushel of corn in hot water and allow it to soak over night. After this, drain it, and allow to soak for several hours in the poisoned syrup.

Many mounds are commonly made by one gopher and are connected by one runway. The laterals leading to the mounds are commonly filled with loose earth. Select the freshest mound and follow the soft earth back till the main runway is reached. Push the poisoned grain well back into the runway and close the opening in such a way as to prevent dirt from clogging the runway. This may be done by first putting in a handful of grass and covering with earth.

In territories where the ghopers are numerous, the co-operation of neighbors is desirable. Attention should also be given to waste lands, since these are sources of infestation.—S. Arthur Johnson, Colorado Agricultural College.

COST OF ORANGES.

The cost of producing a box of California oranges as gathered from a large number of growers and packers, exclusive of interest, is given as follows:

Cost of labor per box, 59 cents.

Cost of material used in growing and packing, 46 cents. Total cost per box, $1.05.

Cost of transportation to eastern market, including 10 cents for ice, 93 cents.

Total cost per box on eastern markets, $1.98.

Refrigeration costs 20 cents per box—for 1907, 58 per cent of orange shipments were shipped under refrigeration.

The cost of producing a box of oranges in Italy is 65 cents.

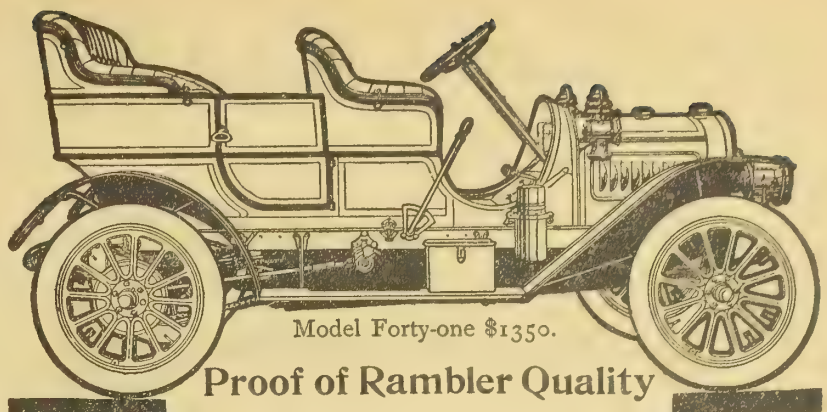
Cost of transportation to New York, 25 cents.

Total cost of foreign oranges in New York harbor, per box, 90 cents.

They pay a duty per box of 72 cents.

Total cost on the market, per box, $1.62.

An advantage still in favor of the foreign grower of 36 cents.



Model Forty-one $1350.

Proof of Rambler Quality

is found in our farm folder which you should read carefully before buying any other automobile. It contains indisputable evidence in the shape of letters and actual photographs, of Rambler economy, Rambler quality, Rambler utility, and proves that the Rambler is the standard automobile for farm use and the best for all roads.

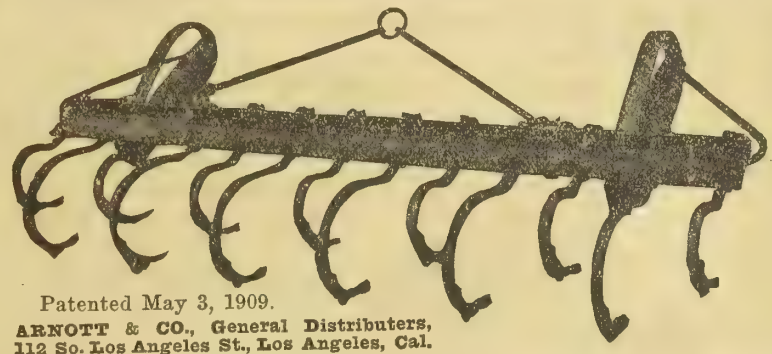
This **Rambler** has 15¾ in. clearance between the axle and the road, long wheel base, big wheels and big tires, power plant and transmission completely enclosed, but every vital part easily accessible. It is simple to operate. Any woman can handle a Rambler with ease.

The Car of Steady Service

Get the proof of Rambler quality by writing today for farm folder No. 156 It is free and the information it contains will prove interesting and instructive.

Thomas B. Jeffery & Company
Kenosha, Wis.

WILLIAMS' GOOSE-NECK CULTIVATOR



Patented May 3, 1909.

ARNOTT & CO., General Distributers, 112 So. Los Angeles St., Los Angeles, Cal.

Especially adapted for citrus orchards. Sizes 7 to 14 ft. Lightest draft. Write today

WILLIAMS & SON, Mfrs., Orange, California

The Roessler & Hasslacher Chemical Co

100 William Street, New York
Works: Perth Amboy, N. J.

ROESSLER & HASSLACHER CHEMICAL COMPANY — CHEMISTS — NEW YORK

CYANIDE guaranteed 98-99% for generating HYDROCYANIC ACID GAS

The only positive eradicator of the SAN JOSE SCALE, RED and BLACK SCALE and other insect pests

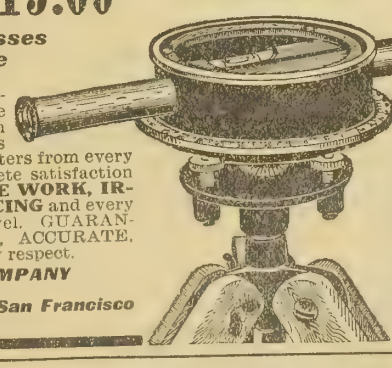
FOR SALE BY

F. W. BRAUN - Los Angeles and San Francisco
HAAS BARUCH & CO., " "

BOSTROM'S $15.00 FARM LEVEL

With Magnifing Glasses in the Telescope

enables you to read Target at a distance of over 400 yards, therefore the problem of a FARM LEVEL with TELESCOPE at moderate cost has at last been solved. Voluntary letters from every State in the Union show the complete satisfaction it gives for all kinds of **DRAINAGE WORK, IRRIGATION, DITCHING, TERRACING** and every sort of farm work requiring a Level. GUARANTEED to be absolutely SIMPLE, ACCURATE, DURABLE and dependable in every respect.



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Coast Agents
581 Market Street - San Francisco
Write for Booklet

Complete outfit with full **instructions**, shipped anywhere C. O. D. **$15.00** and express charges. **Subject to Examination.**

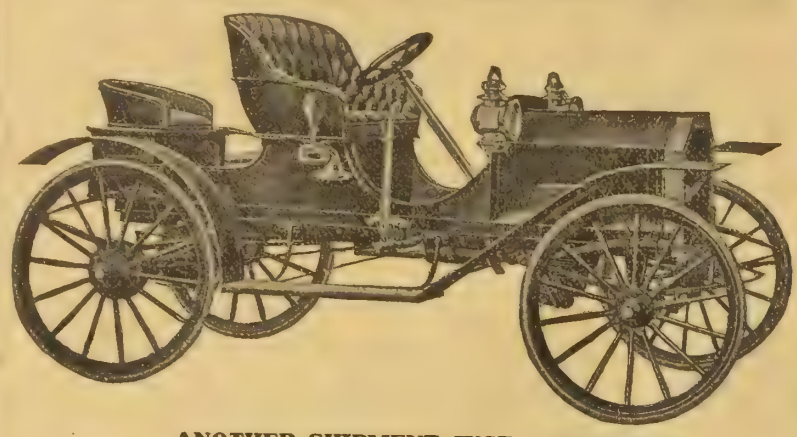
Washington Navels, Valencias, Eureka Lemons

Large orange seedlings for orchard planting.

Southland Nurseries, F. H. Disbrow, Prop'r.

Phones: Home 2520; Main 949 **R. F. D. No. 1, PASADENA, CAL.**

WESTCOTT



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Have you had full particulars about the **Westcott?** Have you examined it? Have you ridden in it?

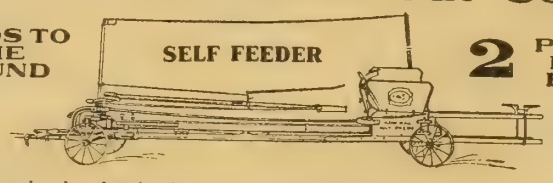
Information furnished and demonstrations arranged for by

AUTOMOBILE DEPARTMENT

Newell Mathews Co. Los Angeles and Market Sts. Los Angeles, California

An Admiral Without Cost

3 FEEDS TO THE ROUND



2 PROFITS IN HAY BALING

Ask for circular showing how the press will pay for itself the first season.
If you want a press, write or call on us and get our prices and terms.
For references as to what the Admiral is, "Ask anyone who has one."

$250—New Century Hay Press Specially built Season of 1909. **—$250**

All kinds of Wagons, Buggies, Implements and Tools. Catalogues upon request.

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GO TO

Lake Tahoe

High Up in the Sierra Nevadas

Where you may fish, hunt, ride, drive, sail and enjoy all the pleasures that abound at this famous resort.

$23 Round Trip

From Los Angeles, Saturdays, June 26, July 3, 17, 24, 31

Limit for return, 21 days—with stopover privilage at San Francisco on return trip. Also at Merced, in order to visit Yosemite Valley.

Proportionate rates from Santa Barbara, Ventura, Oxnard, Long Beach, San Pedro, Santa Ana, Pasadena, Pomona, San Bernardino, Riverside and Redlands.

Ask for literature and details.

600 So. Spring Street, Cor. Sixth

Arcade Sta., 5th St. and Central Ave.

Southern Pacific

Deciduous Fruit Culture

By J. W. Mills

A GOOD FARMERS' CLUB.

EVERY time the farmers get together and talk some good is accomplished. We have heard the expression that "Farmers resolute a whole lot more than they do." This may possibly be true and, in fact, we have attended some of the conventions of the state when important matters were discussed and committees appointed to continue the work which the discussion had started, and there the whole matter "petered" out. But notwithstanding this, it is something to inspire the farmers to make strong resolutions, and there always comes some good, and often great good, from these meetings. Whether at meetings of the local grange, state conventions, institutes, or farmers' clubs, inspiration is given to some to set a higher standard for their agricultural or horticultural work for the coming year and live up to the standard.

We believe one of the best of these organizations in the state of California is the Claremont Horticultural Club. It not only takes in the people immediately around the town of Claremont, but has members from many other sections of eastern Los Angeles county who join in the discussions. This club is one of the oldest in the state and has to its credit the inauguration of many movements which have been state wide in their influence. It holds monthly meetings except that during the summer a vacation of three months is taken. The closing session of the year is usually the second Monday in June and the opening session, we believe, the last Monday in September. Both opening and closing sessions are made picnic occasions. The closing session for this year was held last Monday at Ganesha Park in Pomona. Luncheon was served, or rather dinner, for it was a good full meal, such as only farmers' wives know how to prepare.

This club has always taken great interest in such laws and political movements as affect the farming communities. One of these laws in which it has recently manifested great interest is the new law relating to the appointment of one horticultural commissioner in place of the three formerly prescribed. The club has taken an active part in pressing the candidacy of Prof. Cook, President of the club, for member of the examining board. Before it took this step it had pressed for the enactment of the law as introduced into the assembly.

That draft of the act provided that the board to examine candidates for these county commissioners should be made up by one appointment each by the state horticultural commissioner, president of the state university, and governor of the state, but the lobby of the legislature—at least so it was charged at this meeting Monday—worked to the end that the appointments for the entire examining board should be in the hands of the governor.

Mr. Fred J. Smith, one of the committee having charge of the work for the support of the bill as introduced, reported to the club that his committee had done all in their power to get the bill carried as presented, but that the political pressure had been too strong for the committee to carry it through without the amendment which deprives the law as passed of most of its benefit to the fruit growing interests. Mr. Smith also reported that the committee had been before the supervisors of Los Angeles county and made an appeal to them not to appoint anyone under the recommendation of the examining board unless such candidate were acceptable to the fruit growers of the county. This was pledged to the committee and resolutions passed accordingly, and it is now hoped that the commissioner when appointed will be a true representative of the horticultural interests of the country and not a politician. The feeling expressed at the meeting was exceedingly strong against any political machine having control over so great an industry as is the orange industry of the county in which the club members reside.

One point of immediate and more local interest discussed was as to the extent of the damage done by the recent hot spell in causing excessive dropping of the young oranges. Some members tried to take an optimistic view of the situation and claimed that the damage would be slight—much less than anticipated. Others who were not so optimistic maintained that the fruit was "all" on the ground. However, after quite a discussion, the prevailing sentiment seemed to be that while the hot weather had caused great loss to the next year's crop, there was still enough fruit left on the trees that if no further unfavorable weather was experienced, the output for the coming year would not be a total failure.

Papers relating to the cultural conditions were read, and an address given by former President Gates of Pomona College, on social conditions as he saw them in New Zealand and Australia.

Notwithstanding the wide influence exerted by this club, as mentioned above, its membership is only about one hundred, but it must be confessed that all the one hundred are alive and in heartiest sympathy with every movement of the club. Prof. A. J. Cook of Pomona College is President of the club and V. V. Le Roy is secretary.

COLORADO FRUIT PROSPECT.

So far as one can judge at this season of the year, the prospects for a large fruit crop throughout the State were never brighter. True, some damage was done by frosts early in May, but as a whole, the various localities in the State, with but very few exceptions, have come through the critical period with flying colors. Taking the State as a whole, there is promise of at least 75 per cent. of a full crop of peaches and at least a 90 per cent. crop of apples. If these promises are fulfilled it will mean the largest fruit crop by far that the State has yet produced and one which will tax the growers, as well as the railroads, to the utmost to take care of.

Some valuable lessons have been learned, all of which tend more and more to put the growing of fruit upon a stable basis. We now know that no locality in the State is entirely immune to damage from frost. Orchards, which heretofore have escaped, suffered some injury, while those in more exposed locations in the same

locality were not damaged in the least.

The value of orchard heaters was again demonstrated and the superiority of oil over coal as a fuel for this purpose has been clearly shown. A satisfactory coal pot may perhaps be constructed, but the experience with the present forms tend to show that coal fires are too slow to start and that the pots require too much attention to keep an even fire burning. —W. Paddock, Colorado Agricultural College.

GREAT INTEREST IN NUT CULTURE.

A few days ago the Georgia-Florida Nut Growers' Association held its annual meeting at Cairo, Ga. Last year it met at Monticello, Fla., and among other things took stock of the acreage planted in budded and grafted pecan trees in Western Florida and Southwest Georgia and found it to aggregate over 6000 acres. At the Cairo meeting these statistics were brought up to date and showed a total above 10,000 acres or an increase of 4000 acres in one year, or 65 per cent. The reports from nurserymen indicate a still larger increase for next season, as fully twice as many orders are booked than was the case a year ago. As far as popular data is obtainable, this section of country leads the world in this popular industry.

The eighth annual convention of the National Nut Growers' Association will be held at Albany, Ga., October 12, 13 and 14, 1909.

The light eastern fruit crop is probably responsible for the good returns which most of the orchardists are receiving this year.

At It Twenty-Four Years

THE subject of our sketch, Mr. Wm. Gregory, came to California in 1885, or twenty-four years ago. Shortly after this he located in Redlands and engaged in the sale of windmills and gas engines.

Mr. Gregory has always taken a great interest in ranch life and this, more than any one thing, enables him to supply the rancher with the best the farm needs.

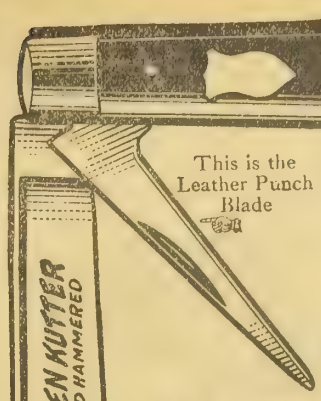
Something like ten years ago Mr. Gregory moved to Los Angeles and established himself in the gasoline engine and windmill business just north of the Plaza at which location he can be found today. At that time he took the selling agency for the White & Middleton and the Little Wonder gas engines. As to the merits of these goods it is useless for the Cultivator to make comments, as they have been before the people so long and so many of our readers are using them that we feel that comment would be wasted.

Several years ago Mr. Gregory, seeing the usefulness of the automobile to the rancher, took the agency for the Moline Limited automobile. This, with his line of engines and windmills, places him in a position to look after the wants of the rancher in the line of power and transportation.

During the past twenty years Mr. Gregory has seen great changes in California. Deserts converted into productive orange groves, prosperous ranches sprung from sage brush plains, and water brought from the mountains and from the earth have made California to blossom as the rose.

A look at his face will make the reader good natured. In fact he is a pretty good natured fellow to deal with.

Mr. William Gregory.



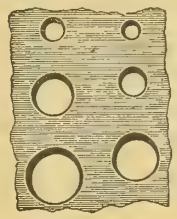
This is the Leather Punch Blade

Handy Knives

A real pocket-knife—an all-round knife—must be ready for all sorts of work. No other tool is put to so many different uses. Yet how seldom do you get one that fills the requirements.

KEEN KUTTER
Pocket Knives

This illustration shows the actual size of holes that may be cut with the leather punch blade.



are made to do all-round work. And there are Keen Kutter Pocket Knives for all sorts of work. For example: the large knife here illustrated has a leather punch-blade, invaluable to farmers and horsemen. The edge is curled over so that when the knife is turned it cuts a clean hole. All Keen Kutter Pocket Knives are guaranteed. If not satisfactory your money will be returned. If not at your dealer's, write us.

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SIMMONS HARDWARE COMPANY
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St. Louis and New York, U. S. A.

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Not too Light
But Just Right

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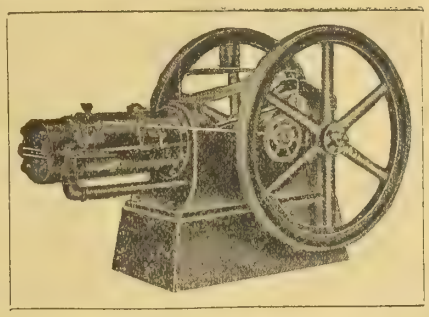

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who have used our goods once, will always come to us for their fertilizers. We are making a special study of plant life and are therefore in a position to manufacture fertilizers that exactly meet the requirements of each plant. Let us know what you intend to plant, and we will name your special compositions. Write for our new booklet "The Farmers Friend," for 1909.

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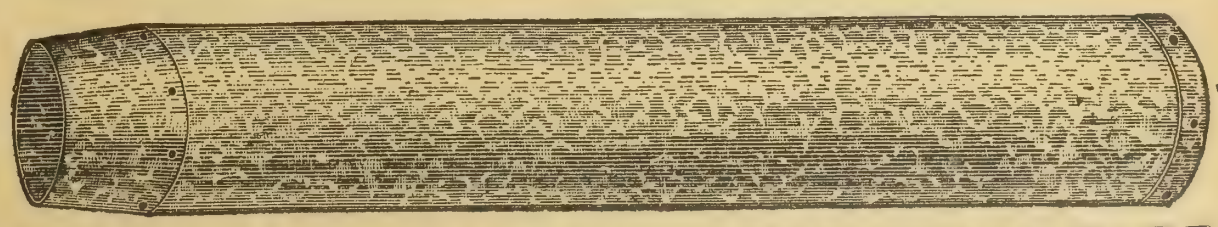

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The **only** way to **irrigate Alfalfa. Cheaper** than **Flumes.** This is only **one** of our **specialties.** We make **Riveted Water Pipe** in lengths of **ten feet** from **single sheets.** Let us **prove** to you that we make **Pipe** and **Tanks right.** WRITE FOR CATALOGUE.

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FORMERLY TALLERDAY MANUFACTURING COMPANY
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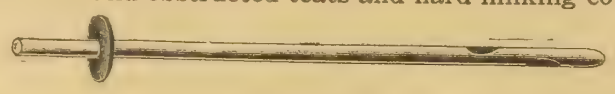
CATTLE INSTRUMENTS

Milking Tubes

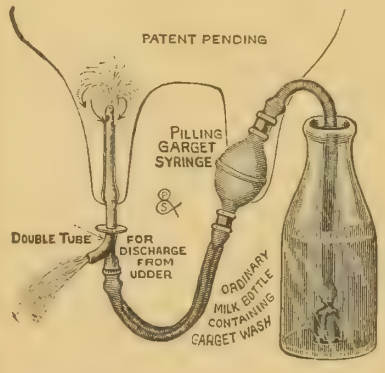
For sore and obstructed teats and hard milking cows



PLAIN

WITH RETAINER

	NICKELED	NICKELED WITH RETAINER	SILVER	SILVER WITH RETAINER
1¾ inch		$0.35	$0.50	$0.55
2½ "		.35	.65	.75
3¼ "		.40	.95	1.05
4¼ "		.50	1.25	1.35



Garget Outfits

Pillings

The Pilling Garget Outfit is made on scientific principles. It is easy to use and every dairyman should have one. This outfit is the best method for treating inflammation of the udder, which causes garget in milk.

Pilling's Garget Outfit, $4.00

Teat Openers

For opening obstructed teats. 4½ inch Nickel Plated, each - $0.75

Stricture Cutters

For cutting strictures in cows' teats. No. 1, with full instructions, each $3.00

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For bloated cattle.
Nickel Plated, each, $1.50
Extra Shields, " .25

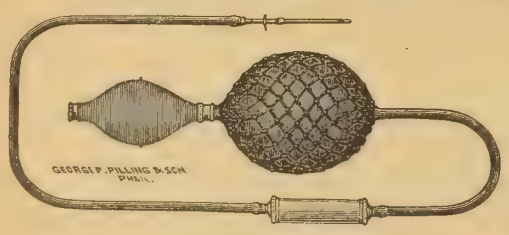
Ear Tag or Marker $5.00 per 100

OPEN

Punch $1.50

CLOSED

Milk Fever Outfits



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Live Stock and Dairy

By Mrs. Minna E. Sherman

Dairymen and stockmen are requested to write of their experience. Mrs. Sherman is always willing to answer queries and this, with experience of other workers, will make this department of greater value.

ONE COW.

THERE are at times abnormal conditions that make the cream impossible to churn, then pasteurizing will help make good butter. Heat the cream to 160 degrees and wrap the can to hold that temperature for half an hour. Then cool down to seventy and add some good butter milk or clean flavored sour milk. A quart to three gallons of cream is sufficient. If you can secure this starter from a neighbor it is better, provided, of course, the neighbor has good butter. After that keep a small portion of the butter milk and put it into the cream can, adding the cream as it is skimmed. Churn often and do not try to keep the cream too long. The starter may be home made by going to the barn and, after milking the first few squirts of milk on the ground, milking directly into a sterilized mason or fruit jar, at once putting on the top and placing the jar in a moderate temperature of seventy to sour. Then use the clabbered milk for a starter.

Little by little the cherished ideas of the milk man fall. At one time it was made illegal to serve milk that had not been run over an aerator; now we have learned that if the milk is bottled up at once from the cows, and then chilled, it will after twenty-four hours show lower bacterial count than milk that has been aired. The long keeping milk bottled warm from the cows, that went from the United States to Paris Exhibition was, after twelve days, lower in count than the French milk that was only twenty-four hours old.

Churning.

The temperature should not be lower than 45 degrees, nor higher than 65 degrees for making butter, except in instances where everything is under control and experimental work is being done. A summer churning temperature of 55 degrees, and a winter one of 50 degrees is about what the average farmer's wife can secure. At 70 degrees the butter will come, but it will be greasy and never have the keeping quality. Twenty minutes of running the churn, at forty revolutions to the minute, will make better butter than quicker churning. The five minute churning of some cows will show great waste of butter fat in the butter milk as well as a poor quality of butter. The overripeness will have already tainted the cream and the butter will be rancid in a short time. Where there is only a small amount of butter made the cake mixer will make a good churn, or for still less amount a two quart Mason, or like type of jar, gives excellent results. The churn should never be more than scant half full, and one-third is even better. If the Mason jar is used, screw on the top and take in both hands placing one on the top, the other on the bottom and swing at the rate of forty times a minute.

Butter.

Where only one cow's milk is to be churned it is better to make it up oftener and in this small way, than to hold some of the cream until over ripe and have a larger quantity of poor quality. The removal of the milk and water from the cream by churning it and washing it leaves each butter globule coated with a film of water carrying enough salt to act as a preservative. This is no longer a home for bacteria and will not quickly grow rancid or ill smelling and tasting. Butter made often, and well salted can be kept in the spring until the scarce time comes. Nearly everyone that has one cow has an excess of butter at one time and a lack later on. The first year I was on the ranch I devised this little scheme that worked well. There were three fresh cows all at one time and too much butter. The butter was made into balls as large as could be put in the mouth of fruit jars, and as soon as a jar was filled, a good brine made by boiling and cooling the day before was poured in to fill the jar completely, and the top was put on and the jar wrapped in several thicknesses of paper. When six had accumulated they were burried four or five feet down in the ground where it kept cool. When the supply of milk became short, this butter was used and was found as good as though it had come out of cold storage.

Covered Milk Pails.

There are a number of good patents on the market and some that are worse than the open pail. Now if I am going to be poisoned with bacteria, I would rather choose nice fresh ones, newly hatched, as it were, than some antediluvian ones that had been confined to a crack in a dot of rancid milk for a week. The covered pail must have a cover that can be removed readily so that it can be given a good wholesome scrubbing. Then the cover and the whole pail should be made with pressed seams and no inside solder. The cow should have the hair clipped on her flanks and on her udder to prevent any dust or dandruff from hanging there to be dislodged into the milk pail. Avoid feeding hay during milking time and do not put it down after the cow is in the stable. It always brings more or less dust with it to light on things. Card the cow once a day and then wipe the udder before milking, and the milk will be clean and wholesome. I often feel sure that dairymen never look up! For, surely they would go after the cobwebs! I know they gather fast, but then they must come down, and if this is followed up for a time they will not be so bad. The breeding of spiders should not be part of the dairyman's occupation. He is learning fast not to breed flies and make the yards a nuisance. Now he must learn not to breed cobwebs. —M. E. Sherman.

To have pigs make good pork and plenty of it, they must be supplied with good material to make it of, and plenty of it.

Grow your own meat at home. Don't buy from the other fellow.

Cream Separators, all sizes, all prices. O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

FLY REPELLANT.

A subscriber recently called at the office and referring to former good things in the paper said that perhaps two years ago, a fly repellant was published which he had found of exceptional merit. We give below formulas printed in former Cultivators. Let us hear from subscribers who have tried either as to their success. There are others, perhaps much better ones offered ready prepared by the trade.

Sure it is that milk supply lowers when flies are thick.

Here is a formula described by Dr. E. L. Moore of the South Dakota Experiment Station which has been found to be quite effective. It is sprayed on to the animals by means of a small hand spray pump, one application being sufficient for two days. The longer between spraying the more thoroughly the animals must be gone over. The odor of the preparation does not taint the milk, according to the above veterinarian, but the milk must be removed from the barn at once after milking, which should be done whether a spray is used or not.

Fish oil	100 parts
Oil of tar	50 parts
Crude carbolic acid	1 part

Regarding the above, Mr. W. E. Dickinson of Eureka, Humboldt Co., writes: "In a recent issue I note you want to know about a fly repellant you described in June of last year. I have this to say, I bought the dope as per prescription, at a cost of $1.25, used it about a week and still have the remainder. It will fix the flies and gum up the hairs on cows like a sheet of tanglefoot fly paper. I prefer to use common coal oil or kerosene in a common hand spray. A very small amount of the spray will kill all flies, and the mist on the hair will repel them for 24 hours. I presume if much oil were used it would take the hair off, but I have used kerosene spray for cows for nearly three years and am satisfied with it. I am always afraid of tainting the milk, but never have done so.

Another Good One.

To four quarts of coal oil add one quart of fish oil and one pint of some good stock dip; place in some vessel which can be tightly closed and shake well so as to form a kind of emulsion before applying to the cows. The above amount will spray 20 cows once a day for two weeks, according to the writer, and it will absolutely keep the flies off the cows.

Such a preparation costs from 35 to 40 cents a gallon. The best way of applying the fluid is by using a sponge or a large cloth, which may be lightly passed over the parts of the cow on which the flies are most likely to settle. This can be done in much quicker time than might be supposed.

A Good Use of Tobacco.

A simple home made wash is; steep for some time one pound of tobacco stems to make when cool about three gallons. A little turpentine, or if there be no sores, a little coal oil may be added, say an ounce to the gallon. Wash the stock thoroughly, and lice, flies and other pests will have but little use for such animals for a short time at least.

Another.

Spray or sprinkle over the horse or cow a mixture of fish oil one quart and creoline 4 ounces.

MILKING MACHINE.

From a bulletin issued by the Nebraska Experiment Station we quote the following summary of observation on milking machines:

1. Heifers in their first lactation apparently give better results by machine milking than do aged cows that have been accustomed to hand milking for one or more years.

2. Some cows are not adapted to machine milking.

3. Alternate hand and machine methods of milking have a detrimental effect upon the milk flow.

4. Manipulation of the udder is absolutely necessary in some instances before all the milk can be drawn by the machine.

5. One man operating one machine can milk about the same number of cows per hour as one man milking by hand.

It was found that two machines in the hands of one operator insured the most satisfactory work. Only 30 minutes was saved by one man operating three machines in place of two when sixty cows were milked. This saving of time would not balance the lack of thorough work when the operator was using three machines.

7. Two men operating four machines can practically do the work of three men milking by hand.

8. One operator with two machines can milk between ten and eleven cows per hour, and two operators with four machines about twenty-one cows per hour.

9. It was found necessary to thoroughly wash and boil the milking machine parts after each usage, in order to produce milk with as low a bacterial content as that resulting from careful methods of hand milking.

10. Washing the machines at irregular intervals or simply drawing water through them will increase the bacterial content of the milk even above poor methods of hand milking.

11. The man operating the milkers must thoroughly understand the care and management of dairy stock. He should also be persistent in the attention to details in order to obtain the best results.

12. From these studies it would appear that the milking machines are fitted for large herds rather than small ones, and we believe it would be impracticable to install them where fewer than thirty cows are milked the year round.

Shoe Boils, Capped Hock, Bursitis are hard to cure, yet

ABSORBINE

will remove them and leave no blemish. **Does not blister** or remove the hair. Cures any puff or swelling. Horse can be worked. $2.00 per bottle, delivered. Book 6 D free.
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Pacific Coast Agent
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For Mehring Foot-Power Milking Machines see O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles,

A Sick Man is Likely to Display Bad Temper

He should not be blamed; he should be pitied. A **very** sick man in his delirium may make awful threats, but no one need be disturbed about them.

A **very** sick separator manufacturer is just at this time making some foolish threats about patent litigation and in his delirium is attempting some things which a rational man would not undertake, and which will only exhaust the little strength there is in him.

The Sharples Separator Company

is the strongest financially of any separator manufacturing concern and is the oldest in America. Every Sharples separator is sold under a guaranty of full and complete protection to the agent who sells and to the user who buys, against any and all patent infringement litigation of every character. We are thoroughly posted on all cream separator patents and every patented feature of a Sharples separator is controlled by The Sharples Separator Company. Any claim to the contrary made by a disgruntled competitor is without grounds and made solely for the purpose of intimidation.

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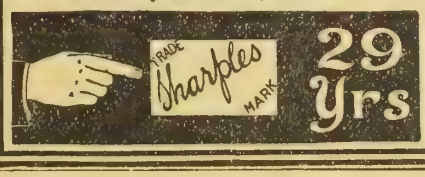
in a class by themselves, the highest type of centrifugal cream separator, entirely different from all others, and no competitor has ever claimed that Tubulars in any way infringed his patents. Tubular Cream Separators are sold to the best dairymen in the world, but there are some people who insist upon buying something cheap regardless of inconvenience, loss of time, trouble to keep clean and unavoidable repair bills. Those people buy disk separators and aim to buy the best disk separators obtainable. We are building and selling by far the best disk machine—our Jersey separator—the cheapest thing we build, but nevertheless a better separator than the best of other disk machines, and which we sell at a price far below what the aforesaid "sick man" is asking for an inferior machine.

That Is Where the Shoe Pinches

And that is why the "sick man" is threatening patent suits. It's easy to understand. If you want the best separator in the world, buy a Tubular; if you want the best disk separator, buy the Jersey, and bear in mind that we guarantee to protect you and hold you harmless against patent litigation from any and every source. Write for catalog 260.



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GEO. WINDELER, Prop
Water Tanks, Wine Tanks made from carefully selected stock by careful and experienced workmen. "Tanks that are well made last a long time." It will pay you to get my prices before buying.
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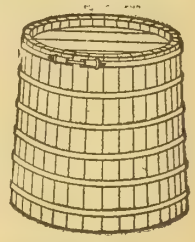

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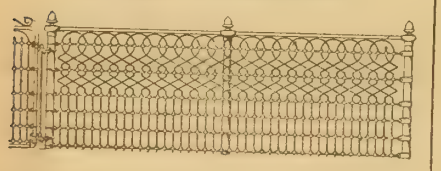

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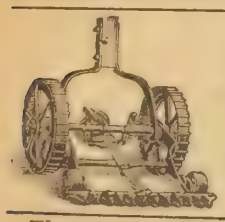

THE CLIPPER

Will cut tall grass and weeds and do all the trimming along the walks and drives. Your dealer should have them—if he has not drop us a line and we will send circulars and prices.

Clipper Lawn Mower
Dixon, Illinois.

The sugar factory at Glendale, Arizona, expects to begin slicing beets next Monday.

The Ornamental Garden

POINTS ON BEAUTIFYING THE HOME GROUNDS.

THE trees and plants surrounding the house are analagous to the frame of a picture and should be so arranged as to give a good background to the buildings and help to present a natural view of the place.

The soil in which the trees are to be planted is a very important consideration. If the soil is too sandy and gravelly, so as to be deficient in plant food, good success with trees will be hindered unless the soil be well fertilized. On the other hand, the soil may be too heavy but this condition can be overcome somewhat by the proper application of stable manures.

A good loamy soil is conceded to be the best for trees and ornamentals, and in some cases it would pay to haul this kind of soil to start the trees in.

The size of the hole to dig for the trees depends on the size of the plant. However, one rule can be given: Be sure to dig the hole large enough to accommodate all the roots without crowding them. Before selecting your trees, take a drive through the neighborhood to see what trees and plants are already growing with success in the yards of your neighbors; also write to your experiment station and get its list. From the two sources you can make a list of the ones that would suit your site best. Now you can go to your nursery catalogue and order your trees and plants with a feeling of assurance that they will grow if you give them the proper care and attention.

In ordering trees, do not select those that are too large, because it has been found that the best success has been secured with smaller trees.

All plants, to insure the best success, should be transplanted during the dormant season, and while they can be set out in the fall or winter, spring planting is preferable.

In transplanting, do not place the trees too close together or where they will obstruct the front view of the house. Plant shrubs and ornamentals in front of the trees, also near the house to soften the outlines, and in the sharp angles made by the walks or beds. To prevent shading of shrubs and ornamentals they should not be planted too close to the trees. When flowers are planted they should be placed in front of the shrubs, to finish the background. It is not a good plan to cut up the lawn in front of the house by trees or shrubs; a few small groups of shrubs planted in the proper places will break the monotonous outlines of the lawn.

After planting the plants they should receive good care and attention. Plenty of water must be supplied to them either naturally or artificially. The soil should never be allowed to become dry. The time to irrigate can be determined by examining the soil. If the soil around the plants cracks open too much after irrigating, the cracks should be closed by filling with soil or tamping it down. This should be done until the trees or plants are established.

Pruning the trees and shrubs should be practiced only when necessary. Plants should be pruned, to give them form, to remove extra growth and dead branches. The natural form of the trees, shrubs and ornamentals should be preserved as much as possible. Limbs removed should be cut off close to the trunk to insure quick healing of the wound.—J. E. Mundell in New Mexico College Press Bulletin

PROPAGATION OF SHRUBS.

IF home owners knew how inexpensively their lawns might be improved there would be fewer bare, unsightly yards. With little trouble and the expenditure of only a few days' work in each year the boys and girls can adorn the home with clambering vines and beautiful trees and shrubs. Many kinds of desirable trees and shrubs can readily be propagated by means of cuttings; and all kinds of vines can be increased in this manner or by the equally simple process of germinating seed.

An instance is known of an enterprising young home-improver who has grounds considerably more than an acre in extent, improved with a varied and extensive collection of shrubbery, nearly all of which is the product of a small number of stock plants procured at a cost of a few dollars. Planting material which would have cost a hundred times as much if purchased at a nursery has been produced at a surprisingly small outlay. Outside of the saving, there is a delight in growing one's own shrubbery, and, should it be desirable, the practice can be made to yield no small revenue, even in the most isolated rural community. By employing the simple expedient of propagating from hardwood cuttings, a single specimen of spirea Van Houttei, or golden elder, or panicled dogwood may yield in a single season from half a dozen to a score of thrifty, well-rooted little plants—sufficient for the formation of one or more pretentious clumps that will soon become the envy of the entire neighborhood.

The method is so simple as scarcely to merit description, yet perhaps a few words concerning it may not be amiss. In October wood of the current season's growth should be cut into sections eight or ten inches in length, neatly and securely tied in bundles of twenty-five to fifty and buried in a narrow trench in a well-drained corner of the garden plot. These bundles should be covered with earth to a depth of from three to six inches, and the warmth afforded by a mulching of straw or coarse manure will be beneficial. As early in the spring as the ground is at all fit to work, the cuttings should be removed from the trench and planted a few inches apart in rows eighteen to twenty inches distant from each other. Zealous attention to the details of weeding and hoeing should induce a vigorous growth and at the end of the first season the cultivator will be rewarded with thrifty, vigorous, well rooted stock.—Am. Journal of Agriculture.

PROPAGATING BEGONIAS.

Begonias and many other plants having thick fleshy leaves with large veins or nerves are frequently propagated by leaf cuttings. After cutting across the principal veins in several places, the whole leaf may be weighed or pegged down to the sand in the starting bed and new plants will spring from the wounded points. The leaf may be split along the mid-rib and the cut edges placed in the soil. The leaf may also be cut into triangular pieces with the point extending into the mid-rib and placed in the soil points downward.

WE UNDERSTAND

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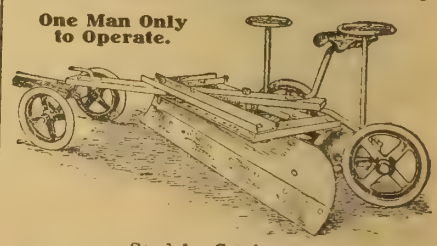

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Small Fruits and Vegetables

STARTING CELERY SEED.

CELERY is a crop that is to be transplanted. The plants must be started in a seed-bed and there cared for until they are large enough to be transplanted either into a temporary bed or to the field. Celery seed is very small, light, and slow to germinate, taking about two or three weeks to come up, and for these reasons great precautions are necessary in starting the plants. Methods employed for starting cabbage, onion, or tomato seed would, in many cases, prove failures with celery. Very few other vegetables require such careful and constant attention to the seed-bed, and, this is particularly true in this climate.

The seedlings, as they germinate, are delicate and it takes a few days before they are strong enough to withstand any neglect of the seed-bed. During this time one must not forget to water the little plants regularly or else our hot sun and drying winds will cause many of the delicate seedlings to die.

The seed-bed should be well prepared. The soil for the seed-bed should be about three-quarters of good rich loam and one-quarter well rotted and sifted manure. Do not use manure that is liable to heat. Mix the soil and manure thoroughly, rake it to a clean even surface, wet it, and then roll or pack it down. As soon as it is dry enough drill the seed in as shallow as possible. Sometimes the seed is sown broad-cast and thinly covered. While this way may give a good germination, if the seed-bed is properly taken care of, the drill method is preferable.

Mark off the rows ¼ and ½ inches deep every three inches and plant the seed fairly thick. One ounce of seed should be enough for a frame or seed-bed 6x8 feet. Cover the seed from ¼ to ½ inches deep with the finest soil possible. Immediately after the seed is planted the bed is watered, care being taken not to wash the seed out. From this time on a careful management of the seed-bed is necessary, remembering that the surface soil must not be allowed to become too dry and hard. To keep the soil from baking, it should be watered at regular intervals. The frequency of the watering of the seed-bed will depend largely on whether it is exposed to our hot suns and drying spring winds.

If the seed-bed is open, it is advisable to have it in a place where it can be sprinkled every evening if necessary. While the ideal seed-bed is one that is open or unprotected, better results in germination, and with less care, can be had here when some kind of a covering is used. Boards, straw mats, cloth, gunny sacks, and glass can be used to prevent evaporation, and to keep the soil from baking. All of these materials have been used at the Station on the seed-bed. In each case the results in germination have been quite satisfactory, but the stand has been more uniform from the beds covered with white cotton cloth. The beds covered with glazed sash may have to be watered every two days, and when the days are very hot and windy, every day. Beds covered with cloth may be watered every three or four days.

In covering the beds with white cotton cloth it is generally better to have the seed-bed made in such a way that there will be a 3 to 6 inches space between the covering and the soil. Beds made in the form of a cold frame are very satisfactory. If lumber cannot be had, the border on the side can be raised to the necessary height. It is advisable in using the cloth cover to stretch the cloth over a light frame made from inch lumber. The frames can be made 3x6 feet or larger. Such cloth covered frames are easily handled and when placed over the seed-bed the wind does not move them around. As soon as the seedlings are well started the covering can be removed. If left too long, the plants tend to grow too tall and spindling.

After the plants are well up the seed-bed can be irrigated if so desired. It is very important to have the celery plants as stocky as possible for transplanting. Stocky plants may be secured in two ways. They may be transplanted from the seed-bed to a temporary bed and from there to the field, or they may be thinned in the seed-bed and sheared off when they become too tall. The plants may be cut back a third or a half of their growth.

An ounce of seed should give from 5000 to 6000 good plants after allowing for a very large loss. Five to eight ounces of seed should produce enough good plants for an acre.—Fabian Garcia., New Mexico Agricultural Ex. Sta.

USE OF HOE AND RAKE.

Many vegetable gardens and nearly all flower gardens are too small, or improperly arranged for the use of horse tools, says a writer in The Journal of Agriculture. In such cases the hoe and rake are the proper tools for cultivation. The vegetable bed or flower bed or border that is to receive after treatment with hand tools, must be spaded and otherwise stirred and mixed to a very fine condition at the initial preparation. Most of the cultivation must be done before planting.

In the cultivation of flowers or vegetables in beds or borders, use the hoe to cut out weeds and stir the soil. Large weeds would be better pulled out than cut out, since when cut off at or very near the surface they often quickly sprout up and give more trouble. I find it better to use the point of the hoe rather than the straight blade in most cases for this kind of work. The sharp point of the hoe will stir the soil with less muscular exertion than when the full blade is used. A narrow hoe, for the same reasons, is better than a wide one.

The steel-toothed hand rake is an excellent tool for garden cultivation. Its use should follow that of the hoe. The soil can be stirred with the hoe, but it can be made fine and smooth with the rake. When a flower bed has been worked properly with a fine-toothed rake it looks neat and inviting. If taken in time, with not too much rain for packing the soil and the encouragement of weed growth, the entire summer cultivation can be done with the rake.

Cultivation with the rake can be done with more ease and rapidity than with the hoe. Quite a large garden can be made smooth and fine with it in an hour's time. The rake is the best of all tools for making a surface dust mulch in dry weather. Keep up its use in time of drought—and water the garden with the rake.

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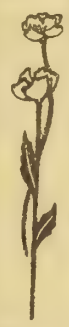

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California Cultivator

ESTABLISHED 1889

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Contents

HARVESTING GRAIN AT SANGER, Cover.
FORESTRY IN OTHER COUNTRIES, 683.
CITRUS.—Florida Fruit Exchange Assured; Regarding Citrus Tarnff; Gophers; Cost of Oranges, 684, 685.
DECIDUOUS.—A Good Farmers' Club; Colorado Fruit Prospect; Great Interest in Nut Culture, 686, 687.
LIVE STOCK AND DAIRY.—One Cow; Fly Repellant; Milking Machine, 688, 689.
ORNAMENTAL GARDEN.—Points on Beautifying Home Gardens; Propagation of Shrubs; Propagating Begonias, 690.
VEGETABLE GARDEN.—Starting Celery Seed; Use of Hoe and Rake, 691.
EDITORIAL.—Forest Fires; Report On Serum; Good Roads Project; Politics for Farmers; A Garden Spot; We should Be Wiser; Store The Flood, 692.
AGRICULTURAL NOTES OF THE PACIFIC COAST.—Northern, Central, Southern, the Coast, 693.
POULTRY.—Some Mistakes in Feeding Young Chicks; Fighting Red Mites; Preserving Eggs; Feed Values; Canary Birds, 694, 695.
GENERAL AGRICULTURE—The Rat Problem; Love of The Country, 696.
IRRIGATION AND FORESTRY.—Early Development of Sacramento Valley, 697.
QUERIES AND REPLIES.—Oiling Reservoir; Cherry Plums; Cow Pox; Book on Ensilage; Milking; Curl Leaf; Killing Out Blackberries; Cover Crop; Dairy Questions; "Black Bugs"; Summer Pruning of Apricots; More Bugs; Foul Brood; Planting Loquats; Castor Oil For Dogs, 698, 699.
HOUSEHOLD.—Each In His Own Tongue; Her First Beau; About The House; Home Made Cheese, 700, 701.
PRODUCE MARKET.—Los Angeles Markets; San Francisco Markets; Citrus Markets, 702, 703.

FOREST FIRES.

The State Forester has issued a circular giving a list of the fire wardens in each county of the state. A part of the circular contains warnings in regard to carelessness in the handling of fire. Probably very few people in California understand that it is a misdemeanor punishable by a fine of not less than $25 nor more than $500 and by imprisonment, to commit any of the following acts:

1. To build a fire even on your own land without first securing a written permit from a duly appointed firewarden, except camp fires, which may be built on unenclosed lands if the owner has not forbidden their building in any way, and provided the builder of a camp fire totally extinguishes it before leaving.

2. To set fire on the lands of another excepting camp fires built under the conditions outlined above.

3. To allow a fire, unlawfully set, to escape from the control of the person having charge thereof, or to spread to the lands of another.

4. It is unlawful to use any engine or boiler, burning fuel other than oil, unless the engine or boiler is equipped with adequate devices to prevent the escape of fire from any part.

5. Also to refuse to obey the summons of any State Firewarden to fight fire.

The heavy rains of the last year have caused such a mass of inflammable growth on the hills that greater care than usual must be exercised or this season will be marked by disasters even greater than last year.

By the way, our readers may not be aware of the vast losses of last year. In this state they were great. But look at those in other sections of this country in 1908: July 12 to August 2.—Crow's Nest District in British Columbia. Loss, $20,000,000. Dead, 70. Homeless, 10,000. August 16 to September 6—Northeastern Minnesota and Northern Wisconsin. Loss, $6,000,000. Dead 12. Homeless, 12,000. August 16 to September 8—Minnesota Copper Country. Loss, $5,000,000. Dead, 30. Homeless, 5000. September 1 to September 7—Black Hills, South Dakota. Loss, $2,000,000. September 1 to September 8—Michigan Peninsula. Loss, $3,000,000. September 12 to September 19—Greenville District, Pennsylvania. Loss, $1,000,000. September 1 to September 19—Adirondacks, Essex, Warren and Saratoga counties, New York. Loss, $2,000,000. Dead, 8. September 2 to September 20—Southeastern Ohio and West Virginia. Loss, $2,000,000.

REPORT ON SERUM.

As the Cultivator has often given articles in its columns from Dr. David Roberts, formerly Wisconsin State Veterinarian, we deem it but just to our readers to give the following from Circular No. 29 of the U. S. Department of Agriculture:

"For some time past there have appeared in certain agricultural and live-stock journals advertisements of 'the Roberts serum treatment' for abortion in cows by the Dr. David Roberts Veterinary Company, Waukesha, Wis. In the advertising matter sent out by that company there is an order sheet giving a list of 'remedies,' one of which is 'Anti-Abortion Serum, for preventing and curing abortion in cows.'

"In accordance with the provision of law, the Department recently examined a sample of the preparation referred to. Analysis by the Bureau of Animal Industry shows that the preparation is not a serum and contains no serum. The sample contained approximately 98 per cent of water, the remainder consisting of phenols (carbolic acid), oil of cloves, and a very small proportion of what appeared to be some form of vegetable matter."

GOOD ROADS PROJECT.

The act of the recent legislature in passing a bill providing for a state bond issue of $18,000,000 for a system of state highways, seems to have caused diverse comments from the press of the state. Papers in the counties which have already bonded themselves heavily for road improvements, oppose the move on the ground that each county should carry the burden of its own bonds. As a whole, however, the prevailing sentiment is that the state must have better roads than it has, and it is presumed that private interests will be largely set aside and bonds carried either by the state or various counties.

The movement for better roads is unanimously favored. The only diversity of opinion is as to the manner of securing the results.

POLITICS FOR FARMERS.

As a rule the farmer is a bad politician, or rather not a successful politician. Also, as a rule, the last thing he wants to be is a politician, but there are times when it is necessary for him to take a hand, and when he does, it is usually with considerable vigor.

Recently some of the best fruit growers in the state demanded a change in the horticultural laws, amongst other features, that the number of commissioners should be reduced from three, as it has been in the past, to one, and that the one should receive a larger salary, and that no one should be appointed to the position unless he first passed a satisfactory examination before an examining board to consist of three members, one to be the state horticultural commissioner or appointed by him, one from the state university or by appointment of the state university, and one to be appointed by the governor. Contrary to the expectations of the original framers of the bill, it was not permitted to pass the state legislature until it had been amended so as to make the appointment of the examining board come entirely into the hands of the governor. When this amendment was carried through over the protests of the originators of the bill, they set wheels in motion in order to secure the appointment of a board that would represent the horticultural interests of the state. At the meeting of the fruit growers of the Claremont Horticultural Club at Ganesha Park, Pomona, recently, the opinion was freely expressed that the board as appointed did not in any way represent the wishes of the fruit growers there assembled. It was also stated that the wishes of politicians were much more considered than those of the fruit growers.

If this be true, then it is time for an awakening on the part of the fruit growers when they shall demand that the interests of the fruit growers shall be considered more than those of politicians.

A GARDEN SPOT.

"The National reclamation act was passed in 1902. At that time there were in the government's name, in the 16 states affected, 600,000,000 acres of arid land, of which it was estimated possible to reclaim sufficient to support 50,000,000 people. By 1911 the Reclamation Service will have reclaimed nearly 2,000,000 acres, at an estimated cost of $70,000,000. There are 40,000,000 acres of arid lands susceptible to reclamation by irrigation. The construction cost of the reclamation works is returned to the government from the sale of lands, the proceeds to be again used in furthering irrigation development. Irrigation is making a garden spot and an empire of the 'Great American Desert' and the work of the irrigation congress is yet in its infancy."—R. Insinger, Chairman Board of Control, Nat'l Irrigation Congress.

WE SHOULD BE WISER.

Figures have been assembled to prove that owing to the frightful condition of almost all American roads, it costs 25 cents a ton a mile to haul. The superb roads of the old countries of Europe make possible the hauling of farm products at 12 cents a ton a mile. Therefore, every ton hauled costs the American farmer 13 cents more per mile than the farmers of the old country are forced to pay. The average length of haul of farm products in the United States is 9.4 miles; therefore, were our roads as good as those of France, the farmers gain would be 9.4 times 13 cents, or approximately $1.23.

STORE THE FLOOD.

Less than one-fifth, and, in many cases probably not one-tenth, of the waters of our streams is available for irrigation. It runs away to the ocean in the season when it is of no value for irrigation purposes. Many streams are so situated that this will always be; others are so located that a large part of the water may be saved for the dry season. This is a good time of the year to consider this waste which the state is suffering each year, and look ahead to the time when it may be prevented, and encourage all endeavors looking toward that end.

FORESTRY ABROAD.

(Continued from Page 683.)

once upon the idea of preserving them by making them pay. At first the output of teak had to be somewhat restricted, much against the will of the timber merchants of Rangoon, who protested that the business of their city would be ruined. But after this momentary check the teak trade of Rangoon grew until it was far greater than ever before, and it is now a chief and increasing source of the prosperity of that city.

The appointment of Doctor Brandis was the beginning of the Indian forest service. In 1866 he was made inspector-general of forests, and from that time progress was rapid. The Indian forest service now has nearly 300 superior officers and over 10,000 rangers and forest guards. It has charge of about 200,000 square miles of forest, and produces a net revenue, after all expenses have been paid, of about $3,000,000 a year. In addition, the forests furnish to peasant holders of forest rights products whose value is estimated to be considerably greater than the whole cost of the forest service. About 30,000 square miles are effectively protected against fire, at an average yearly cost of less than half a cent per acre. These admirable results are especially interesting because India is like the United States in the great extent and variety of her forests and in the number and fierceness of forest fires.

Agricultural Notes of the Pacific Coast

Northern California

Winters farmers are to be given a new rural route delivery.

Hay prices are proving exceptionally satisfactory to the farmer.

Peach growers at Oakdale are thinning out their tremendous crop.

Mixed cars of fruit are now going forward from the Sacramento Valley.

Peach growers near Gridley are thinning their peaches for the second time.

The third State University butter contest was held at the Davis farm last week.

A creamery plant at Willows, Glenn county, is in trouble over legal complications.

Winters, Yolo county shipped its first tomatoes and corn on the last day of May.

Winters, Yolo county, shipped the first green corn out of the Sacramento Valley.

The grape crop at Woodland, Yolo county, is reported to be in exceptionally fine condition.

Auburn, Placer county, fruit growers have organized a co-operative fruit marketing company.

Land in Glenn county formerly given to beet culture raised immense crops of grain this year.

Ukiah, Mendocino county, was visited by a late frost which did much damage to young vineyards.

The beet fields at Princeton, Colusa county, are reported to average not far from fifteen to twenty tons per acre.

As a rule hay producers are holding their hay expecting a higher price than buyers seem inclined to offer at this time.

The barley crop of one Willows, Glenn county, ranch will produce thirty sacks to the acre and that from a volunteer crop.

A large eastern syndicate is purchasing quantities of land at Willows, Glenn county, which will be sub-divided and sold in small holdings.

The demonstration train has been returned to Davis and Sacramento and dismantled. The train covered about 3500 miles in its various trips.

Work has been commenced on the construction of ditches for the Feather River Canal Co., in Butte county. These ditches will cover land in the vicinity of Biggs and Nelson.

The experiment farm maintained by the United States reclamation service in connection with the reclaimed oil land project at Orland is showing remarkable results with the irrigated garden truck planted this season.

The Farmers' Protective Association at Healsburg recently held its annual meeting and re-elected its former officers. The association has forwarded $700 to the state grower's association to assist in protecting the wine industry of the state.

A company which is reclaiming a large body of land near Sacramento offers to sell reclaimed land and guarantees to each purchaser absolute protection from floods. In case the high levees, which are being constructed to insure keeping out the floods, should break, a fund is to be provided to cover any damage that may come.

Central California

A large winery was recently destroyed at Tulare by fire.

A new cannery is to make its initial run this year at Bakersfield.

Large plantings of eucalyptus have been made this spring near Pixley.

Irrigation water is more abundant in most parts of the San Joaquin Valley than usual.

The latest addition to the farmers union movement is that of the wine, honey and melon men.

Lindsay has proven to be an unusually profitable berry growing section during the past season.

One Hanford sheep grower shipped a train load of 31 cars of fat sheep to Kansas City last week.

One farmer near Hanford reports a yield of nearly 34 tons of grain and alfalfa hay from nine acres.

A legal contest is on between the "riparians" and "appropriators" in the Kings county Superior Court.

With old crop raisins going at 2¼ cents, raisin producers are feeling somewhat better than for some time.

The horticultural commission of Kings country reports 100,000 eucalyptus trees planted during the past season.

Leaders of the farmers' union movement report many fruit growers signing contracts for the coming season's output.

Supervisors of Kings county have been petitioned to take preliminary steps looking toward improvements in the Tule river country.

Some ranches in Tulare county are being fitted with the pipe system of irrigation which will handle the water much more economically.

Bee men of Fresno county are concerned over the prevalence of black brood. The county bee inspector reported 218 colonies infested out of 1338 inspected.

The new pumps at the Copo de Oro water plant near Bakersfield are delivering 90 inches of water very successfully. The plant cost about ten thousand dollars to install.

The live stock inspector of Kings county reports inspection of many dairies during the last month, and as a rule the animals are healthy and the dairies kept in excellent condition.

Colonel Hersey of San Jose predicts that prunes will vary in value from $15 to $30 per green ton, size and perfection being the basis of value. He also predicts that dried prunes will bring at least 3 cents.

Owing to the reclamation of lands belonging to Miller and Lux, much land belonging to individual farmers was flooded last month near Bakersfield. The farmers cut the Miller and Lux levees in order to release the pressure on their own levees, and it is rumored a law suit will result.

Delegates from the various local district organizations met recently in San Jose and organized a county body which will be known as the Santa Clara Valley Fruit Organization. The temporary directors elected are: H. A. DeLacy of Coyote, R. P. Van Orden of Mountain View, J. T. Dunn of Palo Alto, A. M. Kelley of Morgan Hill and William T. Topham of Berryessa.

Southern California

Banning has a new ice plant.

Date trees near Coachella are setting full of fruit.

A produce exchange is being organized by the producers of Imperial Valley.

Daily refrigerator car service is operated between Imperial and Los Angeles.

Santa Ana orange growers have formed a new orange shipping association.

Beaumont apricot crop will be lighter than it was estimated earlier in the season.

Work is progressing rapidly on the $3,500,000 good roads system of Los Angeles county.

The Gregory Canning Co. at Colton has been overhauled and enlarged for the season's run.

Escondido is waking up and subdividing small tracts of land into smaller holdings.

Oranges around Casa Blanca are all shipped and the packing houses are all closed for the season.

Present indications are that the cantaloupe industry of Imperial Valley will be a money maker this year.

The few hot days at the first of the month have caused great damage to the orange and some other fruit industries.

An Imperial Valley rancher has been convicted of taking water from ditches at a time when he was not entitled to it.

Imperial Valley creameries are putting out a higher grade of butter than they have been able to in the past warm seasons.

The Ventura County Lima Bean Growers' Association is appealing to all bean growers in California to join the new association.

It is evident that this season's output of citrus fruits will be the greatest ever, some estimates placing it as high as 35,000 carloads.

A brush fire covering a square mile of land and damaging many ranches, partly destroyed an apiary at Brookside near Redlands last week.

Notwithstanding the Colorado river is approaching its highest point, the flood is not within eight feet of the top of the levees thrown up to protect the Imperial Valley.

The interests of the Bear Valley Water Company in the lands about San Jacinto and Hemet have been disposed of to the Los Angeles Reservoir and Pumping Company.

The restoration of entry on lands of Imperial Valley has created a great rush of business for the land office. The month of May was the greatest in the history of the Southern California office.

The California Fruit Canners Association at Los Angeles has put up great quantities of berries this season. It is reported that this concern has contracted for over a thousand tons of small fruit.

Highlands, Redlands, and many other sections reported that more than half of next year's output of oranges has gone to the ground because of the extreme heat of the last few days of May and the first of June.

The Coast

Texas claims to have been the first state to harvest wheat this year.

Garfield, Wash., reports the largest output of grain ever in its history.

1909 hops are readily being contracted for at Portland for twelve cents.

Arizona cattlemen are receiving from $18 to $21 a head for cattle sold this year.

Yuma is to have an ostrich farm using forty large birds for a foundation stock.

Orchard land in Colorado with bearing trees is selling for $1000 to $4000 per acre.

The Willamette Valley prune orchards are heavily loaded and an immense crop is promised.

The Colorado Agricultural College estimates the cost of growing an acre of cabbage to be $21.80.

Ritzville, Washington, is to have a grain elevator constructed with a capacity of 60,000 bushels.

"Ideal growing weather" is the verdict of wheat growers in the great wheat belts of Washington.

Three hundred dollars in cash is to be offered for the best display of apples at the A-Y-P Exposition.

The acreage of wheat of Union county, Ore., was thirty per cent greater than that of last year.

The Washington State Grange Patrons of Husbandry held its annual meeting at Ellensburg June 1st.

The management of the creamery at Yuma has recently been changed and increase of capacity is promised.

Yuma county, Arizona, has a good roads association which is moving toward having better roads for that county.

Whitman county, Wash., estimates a harvest of 13,000,000 bushels of wheat. The 1907 crop was 10,000,000 bushels.

The farmers near Clagstone, Idaho, are making a concerted attack on the ground squirrel pest, using poisoned field peas.

It is estimated that over 100,000 people from the United States will settle in British Columbia during the coming summer.

Heavy rains which visited the State of Washington about the first of the month were of great advantage to the grain farmers.

A Salem, Oregon, manufacturer has invented a threshing machine which is said to be the finest flax machine ever used in that industry.

The Colorado river is now at the 26 ft. stage, and it is expected that it will go close to the 30 ft. level before it reaches its highest point.

Late spring causes heavy loss to the fruit growers of British Columbia. The dominion fruit inspector reports less than half the usual output.

Shipments of cattle from the ranges in Cochise, Pima and Pinal counties, Arizona, will bring the owners at least $150,000 during the month of June.

Yuma papers deny that any bamboo has been shipped to that section for planting, as rumored, but state that another year will see much planted at the experiment farm at the Indian reservation.

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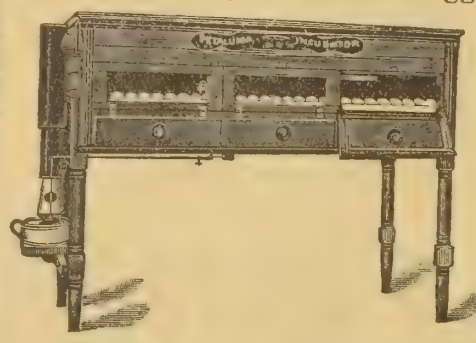

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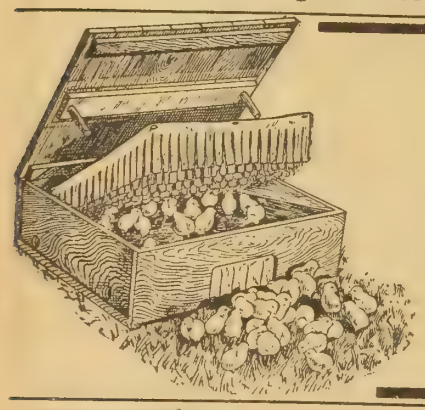

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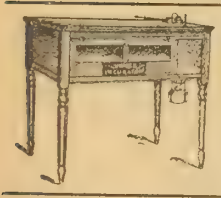

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Profit in the Poultry Yard

By Mrs. Frank Metcalf

We solicit short articles of a practical nature from the fancier and utility breeder, giving their experience with poultry. All inquiries pertaining to feed, management, disease and its prevention will be answered through these columns.

SOME MISTAKES IN FEEDING YOUNG CHICKS.

I HAVE raised poultry for many years and it has taken a good deal of experience to get me to the point where I can raise the young chicks without losing a large number each year, writes W. M. Underwood in Poultry. There are some mistakes that practically all beginners make.

The digestive organs of the chick are very tender and it is not a difficult matter to feed foods that will greatly injure the tender mucous lining. I remember one year that I gave the chicks a lot of wet bran. They filled up and some packed their crops full. The slow movement of the bran into the gizzard allowed the wet bran to ferment in the crops of the chicks. I was unable to save some of the chicks that went down under that kind of feed. Bran is a good thing for a part of the ration, but my own experience has taught me that it is not best to feed it as the only food.

One mistake in feeding that I have observed among some poultrymen is the giving of too much wet meal at a time and leaving the spoiled stuff where the chicks can get at it. A chick has no more sense than a hen and will peck at this kind of remains till the crop is full of a fermenting mass. For some reason I do not understand, the crop of the chick is unable to push much of that kind of food into the gizzard. When it gets into the gizzard it causes bowel complaint, for the digestive processes are not able to handle it to advantage.

For the first feeding of young chicks I find hard boiled eggs very good. The egg is of the same nature as the food in the digestive tracts of the chicks when they are hatched. It is, therefore, easily digested and gives the chicks a good start. Frequently eggs can be used that are unmarketable, being a little too old to be strictly fresh. This is a better use to make of them than to sell them to people who think they are getting strictly fresh eggs.

It is a mistake to feed a chick too young. I always let my chicks go without food for a day or more after they are out of the shell. In the meantime they are digesting and assimilating food that nature had placed in them before birth.

Corn meal, especially coarse corn meal, is good to feed to the chicks when they are but a few days old. It should be fed dry. It is easily digested and can be fed for a long time after the chicks have gone out from the maternal roof.

Bread crumbs also make an excellent food. The fact that they are hard and dry improves them from the standpoint of the chick. I think myself that they are more wholesome than fresh bread. Why not? We say that stale bread is more healthful for people than new bread and the digestive system of the chick is very delicate.

Oatmeal, especially the steel cut oatmeal, is particularly good. Oats contain just the elements that are needed by the growing chicks. The amount of protein in oatmeal is very large. There is also an element called avoine which has a stimulating effect on the eaters.

Meat meal is to be recommended highly. I have tried it and found it to give most excellent results. Any kind of meat is good, but the meat meal consists mostly of the lean meat and bone ground up and I think it is better than the fresh meat. However, the latter is good, and where a bone cutter is at hand fresh cut bone with the meat on it makes a good feed.

Young chicks especially like kaffir corn and it is worth about the same as corn for feeding.

Needless to say, the chicks should be provided with fresh, clean water.

FIGHTING RED MITES.

WE clip the following from an Australian poultry paper which shows that mites in the antipodes are pretty nearly as hard to combat as those of this country. They were sure tough ones.

In former years early in the season, I have soaked the roosts of my hen house with crude oil, and have had but little trouble with lice or mites. This year, however, has been an exception. Through carelessness, or laziness, before I was aware of it, my houses were literally alive with the little red pests.

First I tried my old remedy, kerosene, crude oil and crude carbolic acid. It did not seem to be of any benefit. I inquired of my poultry friends and found they were all in the same boat. I was advised to smoke the houses with sulphur. I did that, and the lice only seemed to grow fat on that treatment. The next advice was to whitewash. I mixed a barrel of whitewash and, with my spray pump, I literally soaked all parts of the houses, removing roosts, drop boards, and all movable things. The next morning the lice seemed to be just as thick on the roost as ever.

I then tried smoking again with sulphur with the addition of tobacco dust. The lice seemed to increase on the roosts. Next, with a torch, I burned the roosts every morning, until the wood seemed to be all charred, and again they were just as thick as ever. I was advised to try boiling water, which I did a few mornings with the same results.

I began to get discouraged, and bought some of the advertised lice killers. The directions reminded me of a bedbug killer I read about when a boy, viz: A party not having got good results with the preparation, complained to the agent. The agent said the way to use it was first to catch the bug and squeeze him until he opened his mouth, then drop some of the liquid into it and he would strangle.

The lice killers were about the same; catch the hen by the legs and thoroughly dust all parts of the hen with the powder.

Now, for a person with a few hens that may be all right, but to catch and dust a hundred hens, two or three times a week, to say the least, is rather trying to one's nerves and patience. Besides, I fail to see how that would affect the mites on the

perches. I tried only a few, as it was too much like useless labor.

I looked in my poultry books, and they said to keep up a constant warfare, or something to that effect, but they didn't say what to fight with—shot gun or arbitration. I concluded the authors didn't know. Then as an experiment I dusted a bunch of lice with a little tobacco dust, and was surprised to see them all die immediately. I tried the spray pump and whitewash again, and while the perches were still wet I sprinkled them liberally with tobacco dust, and the next morning the perches were all covered with lice—all dead. So I think I have solved the problem of red lice, as I haven't seen one since.

POULTRY QUERIES.

Preserving Eggs.

Will Mrs. Metcalf kindly tell me how to use water glass for preserving eggs.—A. L. C.

Boil and cool pure water. Use 9 parts water to one of water glass. Put the solution in a jar and set in a cool place, and add fresh eggs until jar is filled to within two inches of the top, always being careful to keep eggs two inches below top of solution. For packing use only perfectly fresh clean eggs, and do not use those that need washing, as that removes some of the mucilaginous coating which helps preserve the eggs.

The cost is less than two cents per dozen, and they will keep perfectly and be excellent for all purposes save boiling, when they are liable to burst open. It is best to buy the "dissolved glass," rather than to get the dry powder as that must be boiled for hours to dissolve, a tedious process.

Other names used, are silicate of soda, soluble glass, and water glass, but most druggists will understand the term, "dissolved glass," all right.

Value Of Feeds.

I should be pleased to learn through the columns of Cultivator, the different food values of yellow corn, millet, wheat and barley for chicks. I should also like to know what time chicks should be hatched to get best prices for broilers and roasters, and when to market same. Do you recommend feeding alfalfa green, or the dry, as a mash?—C. E. H.

By chicks, our correspondent means birds six weeks old and less, and no barley should be fed to these, then rolled barley may be added sparingly to their grain diet. Yellow corn has a nutritive ratio of 1 to 10; millet, 1 to 6 7-10; wheat, 1 to 6½,, and barley 1 to 7. Neither one of these grains nor all combined form a balanced ration, or perfect food, but must be combined with food containing more protein, say 10 to 15 pounds of protein to every 100 pounds of the above mixture. This is best obtained in pure beef scrap. A good grade of beef scrap contains about 65 per cent. of protein. For the first three weeks of a chick's life it should have little else but prepared chick food, and green alfalfa, which must be cut fresh daily. The best time to hatch chicks in this section for broilers is during the months of January and February, as the best prices are obtained during April and May. The holiday trade is best for roasters, which should be from four to six months old.

Alfalfa should be fed both dry and green. The meal cannot take the place of green food, but contains many elements of egg making, besides forming bulk. The green alfalfa is rich in mineral matter, much of which is lost by drying.—Mrs. Frank Metcalf.

RAISING CANARY BIRDS.

Raising canary birds is a pleasure to many people. I have been raising birds for seven years and have had considerable experience in that line. I have the St. Andreasburg Rollers and German crossed with the green and brown linnet. I have not had any trouble in raising them and have never had any disease among them. The singers are easily sold at $2.50 each and colored females at 75 cents each. You can easily get more for solid yellow ones as they are preferred by most people, although some claim the dark ones are even better singers than the yellow ones. They can be shipped safely any distance; shipping cages cost $1.25 per six.

I buy seeds separately and do my own mixing, also feed light bread, biscuit, corn bread, but never cake or anything else sweet. They relish light bread dipped in milk. I feed boiled or baked potatoes without salt. My birds lay from three to five eggs and rear from three to four broods in one season. In one nest of five I had three singers, in another nest of four I had three singers.—Poultry Tribune.

Coulson's POULTRY FOODS

Growing Chick ...Food...

Can be fed damp as a mash or dry in hoppers. Feed it to your chicks up to 3 months old. Gives rapid growth and health.

It will save your grain bill, and you cannot afford to be without it.

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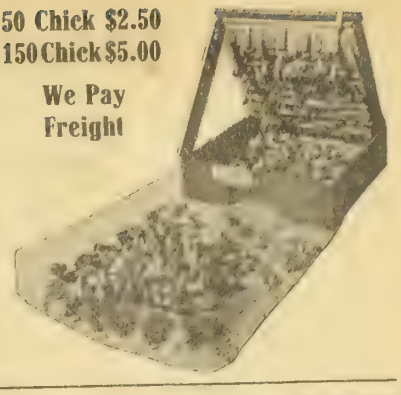

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E. E. McClanahan

112 E. 8th, Los Angeles

Coulson's POULTRY FOODS

EGG FOOD

At this time of year the hens are apt to begin falling off in their laying, and it is necessary for poultrymen to keep them up as long as possible. If they stop laying too early and start molting they are likely either to take a long time over the molt or if they molt quickly to have another molt in the late Fall.

A scientificially prepared Poultry Food like COULSON'S EGG FOOD, fed at this time will help greatly to keep the hens laying up to and well into their molting time, with consequent satisfactory profit to their owners.

Remember that all egg foods are by no means alike, and it is advisable for you to buy a brand that has stood the test of time.

COULSON'S EGG FOOD is therefore what you want to give you RESULTS and keep your flock in healthy condition for the molt.

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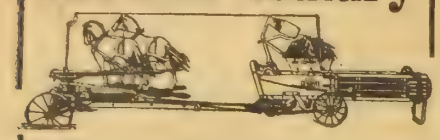

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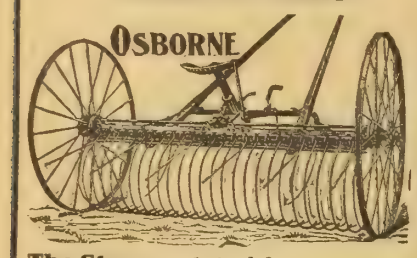

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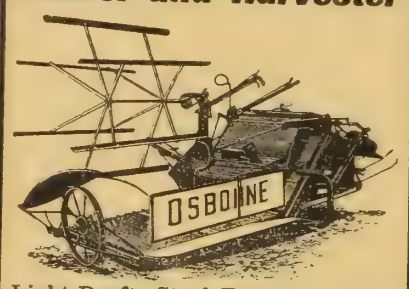

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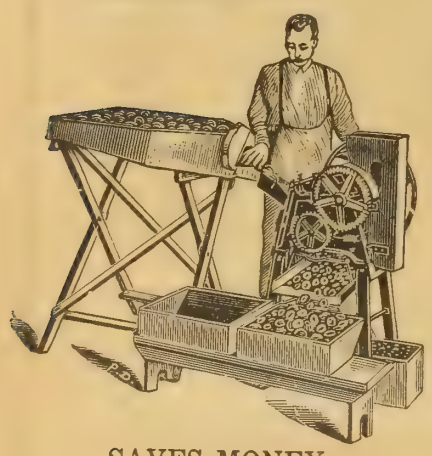

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Expert Live Stock AUCTIONEERS
Sales conducted in all parts of California and adjoining States. Write for dates and terms
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Large acreage of pine lands is being cleared at Deer Park, Washington, which will be given over to fruit trees.

General Agriculture

THE RAT PROBLEM.

THE rat is believed to be the worst mammalian pest known to man.

Not only does it destroy property worth millions of dollars every year, but it is now known to be the principal agent in disseminating bubonic plague. This is not a contagious disease in the ordinary sense. The infection is spread from rat to rat and from rat to man solely by means of the rat flea.

The United States Department of Agriculture, through its Biological Survey, has recently given the rat problem serious attention. The results of that work have appeared in a bulletin on The Brown Rat. There are several species of rats, but the common house or barn rat, the so-called "Norway rat," is the most widespread and by far the most destructive. By means of ships it has been carried to almost every part of the world, and wherever landed it has proceeded to make itself at home.

The species has wonderful adaptability to climatic and other conditions. In North America it is found from Panama to the Yukon Valley and to Greenland.

The rat's bill of fare includes almost everything eaten by man, and a considerable number of things not included in human dietaries, as, for instance, carrion, mice, kid gloves, ivory, and horses' hoofs.

Among the most common foods of rats are corn and other grain. If fed on grain alone, it is estimated that one rat will eat 60 cents worth in a year, while of oatmeal, it will consume $1.80 worth. If we suppose the number of rats in the United States to be equal to the number of horses, cattle, sheep, and hogs, it would cost more than $100,000,000 a year to board them on grain.

But the damage done by rats is not to be measured by what they eat. Through pollution of food products they do as much damage as by eating them. Besides they do great damage by digging under buildings and embankments, by gnawing woodwork, by cutting holes in sacks, and by cutting up goods and papers to make nests. They kill young poultry and squabs. They steal eggs. They frequently destroy the nests of wild birds. They have been known to gnaw holes in lead pipes, and they cause fires by gnawing the insulating covering from electric wires where they pass under the floors or inside partitions. They also cause fires by carrying and gnawing matches.

Though a serious pest on farms, rats commit their greatest depredations in cities. An attempt has been made to secure from the business men of Washington, D. C., estimates of the annual losses due to rats and mice. The data secured indicates losses exceeding $200,000.

The rapidity with which rats multiply is the main reason why man appears to make so little headway in their destruction. The females give birth to large litters of young, and the intervals between the litters are short. More than 20 young rats have been found in a single nest, and it is safe to estimate the average litter at more than 10. It has been calculated that a single pair of rats and their progeny breeding without interruption and suffering no losses would in three years increase to more than 20,000,000.

The author of this bulletin says hawks and owls, especially the latter, destroy great numbers of rats, a good work which man should encourage. Weasels, minks, and skunks are also rat destroyers. He recommends the persistent use of traps and poisons. But he thinks the most promising lines of effort lie in (1) rat-proof construction of buildings, especially the use of concrete in foundations; and (2) reducing the food supply of rats by the disposal of garbage, and the protection of food supplies.

Sheep Near Calexico.

LOVE OF THE COUNTRY.

The Spokesman Review of Spokane is asking representative people over the country for opinions as to effect of country life on its people. In her reply Mrs. M. E. Sherman of Fresno—"Our Mrs. Sherman"—says:

"Grown people that have carried the bloom of life fresh in their hearts love the country; they find joy at every turn, at every season of the year. In the vineyards and orchards poetry and philosophy find their fullest illustration. The eye thrills with the beauty around it and the artistic sense is fully satisfied. The pictures in the mind are those of the impressionist school—those of the emotions defining the landscape and reflecting the mind of the individual at every turn.

The love of the country, of the green fields, of the young animals is found in the heart of the natural child. Slum children, warped into a forced and matured worldiness present the weird combination of a child without love of nature. In the country little hands find useful things needing care at every turn, work and play combined—developing the mind, body and soul into perfect balance.

The following poem by Miss Krout is probably not as well known to people as it should be—considering its tuneful truth. Miss Krout gave us the pleasure of her company the other day for a brief while. She is now on her way to South America, having come from the South Sea islands. She is a woman whose work has gone into the daily papers and magazines rather than into poetry. Accomplished and interesting, she is full of love of the country."

The following lines are pronounced by John Boyle O'Reilly to be the finest verses he ever read. He republished them four times and declared he liked them better every time he read them:

Little Brown Hands.

They drive home the cows from the pasture
Up thro' the long, shady lane,
Where the quail whistles loud in the wheat field
That is yellow with ripening grain.

They find in the thick, waving grasses
Where the scarlet-lipped strawberry grows;
They gather the earliest snow-drops
And the first crimson bud of the rose.

They toss the hay in the meadow,
They gather the elder-bloom white;
They find where the dusky grapes purple
In the soft-tinted October light.

They know where the apples hang ripest
And are sweeter than Italy's wines;
They know where the fruit hangs thickest
On the long, thorny blackberry vines.

They gather the delicate sea-weeds,
They build tiny castles of sand;
They pick up the beautiful sea-shells,
Fairy barks, that have drifted to land.

They wave from the tall, rocking tree-tops,
Where the oiriole's hammock-nest swings;
And at night-time are folded in slumber,
By a song that a fond mother sings.

Those who toil bravely are strongest,
The humble and poor become great;
And from these brown-handed children
Shall grow mighty rulers of state.

The pen of the author and statesman,
The noble and wise of our land—
The sword and the chisel and palette,
Shall be held in the little brown hand.

—Miss M. H. Krout.

The garden is usually annually fertilized. Early and frequent cultivation mixes the fertilizers with the soil and makes of them a uniform mass of plant food. The more manure and other fertilizers are mixed with the soil the more good they will do. It is impossible to mix them too much. The trouble with most of us is that we do not mix them half enough. The good gardener and the good baker never fail to mix well their soil and dough. They can not hope for good results without it.

Irrigation and Forestry

EARLY DEVELOPMENT OF SACRAMENTO VALLEY.

FROM Bulletin 207 issued by the Department of Agriculture, which is devoted to Irrigation in the Sacramento Valley—written by Samuel Fortier we quote:

During the nearly eighty years of Spanish and Mexican rule in California the great central plain, with its 400 miles of arable lands stretching between the Coast and Sierra ranges, was the abode of Indians, wild animals, and an occasional white trapper. Its transformation into cultivated fields was the work of Anglo-Saxons. Were it not for the large tracts of land on the borders of the interior streams which were given away under both Spanish and Mexican rule, little would remain of the influence of that period. Neither the upper portion of this central plain, known later as the Sacramento Valley, nor the lower portion now designated the San Joaquin Valley, received much benefit agriculturally from that chain of missions which was established along the coast from San Diego on the south to San Francisco on the north.

The efforts of the Spanish missionaries were not directed to any great degree toward the improvement of agricultural practice. Their methods and those of their followers were of the crudest and far behind those of the Americans of that day on the Atlantic seaboard. As late as 1848 a forked limb of a tree, shod with a piece of iron and drawn by oxen hitched by the horns, served the purpose of a plow. The harrow was a bundle of brush, the reaper a sickle or a knife, and the thrashing machine the hoofs of young horses.

There was no commerce and the manufacturing was limited to the use of homemade looms and wine presses and crude attempts at tanning leather. Native horses were so cheap and numerous that they were frequently killed to save the grass for cattle, which were valued chiefly for their hides and tallow.

From an agricultural point of view, the first half of the nineteenth century in California is important chiefly as being the period of the Spanish and Mexican land grants. Before the termination of Spanish rule in 1822 about thirty ranches or farms had been granted. As a means of colonization under Mexican independence the number was greatly increased, and in 1846 no less than eight hundred large tracts containing some of the best land in the State had been given away. These land grants have from that day to the present exerted a powerful influence in shaping the destiny of this Commonwealth. At the cession of California to the United States in 1848 there were comparatively few Spaniards or Mexicans north of San Francisco, and the influence of these, outside of a few prominent individuals like General Vallejo and Senor Martinez, was not sufficient to make any lasting impressions. In no sense is this true of the land grants along the Sacramento River and its tributaries. These have so controlled the agricultural as well as the commercial and social development of that part of the State that it would not be possible to convey to minds unfamiliar with the situation a correct idea of the irrigation conditions and possibilities of this valley without some reference to the size and character of the landholdings.

The following summary shows that prior to 1848 grants aggregating 980,399 acres had been made to residents of the nine counties in the Sacramento Valley. The number given in the table is slightly in excess of the number of original grants for the reason that a few were subsequently divided by county lines. Thus, for example, the Capay grant to J. Soto, comprising 44,388 acres, was cut in two by the north boundary of Glenn county. This political division left 20,388 acres in Tehama county and the balance in Glenn county.

The Rancho del Arroyo Chico, situated in the heart of the valley and owned by the late John Bidwell, may be taken as a type of those that were successfully managed. This grant comprised 22,214 acres. As early as 1857, 225 acres were planted to wheat, 75 acres to barley and oats, and 8 acres to corn. There were on the ranch also at that time 1,200 bearing orchard trees, 15,000 vines, 600 cattle, and 500 horses. About 25 Indians were employed constantly, and not infrequently from 15 to 20 white men. The farm structures consisted of a large adobe dwelling and outbuildings, a wooden store and granary, blacksmith and wagon shops, barn, and flouring mill. Improvements made on this ranch more than kept pace with the general agriculture in the valley, and from this small beginning the cultivated area was increased in twenty-three years to 9,000 acres in wheat and barley, besides a corresponding increase in orchards and a doubling of the live stock.

During the past half century many of the old grants have been subdivided, but the numerous large estates which have been acquired since the United States gained possession have tended to make this part of the State one of large holdings. In 1892 the late W. H. Mills estimated that the holdings of 100 proprietors in the Sacramento Valley aggregated 1,600,000 acres, or an average of 16,000 acres to the landlord. The year previous, William Ham Hall, ex-State engineer, in a report on the central irrigation district, located in portions of Glenn and Colusa counties, stated that 40 owners held 89,000 acres of the total of 156,550 acres comprised in the district, yet this district when compared with the entire valley, if one excepts a few large ranches, is one of small rather than large holdings.

Stirring the soil to the depth of three, four or five inches covers up and kills weeds, opens up the soil for the admission of air to the roots of the plants, mixes the ingredients of the soil, and breaks the surface to prevent capillary water from escaping by evaporation. All these things are necessary for healthful and rapid plant growth.

The water at Roosevelt dam on June 1st stood at the 110-foot level.

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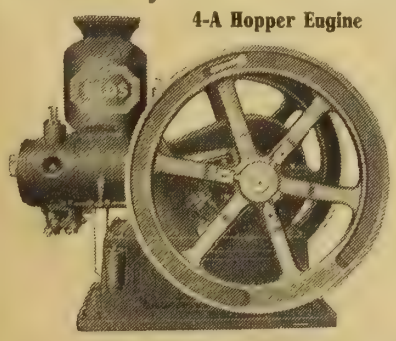

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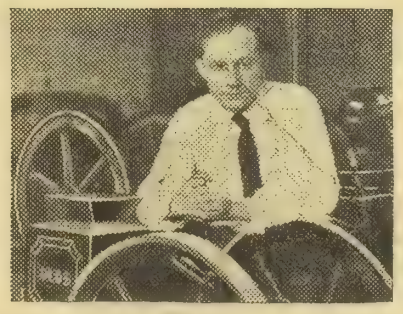

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Do it now before you forget it. A postal card will do, but better still write me a letter, telling me what you want the engine to do, and you will get a personal letter from me that will give you the facts you want.

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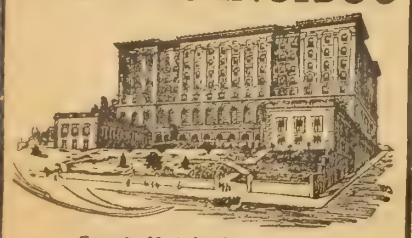

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Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Oiling Reservoir.

Is it practicable to build reservoir for water in sandy soil by coating with crude oil, mixing oil and sand by harrowing? How much oil is necessary per 100 square yards?—D. S. J., Redlands.

We have written to practical farmers asking this question, but as yet have been unable to secure definite replies. If any of our subscribers know of any experience along this line, we should appreciate communications from them on the subject. We know this, that some dirt reservoirs have been made which at first failed to hold water, but which were afterwards made fairly "water tight" by hauling in small amounts of adobe and penning sheep within the banks in order to tamp and pack down the adobe. Whether or not oil used in the same manner will accomplish the same result we do not know. We should appreciate any information as to this also.

Cherry Plums.

Is it advisable to plant cherry plums on Myrobalan roots? Is this a budded variety or grown from the pits? Does the fruit have a ready sale? What kind of soil is best adapted for it?—F. M. K., Escondido, California.

We cannot of course give advice as to the commercial possibilities of any fruit, because it is impossible to determine as to how many will be planted by other orchardists, and as to how extensive the market will be. Cherry plums are early and a very desirable little plum and in small quantities we imagine they will always demand a good sale. If a large production should be made it is barely possible the demand might be exceeded. As to whether they are grafted or budded on Myrobalan or peach root depends on the soil in which they are to grow. If the heavier damper soil, by all means use the Myrobalan. In lighter, warmer soil use the peach root. Of course the fruit may be grown from the pits if desired, but as is probable with all seedlings a mixed up and valueless lot of fruit will result.

Cow Pox.

Please tell us a remedy for what we suppose to be cow-pox. We have a cow in the herd that has large sore spots on her teats, from which yellow matter runs. Some of the sores have scabs on them.—Mrs. A. H. H., Santa Cruz.

Take the cow affected out of the milking string, as the trouble is contagious and will be carried from cow to cow by the milker's hands. When first taken give a good dose of epsom salts, a pound to a pound and a half according to the size of the cow. Give half an ounce of hyposulphite of soda night and morning in the drinking water. Sponge the udder off before milking with one ounce of hyposulphite of soda dissolved in a quart of warm water. Repeat this after milking. Then dust the sore with powdered charcoal or paint with glycerite of tannin. If the teats are greatly inflammed use the milking tube carefully sterilized to draw off the milk. The trouble will pass within a few days if it is promptly handled.—M. E. S.

Book on Ensilage.

Please tell me how I may obtain your book or pamphlet on Silos and Ensilage?—C. B. W., Escondido.

I have not written one. Send to the Department of Agriculture for the Government Bulletin covering the subject. My writtings on silos are in the back Cultivators. I think the matter of building is very fully gone into by the different companies that advertise silos for sale.

Milking.

Kindly tell me whether to milk a fresh cow dry if the calf does not use all the milk; also what to do with a swelled udder?—Mrs. D., Gardena.

A cow should be milked only enough to relieve distention for the first forty-eight hours if the calf is left with her; if the calf is removed milk her every five or six hours a little. After forty-eight hours the danger of colapse from milk fever is over and then she may be milked out clean. Bathe swelled udder in warm water or rub with hot lard.—M. E. S.

Breeding.

What do you consider necessary in order to breed a young cow in excellent health that passed examination by veterinary? She gave her previous calf two and a half years ago and is still giving from two and a half to three gallons of milk each day. Owing to conditions it was not possible to breed her till about six months ago, but though trying about five times she appears not to be in calf yet.—F. J. N., Delano.

Have some one that understands cows examine her to see that the mouth of the womb is not closed. Half an hour before breeding wash her out with a quart of warm water having a teaspoonful of baking soda dissolved in it. At one time we used to inject a pint of warm active yeast twenty-four hours before breeding. At present this treatment is discredited, yet in some cases it worked admirably without injury to the cow. If the soda water fails, then get breeding powder. If you could secure the privilege of turning this cow out with a herd that had a bull running with it, she would probably come out all right. Many cows must be bred at the beginning instead of waiting to the end of the period. Where the cow is taken from home, people wait until the last minute to be sure before making the trip.

Curl Leaf.

I enclose leaves of peach and grape fruit. Please inform me what is the trouble with them? They are from young trees set out last fall.—I. X. L., Inglewood.

The peach leaves are badly infested with peach leaf curl. Nothing can be done for it until next winter when spraying with Bordeaux will be beneficial to the trees during the succeeding summer. The grape fruit leaves have been forwarded to Prof. Smith who will answer later regarding them.

Killing Out Blackberries.

I have a large patch of dewberries and Lawton blackberries which I have been trying for several years to destroy with the hoe. Can you tell me how to make a tool to be used with team, to cut them off underground, or is there any such tool on the market for sale?—E. H., Occidental.

Have your blacksmith make a knife from a steel bar, about one-half inch thick and three inches broad, tapered at the front to a thin edge and filed sharp. Twenty or twenty-four inches is long enough, and this can be attached to any one-horse cultivator by a couple of strong iron feet or shanks that fit to the cultivator same as teeth. Set it so that it will cut two and a half or three inches underground. Persistent cutting for one season will destroy these vines, but the cutting must be persistent. I know of no tool for this work that is kept in stock.—Q. A. L.

Cover Crop.

Kindly tell what is best winter crop to secure humus in sandy loam in this section? Is vetch, Canadian field pea or cow pea better? Also what clover is best?—E. S., Turlock.

The vetch, or the Canadian field pea are good. Which is to be preferred causes a difference of opinion. As a rule we think the vetch is gaining in favor. In no case plant cow pea. That is more properly a bean and will not stand the cooler weather of the winter months. We do not believe that clover has been used in this state, as either of the above mentioned is much to be preferred.

Dairy Questions.

Where can I buy a Guernsey cow? Is the covered milk pail a success? In using it I find much more foamy milk than when milked into the open bucket. After standing twenty-four hours the cream seems to retain much of the air. Are the coolers considered a success? Does the long exposure to air more than offset the advantage of cooling?

Guernseys may be secured of the J. M. C. Marble Co., H. W. Hellman Bldg., Los Angeles. As to the other questions see Mrs. Sherman's article this week and last. From her standpoint it seems that the covered milk pail is a success if it is the right kind. As to the coolers the inquirer will note she does not consider it essential and possibly it is even detrimental. The quick cooling should be secured by other means.

"Black Bugs."

What is the remedy for black bugs on pumpkin vines? Every plant which has the bugs is wilting.—V., Kerman.

Having no further information as to the kind of bugs, it is very hard to prescribe. If it is the aphis or plant lice the application of kerosene emulsion or tobacco extract spray will be of benefit. But the bugs reproduce so rapidly that they will probably soon come back and the spraying be necessarily repeated. If the vines have been attacked so as to have lost their vitality, then for the sake of next year's crop it would be well to pile straw over them and burn and destroy the bugs or aphis so that they will not infest next year's crop. Too many farmers allow the dying vines to remain as a host plant for these pests on which to

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breed and propagate their species another year. As soon as this infestation appears it is wise to begin the burning and destroying.

Summer Pruning Of Apricots.

Will it hurt apricots if pruned three weeks after the fruit is picked? The orchard consists of good cultivated soil but is not irrigated. The trees are in full bearing.—Subscriber, Watsonville.

We think as a rule apricot growers give their trees a good thorough summer pruning soon after the crop is off. When possible this is followed by irrigating, but in any case we think there will be greater probability of full crop next year to prune as soon as the fruit is well off the trees.

More "Bugs."

Will you kindly print a remedy to destroy the bug which is stripping the leaves from our small fruit trees. We cannot find anything on the trees, but the ground is full of brown bugs.—F. D. A., Chino.

This is another case where it is impossible to prescribe without any more definite information. There are various kinds of bugs, a million or less, which injure fruit trees. We have never seen however a case where the leaves have been stripped from trees. But assuming this insect is a leaf eater, we can prescribe the application of an arsenate or Paris green spray. If the Paris green is used mix Paris green with water at the rate of a pound to two hundred gallons, or it may be applied dry, a pound mixed in several pounds of air slacked or hydrated lime.

Foul Brood.

How can I clean out foul brood and save my bees?—Subscriber, Leon.

This disease is too subtle and serious to be successfully eradicated by following any offhand advice that might be offered. The best thing to do is to apply to the bee inspector of your country, Mr. W. F. Rawson of Hemet. He will visit and assist you personally, and without charge for his services.—H. E. H.

Planting Loquats.

Can you give me some information as to how to start loquats from seed? —H. T. Y., Yuma Arizona.

As there exists a great difference in the vitality inherent in individual trees, one should select seeds from the strongest growers and thereby secure correspondingly vigorous stock. The seeds should be as fresh as possible. The germ of the loquat seed is pretty sure to die within a month or six weeks unless kept damp. Place the seeds in a small box, mix and cover with soil and keep moist, but not soggy. In about three weeks they will show signs of development and may be transferred to the seed bed. Any roots which appear may be broken off without harm to the seed. Plant from one to two inches apart, about an inch deep. The bed should be kept shaded and damp and treated much the same as an orange seed bed. In from four to six months transplant to pots or cans and after the young plants are well established, say in about four weeks, they can be transferred to the field nursery where they should remain for from nine months to a year before budding.—C. P. Taft, Orange.

Castor-Oil For Dogs.

A subscriber at Watsonville has written asking if castor-oil is good to give to dogs and suggesting that she has heard that it is not beneficial to horses and cows and thinks possibly it will injure the dog. Will say that the veternarian of the Cultivator recommends its use for dogs and so far as we have ever heard it is an excellent remedy.

A HOT SUMMER ON THE WAY.

As the balmy spring days swing by, one by one, and the coming of summer is heralded by an occasional hot day, it all serves as a reminder of the heat of previous summers and of the fact that no matter how hot the coming summer may be, there will be the usual work to do in the kitchen.

In homes where the work is done on a hot coal or wood stove, the situation is a particularly trying one—as it means added heat and discomfort—to say nothing of the trouble of carrying coal, wood and ashes; of having to wait for the fire to get started; and of having to keep it going when not actually needed.

But there is now a way by which all this unnecessary discomfort and trouble can be easily avoided—a way by which the cooking, baking, washing and ironing may be done without having an extra degree of heat in the kitchen. This happy result may be accomplished with the New Perfection Wick Blue Flame Oil Cook-Stove, a wonderful cook stove so constructed that all the heat is concentrated in the cooking, baking, in the heating of the irons and wash boiler, without being thrown off into the room to make an unbearably hot temperature.

Besides this great feature of comfort, the convenience must also be considered; and it is here, too, that the "New Perfection" excels the coal and wood stove. It is ready for business the moment the match is applied; it can be turned "low," "medium" or "high" at will; or, if required, three different sized flames can be had at the same time.

There is no stove work that the "New Perfection" will not do. From morning till night—from Monday to Sunday—from wash-day to baking day its usefulness is without end. And it does its work so quickly. No waiting for fire to get started—no late meals—no uncertain results.

The "New Perfection" burns ordinary kerosene and soon saves its own cost in fuel-economy. It is the only oil stove with a cabinet top—a feature which gives it the appearance of a modern steel range. Meals can be kept hot after they are removed from the blaze. It is also fitted with drop shelves that may be used for keeping hot the tea or coffee pot. Shelves can be folded back when not in use. Also has racks for holding towels.

Another home comfort is the Rayo Lamp, a lamp that produces a clear, steady light of unusual brilliancy, and yet so mellow as not to hurt the eyes. Made of brass, beautifully nickeled, and having a handsome shade, it is an ornament to any room, and can be used with equal satisfaction in the library, dining-room, living room, parlor or bedroom.

The New Perfection Wick Blue Flame Oil Cook-Stove and the Rayo Lamp are two articles of real home comfort, and are effecting a great saving of time, trouble and health in thousands of home everywhere.

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FOR SALE—SEVERAL CENTRIFUGAL pumps horizontal and vertical, in fine working order. Worth looking up. MACHINERY EXCHANGE, 117 Bruno St., Los Angeles, Cal.

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FOR SALE—12 AND 16 H.P. GASOline engines in fine working order; will sell at a snap. N.W. cor. Main & Bruno Sts., Los Angeles, Cal.

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A MAN IN HIS BEST YEARS WISHES to manage a farm. Thoroughly experienced in farming in this state; has been successful manager of farms from the ordinary size to a combined ranch of several thousand acres. Was born on a large farm. Well educated, he combines a life's experience in farming with the trained intelligence of the college-bred. A ranch in Southern California preferred. Write A. B. C., Cultivator Office, Los Angeles, Cal.

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FOR SALE—1500 EUREKA LEMONS, 1 and 2 years old; Blue gums, Sugar gums, and Red gums; street and ornamental trees, etc. GEO. B. WARNER, Santa Ana, Cal.

FOR SALE—EUCALYPTUS PLANTS, small orders or car lots, also take contracts growing any quantity. A. BLASINGAME, 15-23 Nineteenth St., Santa Monica, Cal.

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to fertilize for results in the coming crop.
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TWO NO. 1 REGISTERED JERSEY cows for sale. One (5 years old), churned 8 lbs. per week (by home method) on wild grass pasture, other her 16 month heifer by a Golden Fern bull. Breeding No. 1. Prices reasonable. TRIBBLE BROS., Elk Grove, Cal.

HELP WANTED.

WANTED—A MAN TO BUD DEciduous nursery stock. State experience. Good wages to first class workman. Address, FANCHER CREEK NURSERIES, Fresno, Cal.

SEED WANTED.

WANTED—MYROBOLAN OR CHERRY plum pits. In writing state number of trees you have and approximate quantity of seed which can be supplied. Address, GEO. C. ROEDING, Fresno, Cal.

HOGS.

REGISTERED BERKSHIRE AND POland China hogs, both sexes. C. A. STOWE, Stockton, Cal.

FARM LANDS FOR SALE.

FRESNO COUNTY ORANGE RANCH of 20 acres for sale.—13 acres of bearing trees, 7 acres of young Valencias. This is the only orange orchard in this district for sale that we know of. Write us for particulars. THE CITRUS LAND COMPANY, Sanger, Fresno Co., Cal.

FOR SALE—PALOMITAS VINEYARD 194 acres; 106 planted to choice Emperor, Malaga and Muscat vines, 3 to 5 years old. Part or all. Half cash, balance on easy terms. MRS. M. E. SHERMAN, Fresno, Cal.

FOR SALE OF EXCHANGE FOR LOS Angeles or Orange County walnut land, 140 acre mountain apple, berry, vegetable and chicken ranch, near Santa Cruz. WILLIAM RICHARD, owner, 438 River St., Santa Cruz, Cal.

BUY A LINDSAY ORANGE GROVE— 20 acres just coming into bearing; ¾ mile east of high school, ¾ mile from mountains; plenty water, piped; good land; good buildings; choice neighborhood. For sale by owner at bargain. Box 143, Lindsay, Cal.

GRAIN AND STOCK FARM, 316 acres 3 miles from Oakdale, fenced in 4 fields, hog-tight, with stock and implements; by owner. Price $10,000. Box 121, Oakdale, Stanislaus County, Cal.

I MAKE A SPECIALTY OF ORANGE and alfalfa ranches and exchanges. 826 Main St., Room 9, Riverside, Cal. N. R. BELL.

POULTRY.

BUFF PLYMOUTH ROCKS, BRED TO lay, win and pay. My birds have won more prizes than all competitors combined. Eggs and stock. Circular. DR. W. H. HOLMES, Slavin Block, Pasadena, Cal.

FOR SALE—INDIAN RUNNER DUCKS, first class stock, great layers. Write for prices. Eggs for hatching, $1.00 per dozen, $5.00 per hundred. GEO. BAUM, Mountain View, Cal.

BABY DUCKS—MAMMOTH WHITE Pekins and pure bred Indian Runner ducks, one week old. $15.00 per 100; $2.00 per doz. Eggs $4.00 per 100. J. W. LYON, Gardena, Cal.

YOUR CHANCE TO START RIGHT. A few Black Minorca trios, properly mated, at $5.00 and up. Eggs for sale. J. P. McDONOUGH, Geyserville, Cal.

O. L. CRANE, BREEDER OF PIT AND Cornish Indian Games. Rural No. 3, Santa Rosa, Cal.

EGGS FOR HATCHING.

WHITE COCHIN BANTAMS, THE fluffy little aristocrats of the barnyard. Eggs from first prize stock, Oakland and San Jose, 1908, for $1.50 per setting (15). C. H. G. RUNDE, 2105 Shattuck Avenue, Berkeley, Cal.

HORSES.

FOR SALE—A FEW HEAD OF UNbroken horses, three year old and past; ten two-year-old Poll Angus bulls; two Durham bulls; several yearling and two-year-old mules; three spring wagons. Address CHAS. W. HART, Farmersville, Cal.

FOR SALE OR TRADE—5 JENNETS, 2 good jacks, Missouri and Kentucky bred. Write OLIVER & ELTER, Dinuba, Cal.

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STRONG OUT DOOR GROWN ROOTED cuttings. All kinds of plants. Send for 1, 2, 3c list. GEM NURSERY, Los Gatos, Cal.

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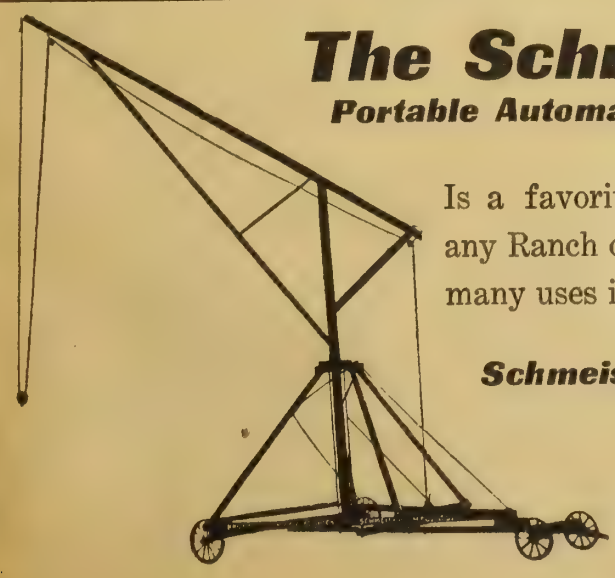
PURCHASE THROUGH US ANYTHING desired. Ask about our new system of teaching telegraphy by mail, full set instruments free. COLUMBIA COMMERCIAL COMPANY, 204 East 9th St., Los Angeles, Cal.



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with my Portable Billiard and Pool Tables. Send for Catalog and let me show you good, practical Tables at the price of toys. Used anywhere. No special room required. **C. RIDDERHOF**

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That is guaranteed to be absolutely hygienic?
That insures healthy, comfortable sleep?
That possesses all the good qualities of the finest hair mattress at about one-half the cost?
That is made in a factory where every precaution has been taken to insure the most perfect sanitary conditions?
That is made by skilled workmen in the most approved manner and the latest style?
That is guaranteed to give perfect satisfaction or your money promptly and cheerfully refunded?
That costs $15.00 for the full size, $12.50 for the ¾ size, $10.00 for the single size and is positively the best mattress made anywhere at these prices?

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John Breuner Co

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Will bring you a booklet describing their famous **"Kapokeen"** Mattress, which has all the good points mentioned and many more. Write today

Angle Lamp

The Light That Never Fails

Thousands in use all over the country. A good light is the greatest pleasure and the first necessity of every home.

The only lamp on the market that is sold under an absolute guarantee.

Remember, the light from Kerosene is the light science has agreed upon as being the purest and best, because it is soft and mellow and restful to the eyes. Here are a few of The Angle Lamp Merits:

NO UNDER SHADOW. NO SMOKE, NO ODOR, LITTLE HEAT.

GREAT ECONOMY—COST LESS TO BURN than an ordinary lamp. As easy to operate as gas or electricity, and better than either. **ABSOLUTELY SAFE** under all conditions. Lighted and extinguished like gas. Burned **HIGH** or **LOW** like **GAS** without a trace of odor. And a **BRILLIANT,** soft, steady, shadowless light—but this you will have to see to appreciate.

The lamp as shown in cut burns 22 hours on 3 quarts of oil.

Send for Illustrated Catalogue with Prices

Boesch Lamp Co., 1135 Mission St., San Francisco

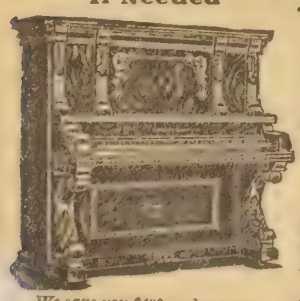
Established 1869 Incorporated 189

CORNISH **From Factory to Home On a Year's Free Trial**

Two Years' Credit If Needed

Easy Terms

Why Shouldn't You Buy As Low As Any Dealer?



Buy On The Cornish Plan which, in brief, places a strictly high grade piano or organ in your home, freight paid if you wish, **a rock-bottom factory price, upon terms of your own choice,** giving you 1 year to test the instrument before you need decide to keep it and **we give you an Ironclad Bond of Indemnity** which holds us to this offer and also insures instrument against defect for 25 years.

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The most beautiful piano and organ catalogue issued; it shows the choicest of our 50 latest styles and explains things you ought to know whether you buy from us or elsewhere. The book is yours for the asking. Write for it now.

We save you $100 and more on the purchase of a piano.

CORNISH CO. Washington, N.J. Established Over 56 Years

Save one-third—buy on the Cornish plan.

Household Department

EACH IN HIS OWN TONGUE.

A fire-mist and a planet,—
A crystal and a cell,—
A jelly-fish and a saurian,
And caves where the cave-men dwell;
Then a sense of law and beauty
And a face turned from the clod,
Some call it Evolution,
And others call it God.

A haze on the far horizon,—
The infinite, tender sky,—
The ripe rich tint of the corn fields,
And the wild geese sailing high,—
And all over upland and lowland
The charm of the golden rod,—
Some of us call it Nature,
And others call it God.

Like tides on a crescent sea beach
When the moon is new and thin,
Into our hearts high yearnings
Come welling and surging in,—
Come from the mystic ocean,
Whose rim no foot has trod,—
Some of us call it Longing,
And others call it God.

A picket frozen on duty,—
A mother starved for her brood,—
Socrates drinking the hemlock,
And Jesus on the rood;
And millions who, humble and nameless,
The straight, hard pathway plod,—
Some call it Consecration,
And others call it God.

—William Herbert Carruth.

HER FIRST BEAU.

THE rosy cheeks cherry lips and dark eyes of Nannie McGee were enhanced by a real charm—a coyness of manner that robed her youthful innocence. Nannie was but 16, yet she was not too young to realize the damage done by her weakness, as she frequently saw others preferred before her, girls who were more forward though less lovable than herself.

"Invite Jamie to call on us; will you, mother dear?" she ventured to ask, as the young man who had all but won her heart, advanced toward them.

"You are too bashful, Nannie. Why don't you do it yourself? I wouldn't be lettin' th' girls laugh at me," said Mrs. McGee; and then, addressing Jamie, who was approaching them, his face beaming with good nature: "Good mornin', Mr. McGuire. How are you this foine mornin'?"

"O, I'm away up," said James McGuire. "I hope you are both well."

"We are real well," said Nannie.

"Shure, an' you must come an' see us," said Mrs. McGee.

"I shall be pleased to," said he, as he smiled roguishly at Nannie. "Will this evening be soon enough?"

"Indade an' it is, James, an' th' sooner th' better," said Mrs. McGee.

When they had reached home Nannie received orders from her mother to prepare the sitting room for the occasion; and the young girl made a beautiful picture of life's budding flower, her sincere dutifulness beaming through her buoyant, dilated hopes, as she gayly tripped about and dusted and re-arranged the old pieces of furniture in their little parlor.

At seven o'clock a gentle rap at the door, made Nannie's heart beat fast. "I love him—I know I do—and I'm afraid he won't like me," she was thinking as she opened the door.

But Mr. McGuire was a bright young man, seven years her senior, and he declared to himself, "I am in love with a bashful beauty, and I shall make a conquest possible." Accordingly, he brought with him a stereoscope and a number of fine views, that he might carry young Nannie out of her self-consciousness with a pleasant intellectual training.

Mr. McGuire thought it to his interest to be very close to Nannie, as he placed the pictures and held the scope to her eyes, and at one time he hit her forhead a little rap with the handle. Nannie placed her finger on the spot and laughed girlishly.

But Mr. McGuire declared that he would have to make the examination, so he arose and imprinted a kiss upon the offended flesh. "That's the way we cure babies," said he. And it happened that the mother, who was in the adjoining room, looked at that very moment from over her spectacles and through the open door. She must have seen it, as she whispered to herself, "Arrah! phwist! aisy!"

The evening advanced, and as Mr. McGuire continued charming, and being charmed, Mrs. McGee decided that "the neighbors might be criticisin'" so she walked quietly into the room, spectacles in hand, and as she did so the clock struck ten times, ten loud, heavy strokes, during which time silence reigned. At the last stroke Mrs. McGee said, while looking sympathetically upon the two young people, "Shure, the clock is unmannerly!"

Mr. McGuire threw back his head and laughed heartily, taking it as a good joke. "That's right, mother," said he, "the clock does not speak pleasantly," and continuing: "Perhaps I had better ask permission to call you mother?"

"You may call me mother whenever you like," she said.

"For the rest of my life?" queried Jamie.

"Yes, said Mrs. McGee, "for the rest of your life."

"Then I say good-night," and tapping Nannie's curly head with his hat, he said, "I spent three of the happiest hours of my life with you." Bowing an adieu to Mrs. McGee he took his leave.

When the door closed behind him, Nannie, while looking at her mother through wide eyes, said: "Am I engaged?"

"Faix, an' that's what they calls it," said Mrs. McGee.

About the House

JUST ABOUT TOWELS AND SOAP.

IT IS now known that many skin diseases and forms of sore eyes are contagious and for this reason the most scrupulous precaution should be taken to protect the other members of the family, and the only safe way is for each member of the family to have his own towels and soap. The kitchen roller towel should be abandoned and in its place plenty of the small cheap towels provided and this will be no imposition on the wash woman for it is easier to wash a number of small towels than two or three large ones.

Towels should never be put away damp for a mold may form on them that is said to be very injurious to the skin.

Save all the fragments of nice toilet soap and fill soft flannel bags with the pieces and use them in the bath. They make a fine lather and every small bit of soap can be used up. Another good way to use up the small pieces is to put them in a small pan and place them on the back of the stove. When they get heated through, stir

Appell's SOUTH AFRICAN WATER BAG

Take no Substitute

Keeps water cool 48 hours or longer; in sun or shade; great boon to prospectors, surveyors, sportsmen, stockmen, farmers, teamsters, anyone exposed to dry or warm weather. Used by U. S. Gov't. Strong, light, convenient to carry. Guaranteed.

FOR SALE BY DEALERS EVERYWHERE

Made by Adam Appell Water Bag Co., Portland, Or.

H.H.H LINIMENT

A SAFE-GUARD IN YOUR HOUSEHOLD.

FOR SORE-THROAT, RHEUMATISM NEURALGIA, SPRAINS, BRUISES SWELLINGS, POISONOUS BITES LAMENESS IN BACK-SHOULDERS AND LIMBS, CUTS, OLD SORES STIFF JOINTS, CORNS, BUNIONS CHILBLAINS, ETC.

THE STOCKMAN'S STANDBY.

SAFE-PROMPT-SUCCESSFUL TREATMENT FOR THE MANY AFFLICTIONS OF THE HORSE & OTHER DOMESTIC ANIMALS.

CAN BE USED TO BLISTER, OR NOT-AS NEEDED. FULL DIRECTIONS.

PROVEN THE BEST BY 40 YEARS OF TEST.

50¢ & $1 Sizes. Sold Everywhere.

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H.H.MOORE & SONS, MFG'RS. AND PROPRIETORS STOCKTON — CALIF.

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Of all ready Roofings, Pioneer "Rubber Sanded"—and Pioneer "Rubber Flaxine"—are best.

No other roofings compare with them in wearing qualities.

Before you decide on what roofing to use, it will pay you to investigate "Rubber Sanded" and "Rubber Flaxine."

Samples and Roofing Booklet "F" mailed free upon request.

PIONEER ROLL PAPER CO.

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Manufacturers of Ready Roofings and Refiners of Asphalt.

Hague Domestic Oil Burner

Showing the Method of Attaching to Cook Stove. A device for using low grade distillate. Saves 40 per cent of cost of coal or city gas—let us prove it. Write for circular.

Hague Domestic Oil Burner Co.

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Edison Phonographs, Victors, Zonophones

Records and Supplies, $10.00 orders delivered at your nearest railroad station upon receipt of full retail price. Write for catalog.

Peter Bacigalupi & Sons, 941 Market St. San Francisco

When writing advertisers, mention Cultivator.

in a little powdered borax, then flour your hand and mould the melted soap into a small cake and the soap will do good service again.

Fat of any sort that has lost its freshness may be laid aside for soap, hard or soft, and by buying a can of reliable potash you can make nearly all the soap you will need. Full directions come with each package of lye and quite a number of blocks of snow white soap can be made at the merest trifling cost. Before turning the melted fat into pans to cool, stir in a tablespoonful of borax which has been dissolved in warm water, and if the soap is to be used for the toilet a little oil of rose can be added, and a pound of borax dissolved in hot water and stirred in a newly made barrel of soft soap before putting it away will save three-fourths of the labor of washing as the borax softens the water and the fabric will be much whiter and cleaner.

It takes only about one-half hour to make the nice white soap and after it is made it should be left to dry for several weeks before using when it will become hard and white.—A. M. H.

HOMEMADE CHEESE.

As I have never seen a recipe for homemade cheese as simple and easy to make as the recipe I use, thought I would send one.

First go to your druggist and get a bottle of rennet tablets; and if you want your cheese yellow get a bottle of cheese coloring. The tablets come twelve in a bottle and cost 25 cents per bottle.

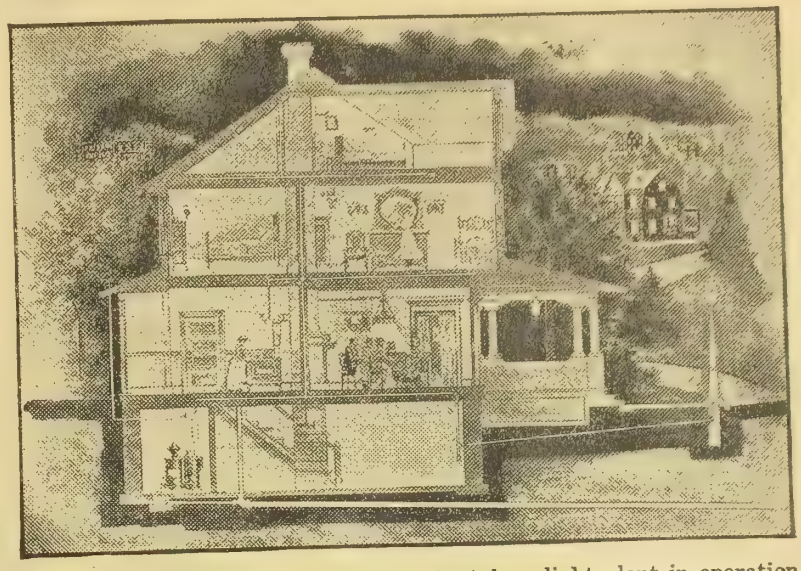
Strain ten gallons of milk into your wash boiler. If you haven't enough morning's milk, use the milk from the night before, but be sure it is sweet. Place on stove and dissolve one-sixth of a coloring tablet in a half teacup of cold water and stir into the milk till thoroughly mixed. When the milk is a little warmer than when it came from the cow lift the boiler from the stove and add one rennet tablet, previously dissolved in a half cup of cold water. Stir for two minutes. Then cover with a tablecloth folded several times and let stand for one hour, when it will look very much like clabber milk cheese. Now place a thin cloth in your colander (a piece of old toweling or the inside sugar sack will do) and lift out several handfuls of cheese. Work and press out all the whey you can and pack into cheese mold. For a mold I use a bread steamer. Place a square of thin cloth in the steamer and pack the cheese as solid as possible. Sprinkle each layer lightly with salt, using about one tablespoonful for the whole cheese.

When your cheese is all packed into the mold place something flat on top. The bottom out of a cake tin does nicely. Set your flatirons on this and leave for twenty-four hours. Remove from mould and place in a cool, dry place, and turn every day for a month, when it is ready to eat, although it gets better by standing longer. Cheese made in August will keep till warm weather comes again.

These directions may sound complicated, but are really very simple after you have tried them, and the cheese is as good as any bought at the store.—Mrs. A. J. S.

"We were put here on this planet to overcome obstacles for ourselves, but there's a heap of us that find it easier tu turn th' job over tu lawyers."

Light and Cook with Colt Acetylene



Here we have a sketch showing a Colt Acetylene light plant in operation. You will note that it is a very simple outfit that can be installed in any house without trouble. The small machine simply sets in one corner of the cellar or shed on a low platform, and is connected with chandeliers in every room, by small pipes running inside the walls, out of sight. That's all there is to it—just the machine, the fixtures and the pipes. Over 150,000 country homes, churches, hotels and stores are lighted by such plants. You can obtain full information concerning Colt Acetylene plants and installations, fixtures, stoves, etc., by addressing

Fowler Shankland

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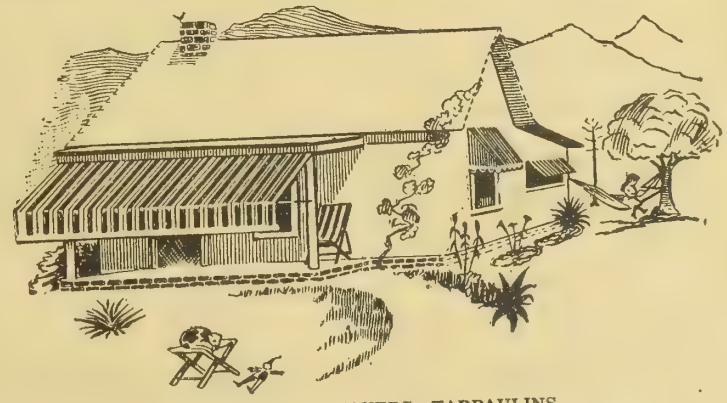
204 Severance Building
Corner Sixth and Main

LOS ANGELES
Phone F7514

CANVAS FOR THE RANCH



AWNINGS, PORCH SHADES, STACK COVERS, TARPAULINS, IRRIGATING HOSE, PICKING SHEETS, PICKING BAGS, WATER COOLERS, WOOL SACKS, KHAKI SUITS for men and women.

Write for Canvas Goods Catalogue

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Main 8447 **Home 10087**

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SLUMBERLAND MATTRESS

DIRECT TO YOU—WE PAY THE FREIGHT

We want you to know about our ***SLUMBERLAND MATTRESS.*** Only the best long white staple felted cotton is used; it is full weight; the quality of the ticking is excellent. The workmanship is unsurpassed. It has the popular Imperial edge and has double row of stitching on the box.

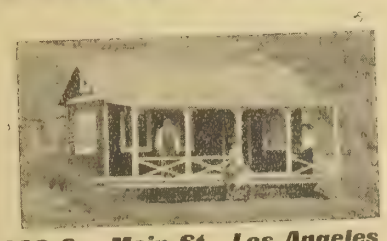
All sizes and three weights: ***36 lbs.,*** price ***$16; 40 lbs.,*** price ***$18; 45 lbs.,*** price ***$20.***

Prompt Delivery. Guaranteed. Write to Us.

PEASE BROS Furniture Co.

640-646 South Hill St., Los Angeles, Cal.

Baker Portable Houses



Best every way. Bungalows, cottages, garages and all kinds of **Portable Buildings.** See full size house at Exposition today, 320 South Main St. Send for catalogue with cuts and prices.

320 So. Main St., Los Angeles

Pacific Portable Construction Co.

Main 835, A7456, So. 229

San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, June 16, 1909.

Butter.

Butter took an advance on Monday and Firsts now stand where Extras were quoted last week. Cooking also is a notch higher.

Produce Exchange wholesale quotations are as follows with actual selling price to the trade 2½c advance on Extras.

Creamery per roll ... .55@57½
Cooking 23¾

Cheese.

Southern California Anchor 18
Northern fresh 16½
Anchor Young America 19
Domestic Swiss 20
Imported Swiss 30

Eggs and Poultry.

The egg market has continued its ups and downs and today stands one cent lower than a week ago. Though an anomaly prevails in case count being marked up. Market is firm at present quotations.

Paying price f. o. b. L. A. are:
Eggs ....26@28
Case count buying price 24

Dealers pay for live poultry f. o. b. L. A.:

Hens per pound 3½ up ... .14
Stags and old roosters.....8
Fryers 2 to 2¾ lbs 18
Broilers 1½ to 2 lbs 17
Broilers 2 lb 30
Roasters 3 lbs and up 20
Turkeys 23
Geese ... .14
Ducks 14
Squabs ....1.25@1.75

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs from 175 to 200 pounds.....7½
Prime steers ....4@4¼
Heifers ....3½@3¾
Calves per pound 5
Sheep ewes per head .....3.75@4.00
Lambs per head .....3.25@3.50
Wethers ....4.50@5.00

Potatoes.

Wholesale prices are:

Sweets per box 3.00
New per box ....60@75
New per cwt 2.00
Early Rose Local 1.75
Burbank local 2.75
Highlands ....2.25@2.50

Onions.

Wholesale quotations:

Northern Aust. Brown 3.50
Imperial Bermudas per crate 1.00@1.15
Texas Bermudas per crate ..1.00@1.10
Coachellas crates ....75@85
Coachellas sacks ....1.15@1.25
White wax crate 1.00

Vegetables.

Artichokes locals ....40@75
Asparagus ....5@7
Beets per sk ....90@1.00
Beans string ....3@5
Cabbages per sack 75
Celery per doz ....1.00@1.25
Chili per lb 25
Chili dried ....9@10
Cucumbers per box ....1.15@1.40
Cauliflower per crate .....1.50@1.75
Carrots per sk .....1.00@1.25
Corn per doz 25
Egg plant ... .8@12
Green onions per doz bunches ..15@25
Horseradish per lb 12
Summer squash ....40@50
Lettuce choice ....50@75
Mushrooms per basket 3.00
Oyster plant 50
Peas per lb ....3@5
Parsley doz ....20@40
Parsnips ....15@20
Rhubarb Northern per box ..1.75@2.00
Rhubarb Crimson Winter ....75@1.00
Radishes per doz ....15@20
Spinach per doz ....15@20
Turnips sk ....90@1.00
Tomatoes crate ....1.50@1.75

Citrus Fruits.

Navels ....1.25@2.75
Tangerines halves ....1.60@1.75
Grapefruit ....1.50@3.50
Lemons ....1.00@2.25
Unpacked ....1.00@1.35

Fresh Fruits.

Wholesale prices on the market are:

Apricots per crate ....85@1.00
New apples 50
Blackberries ....3@4
Cherries white ....35@50
Cherries black ....75@85
Cherries per lb ....5@6
Cherries, white bulk ....3@5
Currants ....1.25@1.35
Figs ....75@1.15
Gooseberries ....8@10
Loganberries ....3½@4
Loquats per lb ....2@3½
Peaches, box 75
Pears box ....1.00@1.50
Raspberries ....6@7
Strawberries ....3@6
Watermelons ....50@75

CANTALOUPES.

The first car of cants is to arrive this week. Express shipments have been received more and more freely and the full cars are promised within a day or two. Prices have of course shaded until the minimum quotations are supposed to be reached. Market is very firm at present quotations.

Cantaloupes specials ....75@1.00
Cantaloupes ponies ....2.25@2.50
Standards ....3.50@3.70

Dried Fruits.

Wholesale prices are:

Apricots ....10@12
Evap apples fy per lb 8½
Figs loose 5
Peaches ....6@8
Pears 9
Plums pitted ....8@9
Nectarines ....7½@9
Prunes ....7@8

RAISINS—Muscatels, 2-crown, loose, 50-lb. boxes, lb., 3½c; do., 3-crown, 4c; do., 4-crown 5c; sultanas, bleached, lb., 9c; do., unbleached, 3½@4c; new seeded raisins, 16-oz. packages, 6c; do., 12-oz. packages, 5c.

Beans Dried.

Wholesale prices are:

Pink No. 1 ....3.75
Limas per ctl 4.50
Black eyes 3.50
Lady Washington 5.75
Small White 6.50
Garvanzas 4.50

Nuts.

Almonds IXL per lb 15
Pecans polished ....15@17
Peanuts California 5
Walnuts No. 1.....12@13
Walnuts No. 2 ....9@10

Honey.

Wholesale quotations:

Extracted water white 7
Extracted Light Amber .....5½@6
Comb Water White 15
Comb white 14
Beeswax 25

Hay.

Prices paid to producers f. o. b. Los Angeles are as follows:

New Barley hay 13.00
New alfalfa local 13.00
New alfalfa Imperial .... 10.50@11.50
Wheat hay 13.00
Tame oat 15.00

Grains.

Wholesale selling price f. o. b., Los Angeles:

Wheat new per ctl ....2.35@2.40
Kaffir corn 2.00
Corn Eastern bulk 1.95
Egyptain corn 1.85
White oats 2.25
Seed Rye 2.00

Feed Stuff.

Wholesale selling price f. o. b., Los Angeles:

Cracked corn 2.00
Shorts 1.95
Bran 1.70
Cocoanut cake 1.35
Cocoanut meal 1.85
Cottonseed meal 1.25
Oil cake meal 2.50
Feed meal 2.05
Cracked wheat 2.50
Rolled Barley 1.60

San Francisco Markets

SAN FRANCISCO, June 15, 1909.

Butter.

Butter market is very quiet and a half cent advance is noted on extras during the week. Nothing of note can be said of conditions.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras per lb 26½
California firsts 25½
California seconds 25

Cheese.

California flats ....12@14
Cal Young America fy .....15½@16½
Young American Oregon fy 16½

Eggs and Poultry.

Eggs advanced the latter part of last week to 27½ for extras and later declined almost daily till present quotations were reached. Market is not strong.

Official quotations of the S. F. Wholesale Dairy & Produce Ex. are:

Fresh ranch ....22@26½
Hens per doz ....4.50@10.00
Roosters ....4.00@12.00
Fryers per doz ....5.00@6.50
Broilers ....2.50@4.50
Geese per pair ....1.50@1.75
Ducks young ... .5.00@8.00
Pigeons young .. ..1.00@2.00

Live Stock.

San Francisco prices gross weight:

Steers ....3@4¼
Cows and heifers ....2@3½
Hogs ....4@7¼
Calves per lb ....3½@5
Milk lambs 4¾
Wethers No 1 unshorn 4½
Ewes No 1 ....3¾@4
Shorn sheep ....½c less

Potatoes.

Wholesale market quotations:

River white fy sacks .....1.85@2.00
Sweets per crate ....1.50@2.00
Oregons ....2.25@2.40
New potatoes white ....1½@2

Vegetables.

Wholesale quotations:

Asparagus per box ....1.00@2.00
Bell peppers per basket .....75@1.00
Brussels sprouts per lb .....3@5
Cabbage per box .....2.00@2.25
Cauliflower doz ....75@1.00
Carrots per sk ....65@75
Celery per doz .....40@60
Cucumbers per box ....65@75
Chili peppers per lb ....10@20
Corn per doz .....10@15
Egg plant per lb ....7@10
Green peas per sk ....1.00@2.00
Mushrooms per lb .....12½@25
Squash per box ....75@1.00
Onions green per box ....50@60
Rhubarb per box for bay ....1.00@1.50
String beans ....2@4
Tomatoes box Mexicans .... 1.50@2.00
Tomatoes Cal ....75@1.00
Wax Beans ....4@6

Onions.

Australian Brown 4.00
New green per box 65
New red per sk ....50@65
Yellow ....75@1.00

Citrus Fruits.

Navels ....1.75@3.00
Valencias ....2.50@2.75
Grapefruit ....1.00@3.25
Lemons ....75@3.25
Limes ... .4.50@5.00

Fresh Fruits.

Apricots box ....40@65
Apples new green ....50@1.25
Cherries Black Tartarian .....50@75
Cherries loose black per lb .....3@5
Apples new green ....40@85
Cherries loose black per lb .....4@6
do white ....2@3
Cherries Royal Anne .....50@65
Figs blk box .....1.00@1.25
Malindas per chest ....3.00@4.00
Cherry plums per box .....35@50
Peaches per box ....40@65
Longworth per chest ....5.00@7.00
Nutmeg melons, ponies .... 3.25@3.50
Nutmeg specials ....1.25@1.50
Nutmeg standards ....4.00@4.50
Pineapples per doz ....3.00@6.00
Pears box ....75@90
Raspberries per chest .....4.00@6.00
Gooseberries per chest .....4.00@6.00
Logans per chest ....1.50@2.50
Blackberries chest .....4.00@5.00
Currants per chest ....4.00@6.00

Dried Fruits.

Prunes 4-size basis 2½
Santa Clara 2¾
½c premium for larger sizes
Apricots per lb; Choice 8½; fancy 10½@11.
Peaches—Choice ..4¾; fancy ..6@7½
Apples evap ....5@7½
Pears ....5@8½
Figs ....2½@4
Nectarines ....5@6
Pitted Plums ....7@8

RAISINS—1908 crop, f. o. b.: Fancy Seeded No. 16, cartons, 4½c; do, No. 12, 3¾c; do, Choice, No. 16, 4c; do, Choice, No. 12, 3½c. 50-lb. bxs: Loose Muscatels, Standard, 4-crown, 4c; 3-crown, 3c; 2-crown 2½c; Seedless Thompson, unbleached, 3½c; Seedless Sultanas, unbleached. 2¾c; Dried Grapes, 2c; London Layers, clusters, 6-crown, $3; 2-crown, 90c; 3-crown, $1; 4-crown, $1.50; 5-crown, $2.50.

Nuts.

Walnuts soft shell 9½
Hard shell ....6@8½
Ne Plus Ultra 10½
Almonds Nonp 11½
Pecans ....15@17
Chestnuts ....2@10
Peanuts ....5@6
Pine nuts ....22½@25

Beans Dried.

Limas ....4.00@4.20
Pink ....3.15@3.25
Small white ....6.50@6.75
Large white ....5.50@5.75
Black eyes ... .3.35@3.50
Red kidneys ....3.60@3.85
Garvanzas ....3.00@3.25
Bayo ....5.40@5.50
Horse beans ....2.00@2.10

Hops.

Hops 1908 crop ....6@10
Old crop ....2@6
1909 crop contracted for at ....12@13

Honey.

White comb ....11@12½
Light Amber ....9@10
Extracted W W ....7@8
Extacted light amber .....6@7
Beeswax per lb ....23@30

Hay.

Arrivals of hay during the week just past that have come into the San Francisco market have amounted to 3250 tons. This is a slight increase over what we have been receiving the preceding two weeks, and shows that more hay is gradually being baled and rushed into this market to relieve the tense situation that developed when the end of the old crop was in sight.

Old hay is practically out of the market.

The majority of our arrivals consists of wild oat hay, which is bringing here from $11.50 to $14.50 for the medium class, and from $15.00 to $16.00 for something exceptionally fancy; new wheat hay is gradually increasing in volume, but not enough has been arriving of this class of hay to supply the usual demand. Therefore No. 1 lots of wheat hay and of wheat and oat hay have been in demand this week, and have sold at fairly high figures. With the increased movement of wheat hay to the market, which is expected to develop, will no doubt cause a more moderate range in prices being established.

Somewhat of hay has been selling in the country during the week for shipment to San Francisco, but such sales in the main consisted of lots that were baled or about to be baled, and could be immediately shipped in to the market.

Choice wheat hay .....20.00@22.00
No. 1 wheat or wheat & oat 19.00@20.00
No 2 wheat or wheat & oat 17.00@19.00
Choice tame oat .....17.50@19.00
Other tame oat ....15.00@16.50
New crop wild ....12.00@16.00
Stock hay ....7.00@9.00
Alfalfa ....11.00@13.50
Straw ....60@85

Grains.

Wheat No 1 ....2.10@2.15
Barley ....1.42½@1.50
Oats white ....2.15@2.25
Oats gray ....2.05@2.15
Rye new crop ....2.10@2.15
Corn Egyptain .....1.60@1.65
Corn Cal sm round ....2.00@2.10
Alfalfa seed, Cal .....16@18
Mustard yellow .....5¾@6
Mustard brown ....3¾@4½
Millet ....2½@3
Broom corn seed per ton 23.50

Feed Stuff.

Bran per ton ....29.00@30.00
Feed cornmeal per ton ....38.00@39.00
Cracked corn per ton .....40.00@41.00
Rolled barley per ton .....33.00@34.00
Rolled oats per ton .... ..44.00@47.00
Oil cake meal per ton .....38.50@40.00
Cocoanut cake per ton .....25.00@26.00
Middlings ....33.00@35.00
Mixed feed per ton .....30.00@32.50
Shorts ....31.00@32.00

Deciduous Market

SACRAMENTO, CAL., June 12, 1909.

The market on cherries has declined this week, which is due to the poor condition on arrival. The supply has decreased materially, in fact, only small shipments will be made next week.

Alexander Peaches have been in good demand, as well as Clyman Plums. The shipments of Alexander Peaches decreased very noticeably during the later part of the week, and there will be a lull in peach shipments until the other varieties come in freely.

Cots have sold exceptionally well. Shipments of cots from the Vacaville and Winters section will decrease somewhat as the crop is light.

The following is the range of prices in the auction markets yesterday:

Chicago; Black Oregons $1.10 to $1.30, Royal Annes 45c to $1.35, Tartarians 70c to $1.45, Alexanders 85c to $1.35, Bings $1.55 to $2.15, Royal Cots $1.85 to $2.05.

New York; Tartarains $1.00 to $2.10, Royal Annes $1.10 to $2.10, Biggereau $1.10 to $1.85, Alexanders 75c to $1.50, Royal Cots $1.10 to $2.10, Biggereau to 2.50.

Boston; Tartarians 85c to $1.45, Biggereau 95c to $1.35.

On June 8th the following buying prices were established in Newcastle: Alexander peaches 50c, Triumph peaches 60c, Clyman plums 60c, Red June 75c, Newcastle Cots 65c, Royal Cots 75c, Royal Annes 90c, Black Oregons $1.00.

The quotations to the Eastern trade are as folows: Alexanders $1.00, Triumph $1.00, Cots $1.25, Plums $1.10, Royal Annes $1.25, Black Oregons $1.35. —T. C. Tucker.

Citrus Market

LOS ANGELES, June 16, 1909.

The indications are that the 6000 cars of Valencias which are now estimated to be the output for the present year will command a fair return. If the output should reach the estimate, it would be more than double that of any preceding year. Present prices are ranging close to $2.00 f. o. b. California. This is not a record price by any means, but one which will prove entirely satisfactory to Valencia men if maintained throughout the season.

Next year's Valencias seem to be indicating a fair setting of fruit but the navels have dropped very badly since the first of June warm weather. Some claim that there will be absolutely no crop, but as a rule more conservative growers maintain that a fair crop may yet be secured.

Lemons are selling very readily and

at most satisfactory prices. The eastern weather has been very favorable for the last few weeks to the lemon market.

Shipments.

Total shipments of citrus fruit this year since November 1st are: 29,167 cars, of which 25,396 were oranges, 3,771 lemons. To the same date last year, 24,792 cars were shipped, of which 21,718 were oranges, 3074 lemons.

NEW YORK, June 15.—Fifteen cars oranges and two cars lemons sold. There is an easier tone to the market; prices are slightly lower. Weather clear and hot.

	Average.
NAVELS—	
Alta Cresta AH Exchange	3.55
Robusta AH Ex	3.00
Hobo AH Ex	2.55
Quail OK Ex	2.75
Orchard Run	2.50
Euclid Euclid Fruit Co	2.40
VALENCIAS—	
Pointer ACG Ex	2.80
Green Crown ACG Ex	2.35
American Beauties	2.80
Standard	2.45
Independent, Growers' Fruit Co	3.20
Stock Label Growers' Fruit Co	2.75
SEEDLINGS—	
Titus Ranch San Marino GPA	2.40
El Toreador San Marino GPA	2.25
Titus Ranch San Marino GPA	2.35
El Toreador San Marino GPA	2.20
Pointer ACG Ex	2.05
LEMONS—	
Setter	1.85
Hillside	1.90
Palomar	1.35

BOSTON, June 15.—Fourteen cars sold. Weather hot. Market continues strong.

	Average.
NAVELS—	
Pride of Corona	2.65
Fiesta Riverside Ex Riverside	2.50
Volunteer SA Ex	2.70
Standard National O Co	3.35
Peacock Worthley & Strong	2.50
Golden Gate Red GOA	2.80
Corona Beauty QC Ex Corona	2.60
Gold Buckle RH Ex E High	3.50
Golden Flower Red GOA	3.65
GRAPEFRUIT—	
California Beauty	2.20
Golden Flower Red GOA	2.00
LEMONS—	
Silence Flagler Fruit Co	2.10
Pet SA Ex	3.20

NEW YORK, June 14.—Twenty-nine cars oranges and two cars lemons sold. The market is very strong on good fruit. Weather clear and hot.

	Average.
NAVELS—	
Cerrito L V W Brown	3.70
Swastika L V W Brown	2.85
Elephant OG Cash Assn	3.10
Plain Ends OG Cash Assn	2.45
Mtn Lion Speich & Co	1.90
Carnation M & Greene Co	2.10
Trop Queen M & Greene Co	1.90
Kaiser Hanson & Sears	2.10
Euclid Euclid Fruit Co	2.45
Idylwild Collins Fruit Co	2.60
LaLoma Queen Collins Fruit Co	2.25
Orchard National Orange Co	3.40
Standard National Orange Co	3.00
Columbia Imp National Orange Co	3.10
Robusta AH Exchange	2.90
Blue Globe Riverside Exchange Riv	3.10
Red Globe Riverside Ex Riv	2.85
Sweetheart AF Ex Highgrove	2.90
Bear OK Exchange	2.40
Gold Buckle RH Exchange	2.50
Victoria AH Exchange	2.75
Lincoln AH Exchange	1.65
LaMesa Riverside Exchange Riv	2.55
Quail OK Exchange	2.30
Orchard Run	2.40
SEEDLINGS—	
Red Globe Riv Ex Riv	2.25
Cal Orange Riv Ex Riv	2.05
Titus Ranch San Marino GPA	2.60
El Toreador San Marino GPA	2.25
Titus Ranch San Marino GPA	2.55
El Toreador San Marino GPA	2.15
Mission Bells A B Chapman	2.20
Bouquet Randolph Fruit Co	2.15
Golden Pheasant Ind Fruit Co	2.05
VALENCIAS—	
American Beauty	2.65
Standard	2.20
Bouquet	3.15

BOSTON, June 14.—Twelve cars sold. Weather hot. Market is strong and higher.

	Average.
NAVELS—	
Quail OK Exchange	2.85
Tunnel ST Exchange Fernando	2.30
Standard National Orange Co	3.20
Rey ST Ex Fernando	2.90
Orchard National Orange Co	3.75
SEEDLINGS—	
Titus Ranch San Marino GPA	2.80
El Toreador $2.70 and	2.65
GRAPEFRUIT—	
Niagara Stewart Fruit Co	2.35
Bonita Sweetwarter F Co Bonita	3.10
Hibiscus	2.20
Stock Label	1.65
Quail OK Exchange	2.40
VALENCIAS—	
Niagara Stewart Fruit Co	2.85
Rescue choice	2.55
ST. MICHAELS—	
Magnolia W & Strong	3.20
Halves	1.35
LEMONS—	
Silence Flagler Fruit Co	1.95
Camel QC Exchange Corona	2.00
Pet SA Exchange	3.50
Greyhound	3.15

PITTSBURG, June 14.—Twelve cars sold. The market is advancing; prices are from 10c to 15c higher on navels; very steady on lemons. Weather favorable.

	Average.
NAVELS—	
Chuckwalla Speich & Co	65
Golden AH Ex Arlington	2.55
Gavilan Riv Ex Riv	2.10
Coyote OK Exchange	2.10
Blue Jay OK Exchange	2.25
Scroll Riverside Ex Riv	1.95
King Leo SA Exchange	2.05
Owl OK Exchange	2.30
Klondike Speich & Co	65
Setter A HEx Arlington	2.50
Braeside Riverside Ex Riv	2.50
Owl OK Exchange	2.00
Fiesta Riverside Ex Riv	2.60
Pond Lily Riverside Ex Riv	2.15
Greyhound SA Exchange	1.80
SEEDLINGS—	
Mission Bells A B Chapman	2.55
Mission Memories	2.35
Violet DM Exchange Duarte	2.60
Blue Print Riverside Ex Riv	2.50
Green Print	2.30

PHILADELPHIA, June 14.—Four cars navels, fixe mixed, one sweet, one Valecia and two lemons sold. Market steady on navels. Weather warm.

	Averaeg.
NAVELS—	
Pomona SA Exchange	2.40
Coyote OK Exchange	1.85
Golden Scepter Rialto O Co	2.40
Hawk SA Exchange	2.10
Coyote OK Exchange	1.95
Riverside Oge Riverside Ex River	2.40
ST. MICHAELS—	
Humming Bird Riverside Ex Riv	2.75
Riverside Oranges	2.50
Golden Scepter Rialto Orange Co	3.25
Independent	2.90
VALENCIAS—	
Niagara Stewart Fruit Co	3.50
A-One E Peycke Co	3.20
SWEETS—	
Golden Scepter	2.40
Independent	2.40
Yuletide Redlands M O Co	2.35
LEMONS—	
Goldfinch SS Ex El Modena	1.35
El Modena	1.00
Silence Flagler Fruit Co	1.70
Romeo	1.05
Cry Baby	1.00

ST. LOUIS, June 14.—Weather favorable. Market stronger. Fifteen cars sold.

	Average.
NAVELS—	
Greyhound SA Exchange	1.95
Belt RH Exchange E Highland	2.05
Fruitilla Riverside Ex Highland	2.10
Volunteer SA Exchange	2.10
Selected N W Blanchard	1.40
Gold Buckle RH Ex E Highland	2.60
Fruita Riverside Ex Highland	2.20
Owl OK Exchange	2.05
Greyhound SA Exchange	2.05
SEEDLINGS—	
Selected NW Blanchard	1.50
Choice	1.25
Airship V C Ex Fillmore	1.10
Oriole	85
VALENCIAS—	
Pico ST Ex Whittier	2.95
LEMONS—	
El Dorado FGA Escondido	2.75
Fixaway	2.55
Arab SA Exchange	2.80
Duck	2.40
Corona Beauty QC Ex	2.50
Oriole VC Ex Fillmore	2.40
Lily QC Ex Corona	2.50
Orchid Atland F Co	2.80
Buscada	2.45

CINCINNATI, June 14.—Warm. Market steady. Two cars navels, two seedlings and one car lemons sold.

OF VALUE TO EVERY FARMER.

Bostrom's Improved Farm Level which is being advertised by the Palace Hardware Company of San Francisco in the Cultivator, is one of the best and simplest implements for farm use to be used either in terracing, ditching, irrigation or drainage work, that is on the market. It is easily adjusted and keeps in perfect condition and there seems to be no other farm level on the market today which even approaches this Improved Farm Level in accuracy and durability. I. A. Brady of the Bostrom, Brady Manufacturing Company of Atlanta, Georgia, at present passing through California on his way to the Seattle exposition informs us that they will have this level on exhibition at the expositio. Full information, circulars and prices can be obtained at any time by those wishing to investigate the farm level by writing the Palace Hardware Company, 581 Market St., San Francisco, or the home office at Atlanta, Georgia. A booklet with favorable comment on the work of the level will be sent on request. Every irrigator and especially one who is preparing land for irrigation should surely have one of these instruments. It will prevent errors which are expensive and often are exasperating for a lifetime.

NEW ROAD SIGN CAMPAIGN.

Five thousand doubtful points on public highways which cause confusion to motorists will be supplied within the next few months with durable road signs, properly labeled with directions, by Thomas B. Jeffery & Company, makers of the Rambler.

Two years ago five thousand Rambler signs were put up through the Middle West. A census taken shows that practically every one of these signs is still in place and giving service. As a result of this experiment, the Rambler people will put out through their dealers and others a second lot.

The signs are 12 x 24 inches in size, made of sheet metal, bearing the inscription "Rambler Automobiles" and below this a white space in which is painted the name of the town and the distance with the direction indicated by an arrow. No other advertising matter is allowed to appear on the sign. In this way the signs are made of distinct value to all users of the public highways and are, therefore, respected as ordinary advertising signs have never been.

Automobile clubs in various parts of the country which have planned a systematic marking of the roads have been given the co-operation of the Rambler people, who have supplied them with signs, free of charge, painted and ready to be placed. The movement has accordingly met with the hearty approval of motorists everywhere.

PORTABLE HOUSES.

Portable houses are being considered more in a practical way to solve the housing problem than ever before, as the demands for them from different sources, proves them to be peculiarly adapted to fill a long felt want.

The growth of the ready-built, portable house business from an insignificant, experimental proposition is one of the industrial surprises of the last decade.

After years of experimenting there has been perfected a portable house of correct proportions and stability, at the very least possible cost. In addition to economy in cost, many other advantages are claimed, among them being attractiveness, possessing considerable architectural beauty and the short time required for their erection.

The houses are manufactured in sections and in erecting, it is necessary only to bolt and screw sections together. They can readily be taken apart and set up again without damage, should it be found desirable to change their location.

The materials used in the house are the best thoroughly seasoned Redwood or Oregon Pine and are so substantially made that they will withstand any climate.

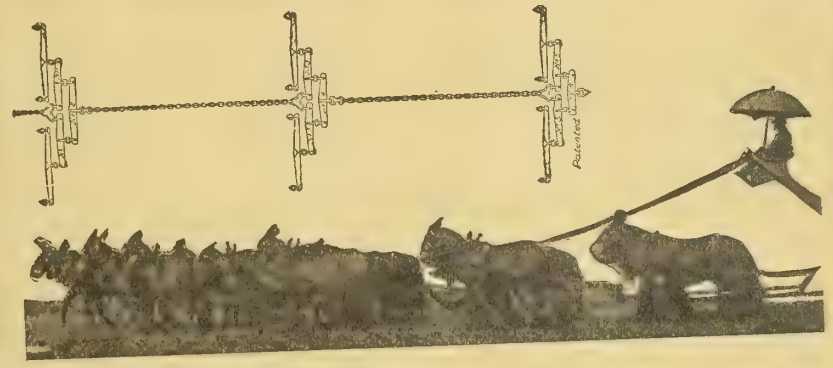
The Pacific Portable Construction Co., Inc., of Los Angeles, Cal., manufacture these houses and have erected their factory for the sole purpose of manufacturing portable houses, and are so located as to get the best shipping facilities. This factory is particularly equipped for this purpose and has been running to its fullest capacity to supply the demand for their houses. The work is under the direct supervision of Mr. F. W. Barker, who has had twenty years of experience in this line, and it has enabled them to put on the market a house possessing durability, compactness, style and strength, that can be easily transported and quickly and readily erected. A request will bring their catalogue if you mention the Cultivator.

A DRY YARD NECESSITY.

Of all the products of the orchard which must be handled quickly the apricot stands first. The fruit often ripens so fast that it is impossible to secure the help to cut it all. Cutting and pitting by machinery was long considered an impossibility. But for the past few years a little machine has been doing such magnificent work that it is found in nearly all yards and considered worth many men. It is the Briggs New Improved Fruit Pitting Machine. It is easily run by one man and will pit a ton of 'cots per hour or two tons of peaches. Besides it makes a clean cut of fruit which is as satisfactory to the trade as the hand cut. This is a good year to begin the use of such a machine.

The Briggs-Knight Mfg. Company of 336 E. 2nd street, Los Angeles, is the manufacturer and show large number of commendations from pleased patrons.

The Schandoney Equalizing Hitch



Positively Prevents Runaways

They are more expensive than these HITCHES. Why take the chances? Anybody can drive, it doesn't require an expert. Over four thousand of these HITCHES now in use, and not one a failure. Write today for further information, Catalogue, etc., to

Schmeiser Manufacturing Company Davis, California

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TAKE A VACATION
AND
GO SOMEWHERE

Excursion Rates via the Salt Lake Route are available to many points. For instance,

SEATTLE EXPOSITION CIRCLE TOUR $63.25

From all main line stations; slightly higher rates from other stations. Going via Salt Lake City and returning via San Francisco.

YELLOWSTONE PARK $70.00

From all stations in California and Nevada, except that rate from Long Beach and San Pedro is $70.70. Somewhat different rates for returning via San Francisco.

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Chicago, St. Louis, St. Paul, New York and many others, at about One Way First Class Fare for Round Trip. **For full particulars see Ticket Agent or ask me.**

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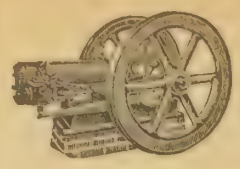
SALT LAKE ROUTE



Information That Is Worth

DOLLARS

To You

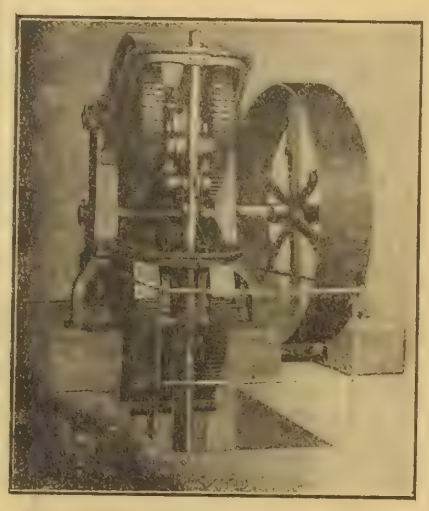
Isn't it worth money to know that with our patented vaporizer (found only on the Western) you will get from 25 to 30 per cent more power out of a gallon of low grade distillate than other engines get from a gallon of high grade gasoline? Five minutes' work with a scratch pad will show you what effect this will have on your fuel bills.

Ask us about the Nix-Frost Crude Oil Gas Producer, the cheapest power on earth using Crude Petroleum as fuel.

Western Gas Engine Company

Northern Branch: San Francisco, Cal. Los Angeles, California

The Smooth Running, Noiseless Pomona Deep Well Pump



It is thirty to fifty per cent more efficient than any centrifugal pump ever made. No high speed bearings to cut out. All breakages and rod troubles eliminated.

This is the only pump you can afford to buy if you consider your own interests. Hundreds of satisfied users testify to this.

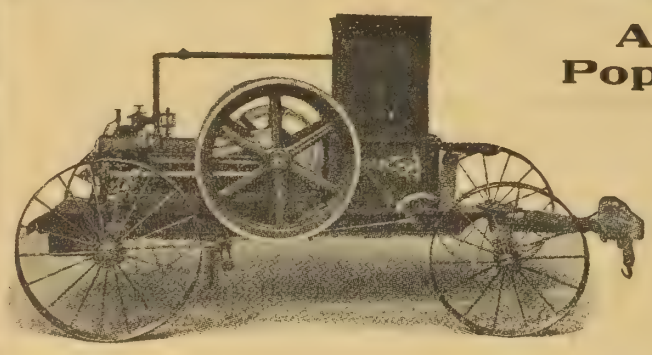
Used by the best water companies who know what a good pump is.

Send for a catalog or what is better come to POMONA and let us show you some of these plants in operation.

POMONA MANUFACTURING CO.
POMONA, CALIFORNIA

Lambert Portable Engines

Are Popular



2 1-2 to 20 Horse Power

Because Guaranteed to develop 10% in excess of rated H. P. Rigid construction and moderate weight. **Costs Less** than others not as good. Balanced centre crank prevents Vibration—most modern and effective cooling system. **We Believe** an inspection will convince you that the Lambert Portable Engine is far superior to any on the market, and we have made a price to get the business.

Smith-Booth-Usher Company
212-214 South Los Angeles Street Los Angeles, California

A Handy Little Engine

Just the thing to run the feed cutter, the pump, the churn, the grinder, or anything on the ranch. It's well named

The Little Wonder

Write or call on

Wm. Gregory
602 No. Main St. Los Angeles, Cal.

THE

Latest Deep Well Turbine Pump

Guaranteed to deliver from 100 gallons per minute upwards, depending on the diameter and capacity of well, from a depth of 50 to 300 feet below the surface. Can be either belt driven or direct connected to electric motor as occasion requires.

Write for Catalogue 46B.

A deep well pump that has no valves or plungers to wear or get out of order, no gears, consequently no noise or breaking of teeth.

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The American Pump has come to stay because every man that is using one is boosting for it. Get our prices and our guarantee before placing orders for irrigating plants. Send us your name and we will send you some interesting catalogs.

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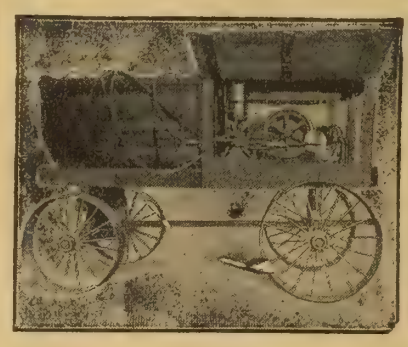

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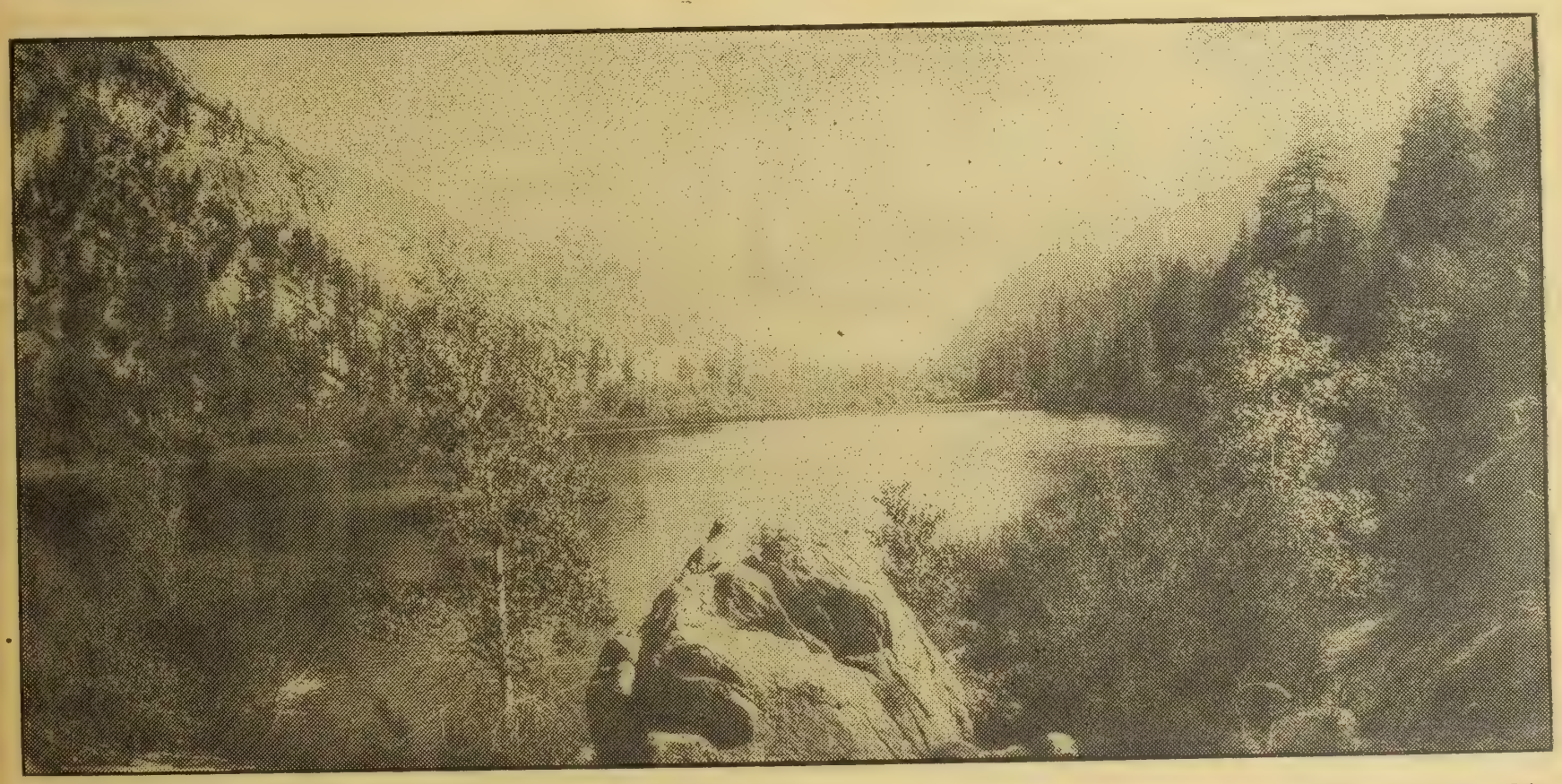
California Cultivator

Published Weekly — One Dollar a Year

Los Angeles — June 24, 1909 — San Francisco

A Mountain Lake in Kern County

Source of Some of the Wealth of the Rich County at the Head of San Joaquin Valley



Courtesy Bakersfield Echo.

"AN immense area of fertile soil, the greater part of which yet waits its first subjection to the plow, a supply of water for irrigation, abundant and easily accessible, and a climate that works hand in hand with the husbandman throughout the entire year make Kern county the land of promise and fulfillment to the farmer, the stockman, and the dairyman and the horticulturist.

"The large picture on this page, of a little mountain lake nestling among the pine-hung peaks of the high Sierras, gathering the waters from the snows that melt late in summer, to be sent down to the rich valleys, thousands of feet below, gives faint illustration of the great resources of Kern county.

"In variety there is everything from pretty mountain meadows and valleys, forests of pine, thickets of chaparral, rocky gorges and canyons covered with soft wild grasses and a scattering growth of oaks, lower hills with nothing but the short, winter-growing grasses to clad their round shoulders, warm mesas where only the lightest of frosts ever fall, and the broad, level, sunbathed plains of the great valley, walled in and guarded by its encircling hills.

"Every agricultural crop grown in the United States thrives in Kern county, from the wheat of Minnesota and the corn of Iowa to the cotton and rice of the gulf states. All the fruits—except those of the tropics—apples, peaches, apricots, plums, prunes, nectarines, pomegranates, oranges, lemons, limes, pomelos, olives, and all the grapes that ever made the vineyards of Spain and Italy fruitful, grow here in their perfection.

"All the gifts that nature can provide lie here, waiting for the hand of industry—not sparingly and grudgingly, but in the greatest profusion, plenty for thousands and tens of thousands who are willing to set their hands to the plow and do not ask that manna, baked and buttered, fall from the skies."

Future Citizens of Kerman, California

J. W. Brooks, J. B. Deardorff, J. W. Lamb, J. W. Cook, E. M. D. Smith, C. E. Wells, C. F. Anderson and L. W. Brooks, all of Towner Co., N. D. Together they bought 220 acres of land March 18, and will help to make Kerman the richest colony in California.

Do You Know

That the east is burning up with land hunger? That productive lands are getting scarce and hence higher? Do you know that the people east are just beginning to find out that there are agricultural lands in California and hence that we are on the eve of the greatest emigration movement California has ever experienced.

Do You Know

That as a consequence it behooves all who are landless in California but who hope sometime to enjoy the blessings of a landed home, to get busy and to secure the home before the other fellow gets it, and before prices have advanced to where they are prohibitive? That the easterners who are coming here now are astounded with the agricultural possibilities of "New California?" That they are buying themselves, and then going back home spreading the news of their find, and inducing others to come?

Do You Know

That ere long the man who owns productive land here will discover its value, and will refuse to part with it at several times the amount it now takes to "lift" it, and that when that time comes it will be everlastingly too late for many.

Do You Know

That the value of land depends upon what it will produce per acre? That land on the **Kerman Tract** is today the cheapest land in the United States, value of possible products considered? That this fact is becoming known, and that it is bringing more people here than have ever come to any other similar tract in the same length of time?

Do You Know

That the **Kerman Tract** excels when it comes to water right, quality and lay of soil, natural drainage, location, and in possibilities for fruit and alfalfa growing, dairying and poultry raising? That it is unsurpassed, if equalled, in the things that go to both home and money making? That it is being populated by the very best quality of people, the cream of the country? That undesirable people are not allowed to buy land here and that those who locate are protected against the scourge which has ruined so many otherwise promising colonies in California? If you do not know these things now

We Are Telling You

And we ask the privilege of further informing you. If you are interested we would like nothing better than the chance to satisfy you upon all these points, either by correspondence or by showing you over the tract. We consider it a pleasure to show interested visitors over the colony, and all comers are accorded courteous and considerate treatment. Our circular explains in detail what is here, and it is free for the asking. Write for it, and do it now. But, what is better, come here and satisfy yourself that the **Kerman Tract** is as represented, and that you are not missing something that cannot be retrieved by not taking advantage of this opportunity now. Either write to

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General Sales Agents

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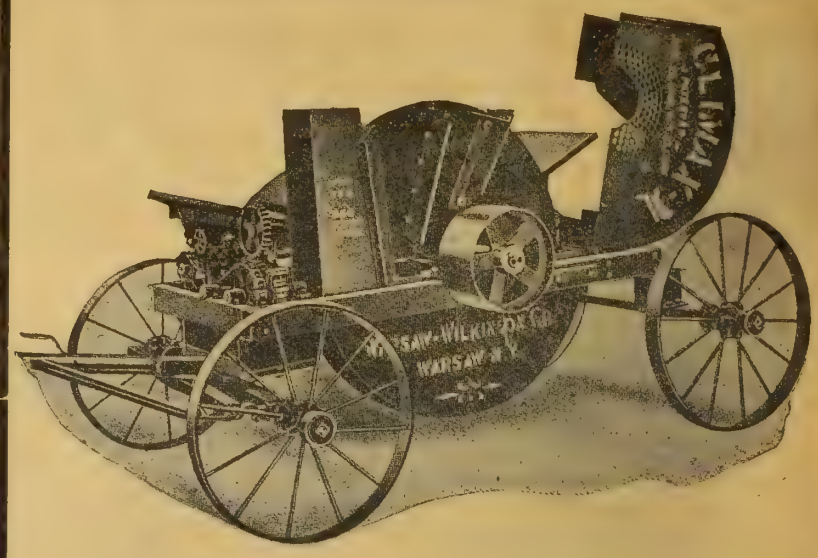
On this tract, and in two months, over 6,000 acres of new land was put under water, and into fruit, vines and alfalfa.

Climax Ensilage Cutters



In the Climax Pneumatic Ensilage Cutter both the cutting and elevating are done by a large wheel which carries the knives on one side and the elevating fans on the other. Both the cutting and elevating, therefore, are done at one operation, in much simpler manner and with an expenditure of much less power than in those machines where the elevating device is a fan attachment added to the cutter.

The convenience of having an ensilage cutter of large capacity on its own road wheels is obvious. We confidently assert that no other ensilage cutter is so easy to work and easy to move and set up as ours, or has such large capacity for power used. They are unequaled in simplicity, strength, durability, convenience and safety in operation, and the excellent quality and uniformity of the silage. We received at the

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for ensilage cutters of the side-wheel type, 15 to 25 tons of green corn per hour, where cut in one-half lengths, other feed in proportion. For further particulars, call on or address

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The board of supervisors of Lassen county are investigating the damage caused by sheep tramping over the roads.

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California Cultivator

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Forestry in the United States

Practical Ideas on the Preservation of Our Natural Resources by Gifford Pinchot, Forester of the U. S. Department of Agriculture

THE FORESTS of the United States cover an area of about 699,500,000 acres; or more than 35 per cent of the surface of the country. Before so large a part of them was destroyed they were perhaps the richest on the earth, and with proper care they are capable of being so again. Their power of reproduction is exceedingly good.

In the Northeastern States, and as far west as Minnesota, once stretched the great white pine forest from which, since settlement began, the greater part of our lumber has come. South of it, in a broad belt along the Atlantic and the Gulf coasts, lies the southern pine forest, whose most important tree both for lumber and naval stores is the southern yellow pine. In the Mississippi Valley lies the interior hardwood forest of oaks, hickories, ashes, gums, and other hardwood trees. It is bordered on the west by the plains, which cover the eastern slope of the continental divide until they meet the evergreen Rocky Mountain forest, which clothes the slopes of this great range from the Canadian line to Mexico. Separated from the Rocky Mountain forest by the interior deserts, the Pacific Coast forest covers the flanks of the Sierras, the Cascades, and the Coast ranges. Its largest trees are the giant sequoia and the great coast redwood, and its most important timber is the fir.

The forests of the Philippine Islands cover an area of more than 40,000,000 acres. Their timbers, almost wholly different from those of the United States, are exceedingly valuable, both as cabinet woods and as construction timber. An efficient forest service was organized in 1898, and following its reorganization in 1902 a new and excellent forest law was passed in 1904. The Philippine forest service costs but half as much as the revenue from the forests of the islands.

The island of Porto Rico contains a national forest reserve, the site of which was once covered with valuable hardwoods; but this forest has been much abused. Porto Rico, like the Philippines, has many kinds of wood valuable for cabinet making.

The Settler And The Forest.

When the early settlers from the Old World landed on the Atlantic coast of North America they brought with them traditions of respect for the forest created by generations of forest protection at home. The country to which they came was covered, for the most part, with dense forests. There was so little open land that ground had to be cleared for the plow. It is true that the forest gave the pioneers shelter and fuel, and game for food, but it was often filled with hostile Indians, it hemmed them in on every side, and immense labor was required to win from it the soil in which to raise their necessary crops. Naturally, it seemed to them an enemy rather than a friend. Their respect for it dwindled and disappeared, and its place was taken by hate and fear.

The feeling of hostility to the forest which grew up among the early settlers continued and increased among their descendants long after all reason for it had disappeared. But even in the early days far-sighted men began to consider the safety of the forest. In 1653 the authorities of Charlestown, in Massachusetts, forbade the cutting of timber on the town lands without permission from the selectmen, and in 1689 the neighboring town of Malden fixed a penalty of 5 shillings for cutting trees less than 1 foot in diameter for fuel. An ordinance of William Penn, made in 1681 required that 1 acre of land be left covered with trees for every five acres cleared. But these measures were not well followed up, and the needless destruction of the forest went steadily on.

First Steps In Forestry.

More than a hundred years later, in 1795, a committee of the Society for the Promotion of Agriculture, Arts, and Manufactures in New York made a report on the best way to preserve and increase the growth of timber. Four years afterwards Congress appropriated $200,000 for the purchase and preservation of timberlands to supply ship timbers for the navy, and in 1822, with the same object in view, it authorized the President to employ the army and navy to protect and preserve the live oak and red cedar timber of the Government in Florida. Since that time more and more attention has been given to the forests. In 1828 Governor De Witt Clinton, of New York, spoke of the reproduction of our woods as an object of primary importance, and in the same year the Government began an attempt to cultivate live oak in the South for the use of the navy. Three years later an act was passed which is still almost the only protection for the much-abused forests of the public domain.

In 1872 the Yellowstone National Park was established, and in 1873 Congress passed the timber-culture act, which gave Government land in the treeless regions to whoever would plant one-fourth of his claim with trees. In 1875, the American Forestry Association was formed in Chicago through the efforts of Dr. John A. Warder, who was one of the first men to agitate forest questions in the United States. In the centennial year (1876) Dr. Franklin B. Hough, perhaps the foremost pioneer of forestry in America, was appointed special agent in the Department of Agriculture. This was the beginning of educational work in forestry at Washington. Soon afterwards Congress began to make appropriations to protect the public timber, but nothing was done to introduce conservative forest management.

About this time forest associations began to be established in the different States, the most influential and effective of which has been that in Pennsylvania. The States also began to form forest boards or commissions of their own.

In 1888 the first forest bill was introduced in Congress. It failed to pass, but in 1891 an act was passed which was the first step toward a true policy for the forests of the nation. The first step toward national forestry is control of the national forests. This act, whose chief purpose was to repeal the timber-culture act, contained a clause which authorized the President to reserve timber lands on the public domain, and so prevent them from passing out of the possession of the Government.

The Public Domain.

In all the States and Territories west of the Mississippi except Texas, and in Ohio, Indiana, Illinois, Michigan, Wisconsin, Florida, Alabama, and Mississippi, all the land originally belonged to the Government. This was the public domain. It has gradually been sold or given away until in many of the States it has all or nearly all passed to other owners. But it still includes more than 470,000,000 acres, or nearly one-third of the United States, not including the Territory of Alaska, which has an area of about 350,000,000 acres. A large part of the public domain has been surveyed by the Government and divided first into squares 6 miles on each side, called townships, then into squares of one mile, called sections, and these again into quarter sections and smaller divisions. The lines which mark these divisions are straight and at right angles to each other. When any part of the public domain is reserved or disposed of it is usually located by reference to these lines.

Federal Forest Reserves.

When power was given the President to make forest reserves, the public domain still contained much of the best timber in the West, but it was passing rapidly into private hands. Acting upon the wise principle that forests whose preservation is necessary for the general welfare should remain in Government control, President Harrison created the first forest reserves. President Cleveland followed his example. But there was yet no systematic plan for the making or management of the reserves, which at the time were altogether without protection by the Government. Toward the end of President Cleveland's second administration, therefore, the National Academy of Sciences was asked to appoint a commission to examine the national forest lands and report a plan for their control. The academy did so, and upon the recommendation of the National Forest Commission so appointed, President Cleveland doubled the reserve area by setting aside 13 additional forest reserves on Washington's Birthday, 1897.

The Cleveland forest reserves awakened at once great opposition, and led to a general discussion of the forest policy. But after several years of controversy widespread approval took the place of opposition, and at present the value of the forest reserves is generally recognized.

The recommendations of the National Forest Commission for the management of the forest reserves were not acted upon by Congress, but the law of June 4, 1897, gave the Secretary of the Interior authority to protect the reserves and make them useful. The passage of this law was the first step toward a national forest service. The second step was the act of Congress, approved February 1, 1905, which transferred the control of the national forest reserves from the Department of the Interior to the Department of Agricluture. This act consolidated the Government's forest work, which had been divided between the General Land Office and the Bureau of Forestry, and secured for the reserves the supervision of trained foresters.

President McKinley and after him President Roosevelt continued to make forest reserves. The latter introduced a system of examining the proposed forest reserves, so that now their boundaries are better located than ever before. Un-

(Continued on Page 716.)

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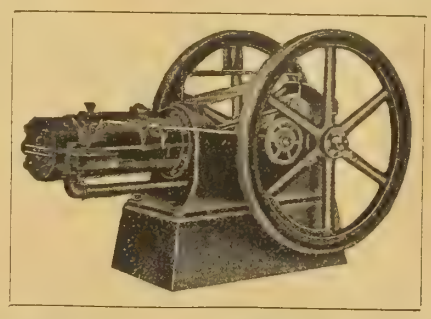

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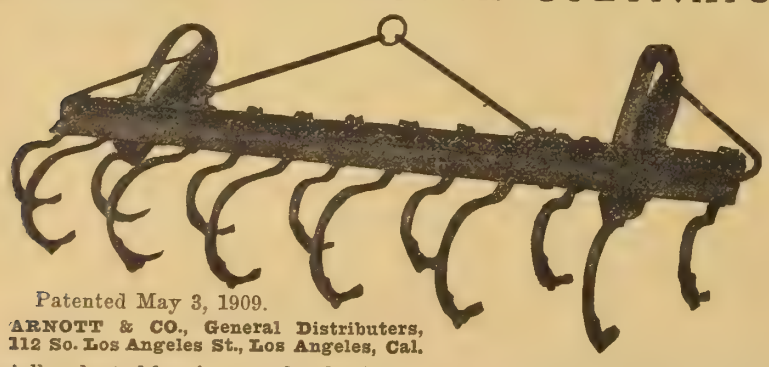

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With the Citrus Growers

SOME DISEASES OF THE CITRUS.

FROM the Report of the Florida Experiment Station we note the following regarding citrus diseases :

Smoky Fungus.

The smoky appearance of the orange caused by this fungus is not to be confused with the blackening due to the sooty mold which accompanies the whitefly. The smoky fungus causes no noticeable injury to the fruit itself. It does, however, mask the bright color of the fruit by a layer of dark-colored, mycelial threads, which spread over the surface of the rind. It may be rubbed off with the fingers, and so is attributed by some growers to the accumulation of dust particles from the air. It is most apt to occur in moist groves, late in the fall, and on oranges that have remained on the tree after they are ripe. The selling quality of the fruit is naturally somewhat impaired by the presence of this fungus.

Remedies.

The smokiness may be readily removed from the fruit by putting it through a washer like those used for freeing fruit from the sooty mold fungus. (2) In the course of our investigations on the scaly bark disease it was noticed incidentally that Bordeaux mixture was effective in preventing the appearance of the smoky fungus, if applied at the proper time of the year. One spraying about the first of October kept off the smoky fungus and did not cause sufficient increase in scale insects to injure the appearance of the fruit. Two or three sprayings, however, during the summer, caused such an increase in the number of scale insects as to materially injure the fruit, leaves and small branches. This increase in scale insects was due to the Bordeaux mixture having killed the fungi that were parasitic upon them, thus giving them immunity from their fungus enemies. When spraying to prevent attacks of smoky fungus it may be suggested that the solution should be applied, as far as possible, only to the fruit. The spray should be kept away from the larger limbs and the trunk, where the beneficial fungi are usually located in considerable abundance. A weak solution, consisting of 3 pounds of quicklime, and 3 pounds of copper sulphate to 50 gallons of water may be used. (See Bul. 76, Fla. Agr. Exp. Sta.)

Withertip.

This disease has been quite severe on citrus trees in some parts of the state. Last November it occurred in a number of groves near DeLand, causing much damage. It killed back twigs and limbs even in otherwise healthy and well-kept groves. It was noticed, in some cases, that the damage done by withertip became evident after several weeks of dry weather following a period of moist weather. It was also noticed that in a neighborhood where groves were close together, the disease would frequently be severe in one grove, while at the same time a neighboring grove would remain free from it. Within the same grove also there were individual trees and individual limbs of a tree that were attacked, while other trees of the grove and other limbs of the diseased tree remained uninjured. The difference in the action of the fungus toward different limbs of the same tree is probably due to a difference in the vitality of the individual limbs. Any cause rendering a branch somewhat weak, such as a previous heavy load of fruit, would most probably render that branch susceptible to an attack of the fungus. The same would doubtless be true in regard to the susceptibility or immunity to the disease of the different trees in a grove. Cases occur that can be accounted for by considering trees as individuals, each slightly different from the other. One tree apparently just as healthy as another is, for some cause not yet understood, less resistant to this particular disease, and is therefore attacked, while the tree next to it may remain uninjured.

Treatment.

(1) In all cases where it is possible, the diseased limbs should be pruned out. This should be done by cutting across the limbs some distance below the diseased part. The limb will usually be affected for some space below any visible injury, and care should be taken to cut far enough back into what appears to be healthy tissue to get out all of the wood into which the fungus has entered.

(2) Where the disease appears only on the fruit and leaves, Bordeaux mixture has been found to be an effective check on its spread. The use of Bordeaux mixture should be avoided, however, unless the disease becomes very severe. The objection against the use of this fungicide is that it allows an increase of scale insects by killing off the fungi that are parasitic upon them. Whenever it becomes necessary to resort to Bordeaux mixture for the cure of this disease, it should be applied as far as possible only to the diseased fruit and leaves, so as to avoid killing the beneficial fungi on the larger limbs and trunk.

Gumming.

The gumming disease of citrus trees continued to do much damage during the past year. The gumming areas are usually on the trunk and larger limbs at a considerable distance from the foot of the tree. This point of difference, as was mentioned in last year's report, distinguishes the disease from foot-rot. An effective remedy for this disease has not yet been found. Cutting out the affected areas and treating the wounds with carbolineum or other disinfectant is recommended by some growers.

Scab.

This disease was reported from several localities as occurring on grapefruit and lemons. It causes the leaves to become contorted and curled, with the production of wart-like elevations, or raised scabby areas of irregular size and shape. It is almost always to be found on sour orange and lemon trees in every citrus-growing section of the state. Only in the early part of the year, when conditions of moisture and growth become favorable, does it break out upon the grapefruit, Satsuma, and in rare instances, upon the sweet orange.

Treatment.

Sometimes the disease breaks out

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Perris, Riverside county has new harvesting outfits already at work on the big grain crop.

early in the year, on quite young leaves and fruit, in a very severe form. The only known preventive of its spread is Bordeaux mixture, applied early in the year. The same care should be used in applying the Bordeaux so as to avoid killing the beneficial fungi, as when spraying to cure withertip.

SOIL TEXTURE.

A horse blanket is coarser than a baby's undershirt, and a gunny sack coarser than a silk handkerchief because of the difference in texture, not only of material but method of weaving.

One soil is fine grained and readily packs, while another is fine grained and will not pack. On the other hand one soil is coarse and lumpy and another is coarse but not lumpy. It is all due to a difference in texture.

Suppose you have a farm that is a heavy clay. The plow may or may not scour, but the furrow rolls up in great clods of packed soil instead of crumbling as it falls from the mold-board. That soil has a fine grain and the grains adhere. Just the thing for making mud pies—or maybe brick or tile. In order to plow such land and get a decent seedbed without excessive work you have to wait until very late in the spring before plowing. It does fairly well then but not as it should.

Plants get their water—and the mineral elements dissolved in the water—from the soil by means of root-hairs, and these only. These root-hairs are very delicate and it is readily seen that they cannot penetrate a clay ball wet or dry. They work their way in between the soil grains and absorb the thin filaments of water surrounding each grain.

Soil texture is of great importance in aiding or hindering plant feeding. It is folly to begin plowing so early that the soil turns up lumpy. It presses the soil grains closely together and they stick. It may take all summer or even a year to disintegrate these lumps again so the plant food becomes available.

Just a day or so delay often makes a field dry enough to plow right. But delay is often a great set-back to farm operations. If a soil is inclined to be heavy it needs something that will change its texture. An application of lime causes a heavy soil to become more crumbly because it prevents packing.

When a soil gets deficient in humus —dead plant matter—it becomes sticky and heavy. To restore such soils to proper texture humus must be added. This can be done by growing the legumes, for they have a great root system that penetrates deeply. The decayed roots benefit the texture of the soil. Plowing under stubble and cornstalks, weeds, etc., instead of burning manure does the same thing. All these assist good tillage in restoring a wornout soil to its proper texture. Crop rotation is imperative.—Successful Farming.

ADVERTISING ORANGES.

Speaking of advertising oranges the Riverside Press refers to one company which has a method of its own as follows:

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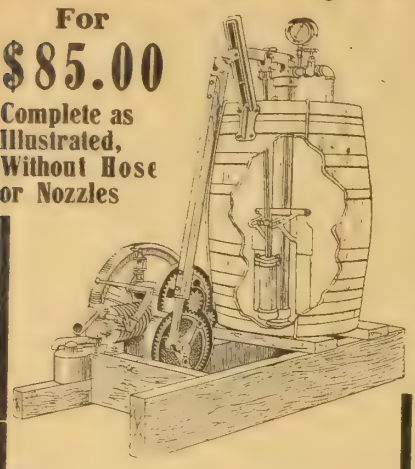

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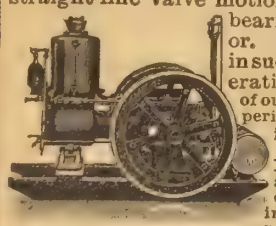

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Deciduous Fruit Culture

By J. W. Mills

APPLES.

THE state of maturity at which apples can best be picked depends upon the varieties and the purposes for which they are intended. Summer varieties, for home use or for the local market, need not be gathered until fully ripe. Fall and winter fruit, intended for the same use, may be allowed to fully ripen, but should be picked before the mellowing process begins. Summer, fall and winter varieties, for long-distance shipment or for storage, should be gathered as soon as fully grown and colored. The best time for harvesting each variety can only be determined by experience. Successful growers study their own local conditions and observe the experience of others having similar environments.

In gathering apples, either for market, storage or home purposes, it is necessary to remove the fruit from the tree with a great amount of care. This work should always be done by hand, and not in the careless, wholesale way of shaking, beating or knocking the specimens off with clubs or poles. This latter method invariably results in bruising and snagging the fruit, thereby damaging its keeping qualities and destroying its general attractiveness. Growers need not expect profitable prices for their apples if treated in this manner. Each specimen should be firmly grasped in the hand and, with a slight twist, the stem separated from the twig or branch. The stems should remain in the fruit. Their removal leaves an opening in the flesh of the fruit, in which decay is apt to develop. As each apple is removed, it is placed in either a basket or sack, arranged to suit the convenience of the picker. The inside is frequently padded to lessen the liability of bruising. A piece of iron rod bent in the shape of the letter S makes a good hook with which to suspend the basket from either a limb or the rung of a ladder while picking. A convenient way to use a sack is to put a small stone or piece of corncob in one corner of the bottom and tie a rope or strap around this; then, in the same way, tie one side of the mouth of the sack with the other end of the rope or strap, thus making the sack into a loop, that can be thrown around the neck and suspended from the shoulder of the picker. The mouth of the sack is brought to the front and is held open by means of a stout, bent wire placed under the hem. The fruit is picked either from the ground or from stepladders, or other light ladders that can be carefully laid against the limbs or branches of the trees. Ladders should not be thrown on or against the limbs, as this damages both the fruit and the tree. With low-headed trees, a large percentage of the fruit can be harvested from the ground, thus saving not only time but labor.

Apples can be graded and packed at the same time. This may be done either in the orchard or the packing shed, or the storage house, as best suits the convenience of the grower. The main point to be observed is to handle the fruit carefully. Apples are usually divided or sorted into three grades, "firsts," "seconds" and "culls." First-grade specimens must be uniform in color, size and degree of ripeness. They should also be entirely free from insect injuries, the marks of disease, bruises, or any other defacements or blemishes. When fruits answering these requirements are well packed in suitable packages and placed on sale they never have to go begging for a purchaser. Second-grade fruit should also have a certain degree of uniformity regarding size, color and ripeness, and should not be noticeably marked by insect or fungous injury, nor by bruises or other blemishes. Fruits of this grade, when carefully packed, often sell for a good price. "Culls" are those specimens that fail to answer all the requirements of either of the other two grades. Unless there is an unusually strong demand on the market, fruit of this kind had best be kept at home. "Culls" or inferior apples, when mixed with good specimens, damage and almost always ruin the sale of the fruit.

Next to grading, the packing of apples is the most important operation connected with their production and sale. Within recent years, the more progressive growers have been packing their choice, fancy grade apples in boxes. The average uniform box contains approximately one bushel. The fruit is wrapped in attractively labeled paper and packed in layers. During the past season, No. 1 New York State apples sold at $4 per barrel. "Fancy" grade stock of the same variety at the same time brought $4 per box. Most of the apples from the western states are placed on the eastern markets in boxes.—B. S. Shaw of North Carolina Dept. of Agriculture.

NUT PASTES AND NUT PRESERVES.

Pastes which are used by confectioners for candy making and in other ways are made from nuts with the addition of sugar. Sometimes water and starch are added, but such admixtures are inferior to the nut and sugar pastes. The most common material of this sort is the almond paste, which is manufactured in large quantities in the United States and is also imported. It is used for making cakes, candies, etc., the highly ornamented cakes called "marzipan," so popular with the Germans, being one of the very well-known almond-paste confections.

Macaroons are also well-known cakes made from ground almonds or almond paste. Cocoanut is also used for the same sort of cakes.

Chestnuts preserved or candied in sirup and then dried, the marrons glace of the confectioners, are esteemed a delicacy and are eaten alone or are used in confectionery, etc. Thus prepared they are a common commercial article. Much less common are the English walnut meats preserved in sirup, which are manufactured in Europe and exported to this country in limited quantities. Preserved nuts which are similar to these are made in this country, particularly for the soda-water trade. Often maple sirup is used instead of ordinary sirup. Nut sirups, in which the ground nuts are incorporated with the sirup, are also well known for the same purpose, and are quite similar to the nut bisques or similar

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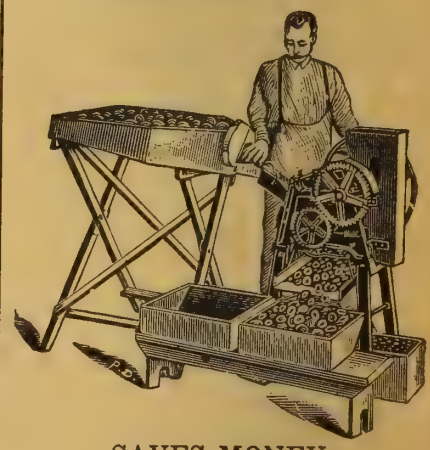

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pudding sauces made at home, and all such nut preserves are rich in carbohydrates, owing to the added sugar. In Germany walnut meats and spice are often added to the plum butter which is made in such quantities in many homes. In the Tropics a thick, sweet preserve is made from cocoanut and sugar which is much liked locally, though those who are not familiar with it consider it very sweet and insipid. The Turks make several products from walnut meats and grape juice which are considered wholesome and palatable foods. In one of these the nuts are strung on a strong thread and dipped in thickened grape juice until well coated with it.

A VALUABLE FOOD.

Nuts are a very concentrated food, even more so than cheese, but when rationally used they are well assimilated and may form a part of a well-balanced diet. Nuts are a very valuable source of protein and fat, these two nutrients being the characteristic constituents of the more common nuts, of which the walnut and cocoanut may be taken as types. In nuts like the chestnut, carbohydrates are a characteristic constituent. For most families it is undoubtedly wiser to use nuts as part of the regular diet than as a condiment or supplement to an otherwise hearty meal.

Vegetarians and others who use nuts in place of meat should not depend upon them as the main food supply, but should supplement them with more bulky foods with a low content of protein and fat. As a whole, nuts may be classed among the staple foods and not simply as food accessories. At usual prices, nuts are reasonable sources of protein and energy. Peanuts supply protein and energy very cheaply, even compared with such staple foods as bread and beans. There are a number of nut foods on the market, but it may be stated that there is little to be gained from the standpoint of food value or economy in their use in place of the ordinary nuts and home-made nut products, especially by healthy persons who are willing to masticate their food thoroughly and to use nuts in reasonable combinations Unless something has been added, the nutritive materials in such special preparations can not be greater than the nuts from which they are made, though in the mechanical condition or in some other way the foods may be better fitted for ready assimilation. Furthermore, nut butters and similar foods give a pleasant variety to the diet, and they are relished by many who would not care for the unprepared nuts.

Though less subject to contamination than many other foods, nuts should be handled and stored under good conditions, and especially should be protected from dampness and insect enemies.—Prof. M. E. Jaffa.

Local Union at Selma is arranging for a packing house to handle the coming season's output of dried fruit. It is expected that the start on shipping green grapes will be made in Fresno about the fifteenth of July. It is thought the output will be nearly 1500 cars or nearly twice that of last year.

Fruit growers of British Columbia have been troubled with curl leaf and other diseases which have been caused by the cold late spring, so that they will be compelled to suffer great loss on this year's output.

UNFERMENTED GRAPE JUICE.

UNFERMENTED grape juice has no doubt been used ever since wine has been made from the grape, declares an exchange. The industry of manufacturing unfermented grape juice on an extensive scale for a general market is, however, as yet in its infancy. The Greeks had two kinds of wines, the protoplon, or first juice of the grape before pressing, and the denterion, or pressed juice. The Romans called them vinum promarium and vinum secondarium. Some of them drank the juice before fermentation had started and called it mustum; after the must had been through a heating process they called it frutum, and when after a long heating it had been reduced to one-third, or one-half its original volume, they called it sapa. This was used by the Romans on their bread and was the equivalent of what we now call syrup.

In Europe physicians often send their patients to the wine growing districts, during the vintage time, to take daily rations of must as it comes from the crusher. This, however, restricts its use to only one season in the year, and to the immediate vicinity of wine districts, or to individuals strong enough to make the journey. Of late years extended efforts have been made to keep the must unfermented and to put it up in such shape that it can be used anywhere and at all times of the year.

Until recently its use has been almost exclusively restricted to medicinal purposes. It is well known that pure must is healthful and nutritious. Grapes contain from 15 to 35 per cent sugar; about 2 to 3 per cent of nitrogenous substances, and some tartaric and malic acids. The skins contain tannin, cream of tartar and coloring matter. The seeds contain tannin, starchy matter and fat. The stems contain tannin, divers acids and mucilaginous matter. The comparative composition of the different parts of the fruit determines the value of must made from the fruit.

The uses of unfermented grape juice are many. It is used in sickness, convalescence and good health; as a preventive, restorative and cure; by the young, persons in the prime of life, and by those in old age; for sacramental purposes and at soda fountains; and in the home as a beverage, as a dessert and many other ways.—Exchange.

JAPANESE PERSIMMON.

The Japanese persimmon is now widely cultivated to a greater or less extent throughout most of the Southern United States and in parts of California. In the Southern States the area adapted to its culture corresponds in a certain measure with the cotton belt. It cannot be grown successfully north of Washington, although it has been fruited in New Jersey, and the northern limit of profitable culture is considerably south of the District of Columbia. The leading states are California, Tennessee and the Gulf States. In Texas there are several large orchards, but so far as known to the writers, the largest single orchard in the country is that owned by Mr. William Macklin of Dinsmore, Fla., who has between two and three thousand trees. Florida probably has the largest acreage of any state in the Union, but the total acreage has not yet been definitely ascertained.

The best soil for the Japanese persimmon is one of rather open texture containing a fair amount of humus and having good drainage. Regarding the soil conditions in Japan, the Japan Agricultural Society makes this statement: "The soil most adapted to the plantation of the Kaki is the gravelly clay loam in a situation neither too dry nor too damp. A free open space is necessary.

Distances.

The Japan persimmon may be divided into two groups, based upon the habit of the growth of the trees. Some varieties, Costata for instance, are strict and upright in habit, and consequently require less space than varieties of more or less spreading habit like Triumph and Hachiya. However, this difference in habit of growth need hardly be taken into consideration in discussing the question of distances. As a general thing, 15 to 20 feet distance will be about right.

How few persons consider, as they hold a luscious bunch of grapes in their hands, the amount of patience and expense it may have cost the producer to obtain the original vine. Thousands upon thousands of hybridized vines have gone into the flames as unworthy, and all this waste only adds to the labor and cost of those to be saved. Yet this selfish world cares little who has done this great labor to attain the end, if the fruit be but good. And consequently, there being but fame for compensation, only an enthusiastic student will continue in the work and grow old in the harness with ever renewing ardor as his experiences grow and theories expand.

The Brookings Lumber Co., having large holdings near Fredalba, San Bernardino county, is planning for extensive reforestration by planting large nurseries. Amongst the varieties of forest trees which will be tried, are, ash, hickory, silver maple, poplar, walnut, dog-wood and locust.

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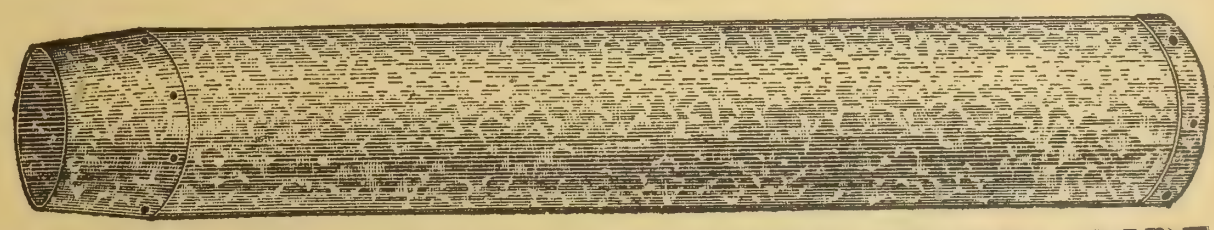

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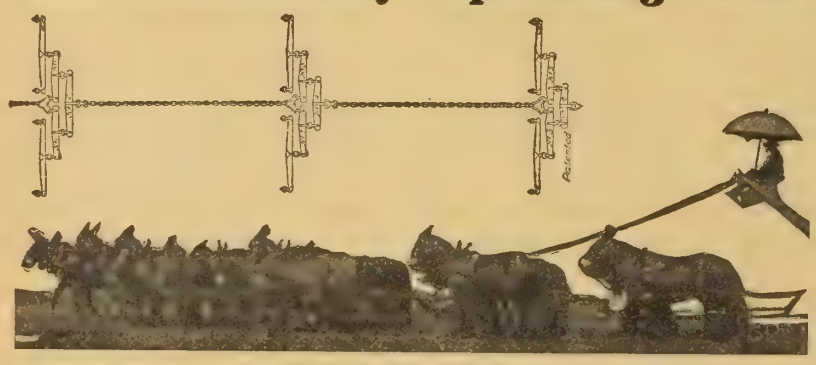

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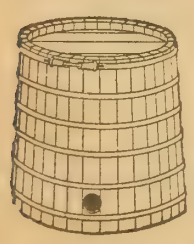

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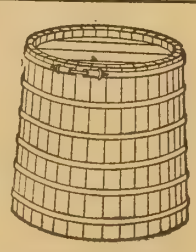

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LIFE HISTORY OF THE CATTLE TICK.

An intimate knowledge of the life history of the cattle tick is necessary to those who have the pest to contend with in order that they may wage their battle more intelligently and at the same time secure better and greater results. A knowledge of the manner in which the tick propagates can not fail to be of value in the war of extermination now being carried on against it in the South.

Only a part of the development of the tick takes place on the host (animal), while the remainder occurs in the pasture. The female tick, which is attached to the skin of the host, increases enormously in size as a result of drawing liberal quantities of blood, and when fully engorged drops to the ground, where she at once begins to search for a suitable hiding place that will serve as a protection from the sun and enemies. The female ticks may be devoured by birds, destroyed by ants, or may perish as the result of unfavorable conditions, such as, for example, low temperature, lack of moisture, etc., so that many may be destroyed without having laid any eggs.

Egg-laying begins during the spring, summer, and fall months in 2 to 20 days and during the winter months in 13 to 98 days. The eggs are small, elliptical-shaped bodies, of a light amber color that later changes to dark brown, one-fiftieth of an inch in length, coated with a sticky secretion that causes them to adhere in clusters and keeps them from drying out. During egg-laying the tick gradually shrinks to about one-third or one-fourth her former size. The egg-laying period continues for from four days in the summer to 151 days beginning in the fall, and during this period from several hundred to 5,000 eggs may be deposited. The mother tick then dies within a few days.

In from 19 days (in summer) to 188 days (in fall or winter) after the eggs have been deposited they begin to hatch. From each one issues a small, oval, six-legged seed tick, at first amber colored, later changing to a rich brown. After crawling slowly about the shell it usually remains quiescent for several days; then it displays great activity, especially if the weather is warm, and ascends the nearest bit of vegetation, such as grass, herbs, or shrubs.

Since each female lays her eggs at one spot, thousands of newly hatched ticks or larvae will appear at the same place and later will ascend nearby grass stems and collect on the blades. This accounts for the brown masses of larvae observed clinging to vegetation in pastures or on fence posts. This upward instinct of the ticks increases their chances of reaching a host, for when the vegetation is disturbed they become very active, extending their long legs violently upward in an attempt to seize hold of a host.

During its life in the pasture the seed tick takes no food and hence does not increase in size, and unless it reaches a host it dies of starvation. This fact is significant and is taken advantage of in the work of exterminating the ticks. Their endurance, however, is very great, and under certain conditions they have been found to live without nourishment nearly eight months during the colder part of the year.

The length of the period from the time females drop until all the seed ticks hatching from the eggs laid by them are dead, or in other words, the time required for pastures to become free of ticks after all cattle, horses, and mules have been excluded, varies with the season of the year, being shortest during the warm part of the year and longest during the cold part of the year. For example, all the seed ticks resulting from females dropped June 15 will be dead by November 1, a period of four and one-half months; but some of those resulting from females dropped September 1, may survive until the following July, a period of ten months.

Another phase of development begins when the tick reaches a favorable host, such as a cow. It usually attaches itself to the skin of the escutcheon, the inside of the thighs and flanks, or to the dewlap. It at once begins to draw blood and increase in size. In a few days it changes from brown to white. In from 5 to 12 days it sheds its skin, the new form having eight instead of six legs and being known as a nymph. In another 5 to 11 days after the first molt the nymph sheds its skin and becomes sexually mature, and it is at this stage that males and females are conspicuous for the first time. The male emerges as a brown oval tick about one-tenth of an inch in length. Having reached the full measure of his growth he displays greater activity in moving about on the host. The female is slightly larger but shows much less activity, seldom moving far from her point of attachment previous to molting. After mating she increases rapidly in size, and in 21 days (in hot weather) to 66 days (in cold weather) after attaching as a seed tick she becomes fully engorged and drops to the ground to repeat the cycle of development.

Publications containing full information about ticks and giving directions for getting rid of them may be obtained free on application to the Bureau of Animal Industry, Department of Agriculture, Washington, D. C.

BABY PIGS ON THE BOTTLE.

It often happens that a sow dies and that her pigs are left as orphans. In other cases a sow will have more pigs than she has teats, hence some of them are crowded out and soon perish of hunger. The proverbial "runt" is not necessarily so from inheritance, but from lack of nourishment. The pig that must "suck the hind teat" must of necessity live on less than his more favored brothers and sisters, and hence makes slow development. Once a runt, always a

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Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 225-227-229-231 East Sixth street, Los Angeles.

runt, is an invariable law of nature.

Many people seem wholly at loss when pigs are deprived of their mother. They believe that the little things can never be made to live, no matter what feed and care are given them. This is a mistaken notion. Little pigs can be raised as easily on the bottle, or milk in the pan, as can calves or as can young chicks in the brooder. The requirements are simple and easy.

In raising pigs by hand, place them in a warm box in a warm room, put plenty of hay or straw bedding in the box, and cover them up carefully at night so that they will not become chilled. Place the box near a stove in winter, but no artificial heat will be required in summer. They are not as tender as chicks, yet they must not become chilled for the first two or three days. During the day place their nest box where direct sunlight will shine in it, as all real young animals are very much benefited by sunshine.

Feeding young pigs is easy work and teaching them to eat is not at all difficult. For the first meal take the little porkers in your lap, one at a time, and pour a few drops of warm milk fresh from the cow down its throat with a teaspoon. In withdrawing, allow the spoon to touch the lips of the pig. This may seem a trivial point, but the second time it happens the young fellow will begin to think—perhaps—and will probably "sit up and take notice," for the best way to appeal to and win the confidence of a young animal, a child and some men is to feed them. It strikes a sympathetic and responsive chord in their natures that makes getting along with them easy, providing you keep up the feeding.

After the second feeding of the young pig with a spoon, place some warm milk in a very shallow pan or sauce dish and place its nose in the milk. The pig will suck the drops of milk from its lips, and by the next time its nose touches the milk it has learned to drink and the trouble is all over. It is not necessary to give the pig your finger. It simply learns to drink the milk, and that is the end of it. We have found that two or three lessons are sufficient.

When the pigs are about two weeks old a little cooked oatmeal or bread may be fed with the warm milk and the mixed feed increased as the pigs grow. After the pigs are two weeks old, find what they will eat and gradually give them a variety till they are ready to be turned out with the common herd.

Remember that one over feed is almost sure to result disastrously. Light feeds and often will bring success.—Journal of Agriculture.

EDUCATIONAL BUTTER SCORING CONTEST.

Interest in the butter contest seems to be growing, as more entries have been received this time than at any previous contest. The exact number is uncertain, as we have method-blanks for one or two entries that have not yet arrived. In general, the butter came in good condition and, with a few exceptions, was well packed. Several persist in sending entries in odd shape packages, when the size specified could as easily be made. Consequently their butter is at a disadvantage. One package that came is especially worthy of mention. The container was a second hand fish tub, simply washed out and lined with one layer of parchment paper. In view of the general appreciation that butter readily takes up strong odors that it comes in contact with, this incident is the more remarkable. To say that this entry was "fishy" expresses it mildly. We are glad to note greater care in filling out method blanks, as this is a great help in making criticisms.

Reference is made in this report to "whole-milk" creameries. As will be seen by the appended statement, only three whole-milk creameries appear and one of these receives some gathered-cream. The competition is really between gathered-cream creameries. The entry from one whole-milk plant had not been received at the time of preparing this report.

The quality of the butter, all lots considered, averages poorer than at the April contest, though several excellent entries were examined. The reasons for this dcline are obvious to all creamery men. The method blanks show, in some cases, that too high temperatures were used for churning and washing. Buttermakers must exercise their wits to devise means to hold the temperature down these warm months. Oily and old cream flavors were common in the lower scoring entries.

As concerns starters, there is encouragement. At least 17 out of 27 entries were made by their use. The amount varied from 8 per cent to 50 per cent, with an average of 16 per cent. The number of contestants employing starters in their work seems to be on the increase. The butter that scored highest was made from 32 per cent cream, one day old, ripened to 5 per cent acidity and cooled to 50 degrees F. Ten per cent of starter was used. The three highest scores went to butter made from cream ripened with starter. Those using artificial culture will do well to secure some for it from their nearest supply house. An order for a starter-can, if it is properly used, will go a long way toward improving the quality of future entries. Individual letters of criticism will be sent to each contestant. All California creamery men not already competing, who desire to enter the next contest, which will come in August, should address the undersigned in time to receive instructions.

The list of creameries scoring 90 or above, as placed by Mr. Mitchel and members of the dairy department, is as follows:

Name of Creamery.	Score.
Colusa Butter Co., Colusa	95
Castroville Creamery Co., Castro.	94½
Gridley Creamery, Gridley	94
Pozzi Creamery, Meridian	93½
Western Yolo Creamery, Winters	93½
University Farm C. (not comp.)	93
San Pasqual Creamery, Escondido	93
Homest'd C. Co., Nicaso (wh.-milk)	93
Elite Creamery, Nicaso (wh.-milk)	92¾
Edence Creamery, Petaluma	92¾
Tulare Co-op. Creamery, Tulare	92
Orland Creamery, Orland	92
Crystal Cream & Butter Co., Sacra.	92
Hicks Valley Creamery, Hicks V.	91¾
Salinas Creamery, Salinas	91½
Rose City Creamery, Chico	91½
Ceres Creamery, Ceres	91½
Suisun Creamery, Suisun	91½
Laton Co-op. Creamery, Laton	91½
United Creameries, Arcata	90½

—Herbert A. Hopper, University Farm.

Butter makers have been greatly pleased with the season's results, with a fairly large yield of exceptionally high class butter.

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The lower picture shows 52 disks used inside one of the many "bucket bowl" machines which disgusted farmers and their overworked wives are discarding for Tubulars. The maker attempts to sell it by saying it can be "washed as one piece." Tubular popularity has greatly decreased his sales, and he has commenced infringement suits against a catalog house and others who have been selling cheap separators, with disks like his, for a number of years.

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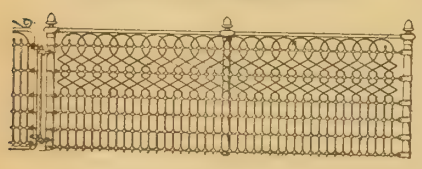

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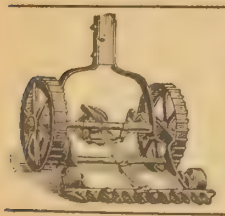

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Small Fruits and Vegetables

CALIFORNIA BERRIES.

HALF a million dollars is the estimate of revenue which the strawberries produced in the country within a few miles of Los Angeles will yield this season. The berries are now returning to their growers between $5000 and $7000 per day. The season will run three and one-half months.

From a few acres planted for commercial purposes about twelve years ago, the industry has grown to one of the largest of its kind in Southern California. There are about 2500 acres under strawberry cultivation. The largest area in any district is found at Gardena, where 900 acres are devoted to the raising of the delectable berry. Other large fields are under cultivation at Tropico, Glendale, Irwindale and Strawberry Park.

Until last year large shipments of berries to far distant cities was practically unknown. When the season opened last year and the canneries refused to take the berries grown an outlet of some sort was necessary, and one of the berry dealers struck upon the plan of shipping the fruit in car load lots. As a result about thirty cars of berries were sent out of this territory last year. About 60 cars will be shipped this season, shipments continuing until about August 1.

Up to the present, many carloads of strawberries have left Los Angeles this season. Some of them have gone as far as Chicago. When received there the fruit was reported to be in excellent condition and worth 10 cents a basket or about $1500 for a whole carload. Seattle has received several cars of Los Angeles berries this season, and they have all been shipped through in a good state of preservation. Other cars have gone to Spokane, Portland, Salt Lake City, Goldfield and the majority to San Francisco, which territory depends on Los Angeles for its berry supply.

These shipments do not nearly constitute the crop grown here. The receipts of berries on the public market every day average 4000 crates, from five to six carloads. In addition to this, the canneries of Southern California will consume a great portion of the crop. California Fruit Canners' Association has a standing order with the growers for 1000 tons of berries to be delivered within the next two months.—Exchange.

SORTING OVER THE STRAWBERRIES.

There are many fruit farms on which the strawberries are never sorted. They are picked into baskets in the field and at once placed in crates and are sent to the storage house for shipment for sale the next morning without further handling. On other fruit farms every quart of berries is turned out upon a table and sorted into two grades, the first consisting of the large perfect berries, the remainder consisting of the smaller and imperfect berries. While it may cost from one-half to one cent per box to do this sorting, it is in most markets found profitable, the large, first-class berries selling for an extra price when sorted, and the smaller berries finding a ready sale at a slightly reduced price. Whether or not it would pay you to sort your strawberries depends on your market. If your patrons do not appreciate the fancy fruit it would not pay to sort the berries.—Greens Fruit Grower.

HOW TO GROW SEA-KALE.

Sea-Kale is often spoken of as early asparagus because it is cooked and served in the same way, and has an asparagus-like flavor. The young shoots, which are very tender, require little cooking, about twenty minutes being sufficient, but care must be taken that the water does not stop boiling after the kale is dropped into the pot, otherwise the stalks will be tough.

After cooking, lift the kale from the pot, and serve either with or without toast and with drawn butter or Hollandaise sauce.

It must be eaten while hot, and while freshly cooked, as warming up simply ruins the quality.

I sow the seed in the ground about April 1st, sowing very thickly as it is large and soft and liable to rot, but as the seed is cheap you can afford to be liberal. One ounce of seed will give about 300 plants which if well grown would cost about $20.

The seed is slow to germinate, and the anxious gardener must not hoe the ground if it is not "up" as soon as the peas. The young plants, which closely resemble young cabbage, must be thinned as soon as they are well up in the row. This can safely be done when the plants are about four inches high.

During summer a rank, heavy growth is made, and by fall the very thick leaves of a glaucuos, succulent appearance will easily measure two feet from the crown.

Therefore, the plants must be given, while thinning, a foot of space each way. They will not then require any further attention until the fall, except for an occasional cultivation. I have never known sea-kale to be troubled with insects or disease of any kind.

In the fall the leaves will turn yellow and ripen, after which the roots may be left where they are forcing, or they may be left where they are grown. In the latter case they must be well covered.

The best plan to follow when the roots are to be forced is to lift them, strip off all the leaves and store in trenches covered with hay or leaves.

They must not be allowed to become dry, or they will lose their vitality; on the other hand if kept too moist, they will rot.

Give the roots a thorough soaking with water after planting. There must be enough moisture at all times to supply the growing plants.

Keep the eye or crown just above the surface when planting, because it will rot if buried.

To blanch, inverted flower pots must be immediately placed over the roots to keep them perfectly dark at all times, and it is best to cover the hole in the bottom of the pot.

The greater the darkness the better the shoots will blanch and the more blanched the better the quality on the table.

This sounds quite complicated, but, really, the operation is quite simple. Care is needed about moisture, to provide enough at all times, yet guarding against an over-supply.—Farm World.

Give growing beets clean and thorough cultivation, and thin the plants to stand four to six inches in the row. The thinning may be delayed in the home vegetable garden till the young beets are large enough to use, and thus the thinnings will not be wasted. In the truck garden the thinnings may be fed to cows, calves and pigs to good advantage.

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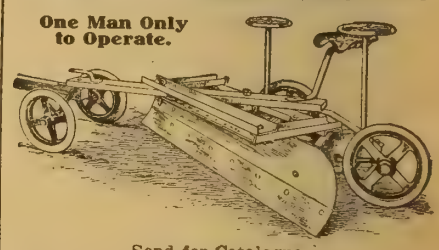

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Bees and Their Care

By Henry E. Horn, Riverside

HONEY.

When that cattle man of old, Abraham of Ur, was divinely commanded to leave his home and kinsfolk on the plains of Chaldaea and to seek a new home for himself elsewhere, he was given the promise that to him and his seed, sometime to become a great people, would be given the heritage of a goodly land; a land of hills and valleys, of brooks and rivers, a land growing the fig and the olive and the vine, "and"—as if to sum up all the pleasantness of it in just one term or two—"flowing with milk and honey." And afterwards, scattered throughout the chronicles of the fortunes and wanderings of that same man and his people there occurs time and again, the mentioning of honey, among other things, as the very ultimate of what was pleasant and delightful. Whether beekeeping as an art and industry ever developed above the primitive style now prevalent in Asia Minor after the Empire of the Jews had grown into all the splendor and glory of Solomon's reign, we have no evidence now. We only know that honey was still one among those exalted things acceptable as temple gifts.

And so in other countries.

Greece's honey of Hymettus was famous throughout the antique world. And sealed jars of honey have been found along with other precious things in the secret recesses of the temples of Egypt. And so on down the ages, honey and honey-delicacies always held a place among the things considered good and pleasant.

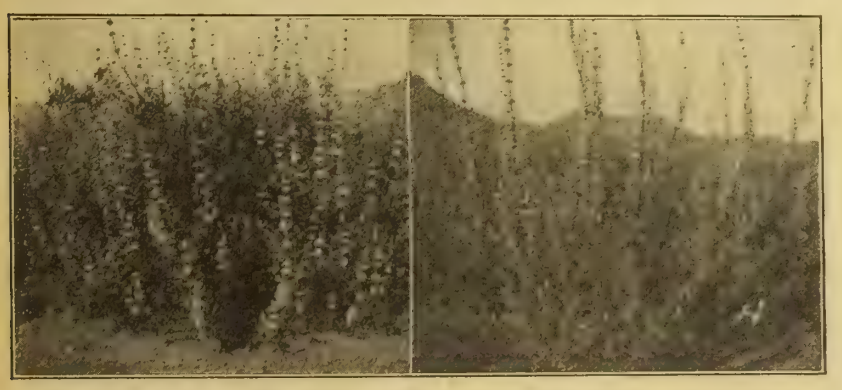
Of course, one of the reasons why honey was thus prized above rubies in all the past was that the art of extracting sugar from cane and beet was unknown then, and that, consequently, honey was the only concentrated sweet in existence But the main reason is another. There is a deep symbolism running through all nature. And the people of olden days understood this better than moderners do. To them flowers were sacred things, not so much because of their often marvelous beauty of color and form, but because of the image mirrored forth by them of a certain relationship, and although that relationship was even then, as now, often rudely profaned, the symbol was thereby not divested of its similitude to an ultimate form of it, expressed on its own plane. And as they hoped for a better age the divinely wrought perenial flower symbol was to them the sure promise of that age coming.

If a sage blossom be pulled off in the morning and squeezed between forefinger and thumb a pearly clear drop of liquid will come out, tasting sweet if touched to the tongue. That is nectar, the raw material of honey. All "herb yielding seed after its own kind" bears nectar, more or less. Those that swear by Huxley tell us that the nectar in the flowers is nothing but a cunningly offered bribe on their part to induce some winged insect to perform a certain office for them. In a fully opened five petaled orange flower the outer end of the pistil may be observed to be slightly hollowed out, and in the hollow a deposit of a creamy, sticky substance. If some pollen grains of orange happen to drop into that paste the blossom becomes fertile, and may eventually ripen into a luscious orange. If no pollen happens along the blossom drops off in a few days—a waste thing. This is particularly true of the Seedling. Lately, in Riverside, as previously in many other places, the honey bee has been outlawed—at least in a certain district. Because of some beekeepers' careless ways somebody got stung. The thing was unduly magnified, and people called out "Raus mit 'em," and 'raus' the harmless bee had to go. And now orange growers wonder why they don't get the masses of fruit any more that they used to in the past. The honey bees gather in a good season is of considerable commercial importance; but over against the other but less obvious service of fertilizing the vast stretches of field and orchard the former scarcely counts at all.

As a chemical compound honey consists of water, invert sugar, volatile oils, formic acid, pollen grains, and some other substances in minute quantities. As a food it stands alone in a class with milk and olive oil as carrying almost no waste. It is superior to milk and oil in requiring almost no digestion, it being absorbed into the blood as soon as it enters the stomach and is split up. Being a carbo-hydrate of concentrated efficacy it serves to produce that organic heat without which no life process can go on.

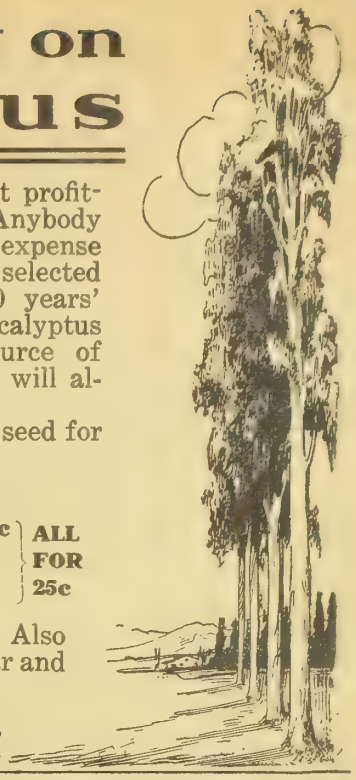
The making of honey seems a simple thing. A bee sips nectar out of a flower, goes back to the hive and pumps it out of its receptacle into a wax cell. But along with it there goes the secretion of some glands situated in the head. And it is the latter accomplishment of the honey bee that fools our industrious imitators from making honey by the vat full. Not an ounce of near-honey has ever yet been produced exactly alike to the hive product. No doubt modern chemistry can produce all the ingredients of honey synthetically, and mix them into a mass, but that would be no more honey than producing the ingredients of beefsteak in the same way would be beefsteak.

Of the half dozen distinctive varieties, the California sage honey is the most famous because of the finest quality. The honey made of the so-called "black" sage, of which picture No. 1 is an average sized bush in full bloom, is water white of color, simply delicious of flavor, and extra heavy of body. A gallon of it weighs fully 13 pounds instead of the usual 12. The "white" sage, so called for its silver white foliage—represented by photo No. 2—makes as good honey as the first, but its color is slightly amber. A five gallon can of either, known to be pure, is about as good a thing to keep in the larder as this material world affords. The orange bloom comes too early in the season to furnish much surplus for the market. Its honey is slightly amber-green, a bit scratchy, but a very good article. Buckwheat and alfalfa come amber to dark-amber, the latter a mite twangy, but a good staple.



Black Sage. White Sage.

Make Money on Eucalyptus



Growing eucalyptus is one of the most profitable industries in California today. Anybody can grow it without any culture or expense after the first year. Our seeds are selected and tested by our own expert of 20 years' local experience. A few acres of eucalyptus trees will produce an unfailing source of revenue to the owner, as the demand will always be greater than the supply.

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1 pkt. Rostrata (Red Gum) 10c
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ALL FOR 25c

We can supply seeds for all varieties. Also young trees for sale. Send for circular and our 144-page seed catalogue.

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SEED

Melon Seed Morris & Snow's Select Strains of Chilian, Red Seeded, Yellow Bellied and White Seeded. All of extra select stock. Some of our customers have made more money from one acre of these than from four acres of common stock as handled by others.

Casabas also. Improved Hybrid, Summer and Winter, all from select stock. Get our prices and make a trial. We also have a select strain of **Gautier's Pineapple.** All selected from perfect melons and not from leavings, as is customary among many. **Vegetable and Flower Seed** of select strains. Our "High Quality," "Full of Life" Seeds are winning for us wherever tried.

Eucalyptus All the Leading Varieties in seed @ 15c per package, (Six of the leading varieties, E. Rostrata, E. Leucoxylon, E. Rudis, E. Globulus, E. Corynocalyx, and E. Tereticornis for 50c, with cultural directions). 500,000 Plants. all varieties. State your wants and get prices.

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ALL KINDS on ALL PLANTS

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Machine Banded Stave Pipe Continuous Stave Pipe
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SALT LAKE CITY OFFICE—Dooly Block.
PORTLAND, OREGON—210 Wells, Fargo Bldg.
Prices, specifications, hydraulic data and general information furnished upon request.

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California Cultivator

ESTABLISHED 1889

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MRS. FRANK METCALF - - - - Poultry

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Contents

A MOUNTAIN LAKE IN KERN COUNTY, Cover.

FORESTRY IN THE UNITED STATES, 707.

CITRUS.—Some Diseases of Citrus Fruits; Soil Texture Advertising Oranges, 708, 709.

DECIDUOUS.—Apples; Nut Paste and Fruit Preserves; Valuable Food; Unfermented Grape Juice; Japanese Persimmon, 710, 711.

LIVE STOCK.—Life History of Cattle Tick; Baby Pigs on the Bottle; Educational Butter Scoring Contest, 712, 713.

VEGETABLE GARDEN.—California Berries; Sorting Strawberries; Growing Sea-kale, 714.

BEES.—Honey, 715.

EDITORIAL.—June Drop; National Apple Show; A Prosperous Year; Next Week; Development of the Jersey, 716.

AGRICULTURAL NOTES OF THE PACIFIC COAST.—Northern, Central, Southern, the Coast, 718, 719.

POULTRY.—Preserving Eggs; Gapes and Their Cure; Few Words About Cheap Poultry Houses; Egg Production of the Daughters of 200 Egg Hens, 718, 719.

QUERIES.—Fall Potatoes; Keeping Bulbs; Goes To Seed; Willow Baskets; Carbon Bisulphide at Roots of Trees; Summer Pruning; Bordeaux Mixture; Peanuts; Various Questions; Size of Fruit Boxes, 720, 721.

PRODUCE MARKET.—Los Angeles Markets; San Francisco Markets; Citrus Markets, 722, 723.

VETERINARY.—Fistula; Dry Hoofs; Itching; Hoofs Breaking; Fits; Abscess, 723.

HOUSEHOLD.—Home Tannery; Coming To a Decision; About THE HOUSE, 427, 425.

INDEX TO VOLUME XXXII., 726, 727.

JUNE DROP.

Orange growers always dread two months in the year. One is December with its possible cold and injury to the crop, and the other is June with its almost invariable hot two or three days which cause what has come to be known as the "June Drop." Usually the drop has been about right to thin the fruit so that the trees carry about their proper amount. Some years the drop has been excessive, but there has never been a total failure. This year the hot weather came in the last two days of May and the first day of June, two or three weeks earlier than usual, and following a spell of cool weather that left the trees in no condition to stand a hot wave.

The drop has been very severe. Some growers have maintained that everything was on the ground, while many others are hopeful that at least a fair crop will remain on the trees. A careful grower at Colton states that he has made a very close count, even counting oranges on limbs of many trees, and says that if every orange now remaining on the trees can stand the rest of June, there will even then be not more than ten per cent of a crop.

This all refers, of course, to navels as the drop does not seem to have affected the Valencias. We hope this fruit grower's judgment is at fault, and that no such severe loss will be visited upon the industry. No other section estimates so heavy a loss, though all unite in predicting that the crop will be exceedingly short. However after the big year just past, the trees will take a deserved rest, and the fine fruit which will be given, and the larger prices received on account of the shortage, will perhaps entirely make up for the loss.

In this connection it may be proper to refer to a remark we heard many years ago in a fruit growers' convention. A speaker was enlarging on the necessity of thinning fruit if good, marketable product is desired. He said, "My experience last year made me resolve that this year I would thin my fruit down so that what little I did have would be of good size. At my first thinning I took off twice as many as I felt should be taken. In a short time I saw that too many were left. Again I took off twice as many as I thought should come off and again I found too many left. This time I knocked them all off and still too many were left on the tree."

A fruit growers eyes are not always the best judges. There may be "too many" oranges yet. The middle of July will tell.

NATIONAL APPLE SHOW.

Spokane is making arrangements for its second annual national apple show which will be held December 6th to 11th. The success of last year's show was most gratifying to the Spokane people, and attracted attention to the apple industry in general and to the "Inland Empire" as an apple center, as no other method could have done. We doubt not it has helped to greatly increase the consumption of apples, and from the swing of the movement which has already been started for the coming show, we presume an equal uplift will be given to the industry this year.

We congratulate the people of Washington on having so enterprising and pushing a community, and again call the attention of our California producers to the fact that they are missing an opportunity which should be taken to boost California apples. There is no section in the state of Washington which can show actual results in apple culture as can a small section of California known as the Pajaro Valley. There are many other sections of this state which produce magnificent apples, but none in the quantity of the little valley in Monterey and Santa Cruz counties. In fact, that one little valley produces more apples than all sections of the state of Washington combined. Yet it has never awakened to the advantages and benefits which may be secured by extensive advertising. Of course the growers have, as a rule, considered apples a staple like wheat and potatoes, and have not deemed it necessary to advertise in order to dispose of it. This may be granted, but the fruit growers, and especially orange and raisin producers, have proved within the last year that a little tooting of their own horns is wonderfully profitable. Perhaps the Pajaro Valley people would not see the advantage in holding a "national" apple show, or even an "international" one, but some plan of gathering together could be devised which wo give an uplift to the industry of that section which would be most beneficial.

A PROSPEROUS YEAR.

The Summary of the June Crop Report is just received from the Department and it appears, as a whole, to show a good outlook for the summer of 1909. Some crops of course fall much below the average of last year, but these are very few in number. The per cent of winter wheat is 80.7 and of spring wheat 95.2 as against 86.0 and 95.0 last year. In alfalfa the increase is material over that of last year and still more pronounced over that of the preceding year. In fruits, peaches show materially a poor conditon. The average for ten years is 62.1 but last year's crop shows a percentage of 73 while this year's crop drops to 54.1. Pears also, the country over, show rather poor condition, 61.8 as compared with 70.9 of last year. Lima beans are normal crops with practically the same percentage as last year. Watermelons and cantaloupes are practically the same as last year. Sugar beets show a much better condition than either last year or the preceding year. Cotton is about the average.

NEXT WEEK.

The first page article of next week's issue will be of special interest to all growers of alfalfa. The article will be largely made up of personal experiences of practical producers of alfalfa in the various parts of our state. Some of the answers are very short; some are more at length. All are filled with information of value. They are published in the same form as were the articles on irrigation and plowing in a former special issues. The Cultivator believes in having the best there is to be had from practical men, and has found this method to be the best for obtaining that result. Our next issue will be well worth filing away to keep.

DEVELOPMENT OF THE JERSEY.

The power of intelligence over animal life and the capacity to improve it at will, is shown in the development of the Jersey to her wonderful producing capacity. Amongst the Jerseys of this country are now seventeen individuals which are producing in excess of 700 pounds of butter annually, while the record holder shows a total yearly production of 1126 pounds and 6 ounces. More than a half a ton of butter in 12 months from our cow! And yet farmers are sometimes content to produce 130 to 160 pounds per cow.

FORESTRY AT HOME.

(Continued from Page 707.)

der him great progress has been made by the Government in bringing about the practice of forestry by forest owners and in awakening the great lumber interests, as well as the people in general, to the dangers of forest destruction.

The forest reserves lie chiefly in high mountain regions. They are 62 in number, and cover an area (January 1, 1905) of 63,308,319 acres. They are useful first of all to protect the drainage basins of streams used for irrigation, and especially the watersheds of the great irrigation works which the Government is constructing under the reclamation law, which was passed in 1902. This is their most important use. Secondly, they supply grass and other forage for many thousands of grazing animals during the summer, when the lower ranges on the plains and deserts are barren and dry. Lastly, they furnish a permanent supply of wood for the use of settlers, miners, lumbermen, and other citizens. This is at present the least important use of the reserves, but it will be of great consequence hereafter. The best way for the Government to promote each of these three great uses is to protect the forest reserves from fire.

State Forestry.

Many of the States have taken great and effective interest in forestry. Among those which have made most progress are New York and Pennsylvania. New York has a state forest preserve of 1,436,686 acres, and Pennsylvania one of 700,000 acres. Michigan, Minnesota, and other States are rapidly following their example.

In 1892 the first example of systematic forestry in the United States was begun at Biltmore, in North Carolina. It is still in successful operation.

The first professional foresters in the United States were obliged to go abroad for their training, but in 1898 professional forest schools were established at Cornell University, in New York, and at Biltmore, in North Carolina, and they were followed by the Yale Forest School in 1900. Others have sprung up since. At present, thorough and efficient training in professional forestry can be had in the United States.

Shop Talk

ARID AGRICULTURE.—This is the title of a most valuable book for Western ranchers. Its 450 pages are full of practical, and at the same time, scientific, information for the care of semi-arid land. It is written so that the average reader can receive full benefit of the author's vast experience. In fact it seems that Prof. Buffum has covered the entire field by giving the best methods for the dry farm as well as how to succeed on the intensive, irrigated farm. The price is only $1.50 postpaid and the Cultivator recommends it highly. Orders will be placed promptly upon receipt of the price at this office.

Agricultural Notes of the Pacific Coast

Northern California

Colusa has a new alfalfa mill.

The cherry crop is practically all in.

Lodi's new winery is expected to start August 1st.

The Bidwell ranch at Chico has a thousand barrels of vinegar "ripening."

A couple of hop contracts were made by Santa Rosa growers at 12¼ cents.

Deciduous shipments are increasing, some days 40 cars passing Sacramento.

The recent cherry carnival at San Leandro was attended by large crowds.

One planter set over 600 acres of figs at Willows, Glenn county, this past season.

A large creamery company at San Francisco has opened a branch in Sacramento.

Fruit growers near Geyserville, Sonoma county, are planning to can their own fruits through a co-operative cannery.

Many forest fires occurred in McCloud this week during the strike of lumber workers.

The supervisors of Placer county have commenced suit to collect delinquent sheep licenses.

Orchardists at Auburn, Placer county, are organizing a co-operative fruit marketing company.

A Santa Rosa farmer has an exhibition in the Chamber of Commerce of cork grown on his ranch.

The annual cannery picnic at Gridley was attended by the usual immense crowd and was a success from all points.

A corporation has been formed under the name of the Rancho San Miguel Creamery which will manufacture butter at Oakland,

Over a thousand tons of hops and wheat were burned at the docks at Port Costa causing a loss of over a half million dollars.

A practical test made of the precooling plant at Newcastle has proved the big plant to be most satisfactory in operation.

Internal revenue officers are making it uncomfortable for handlers in San Francisco who are selling butter with too great content of water.

Word has been received at the state horticultural commission office in Sacramento of the serious illness of Entomologist George Compere in China.

A Sutter county cherry grower has a tree which for the past four years has averaged 604 pounds of fruit per year. This season's output was 816½ pounds.

It is reported that a large ranch near Biggs, Butte county, will be devoted to a goat and sheep dairy for the purpose of making cheese from the milk.

The farmers picnic recently held at Arcata, Humboldt county, was a great success, and was attended by many local people and others who came on special trains.

Three warehouses at Colusa have been merged under one ownership and will hereafter be controlled by the Farmers Storage Co. The combined storage capacity is 60,000 tons.

Central California

Sanger is to have a 320 acre ostrich farm.

Watsonville ships $1,500 worth of strawberries weekly.

Wasco onion growers have found much profit in onions this year.

A good roads meeting will be held at San Jose June 26th and 27th.

Eight cents has been offered for new crop dried apricots at Hanford.

Fresno county is having an experience in the trial of cattle rustlers.

An association of water melon growers has been formed at Turlock.

The hay and grain crop about Hollister is reported to be normal this year.

Bids for the construction of a high line canal will be opened at Turlock July 6th.

Merced county is considering the advisability of voting bonds for better roads.

Barley on the Empire Ranch Kings county, is said to run 30 to 40 sacks to the acre.

One nurseryman has just planted 15 bushels of sour orange seed at his ranch near Porterville.

The first car of green fruit from the Visalia district was made up of peaches, plums and oranges.

The Farmers' Union of Santa Clara county, recently held a picnic at Alum Rock Canyon near San Jose.

A movement is on foot at Visalia to control the flood waters which have in the past done much damage.

Vineland in Kern river county reports hot weather bringing fruit out much earlier than anticipated.

Cutting and drying of apricots is in full swing at Hanford, and most of the orchards are carrying a full crop.

An examination for the securing of eligibles for vacancies in the forest service was held at Fresno on Wednesday.

The board of supervisors of Monterey county passed an order ending the life of the board of horticultural commissioners.

Movement of real estate in the Valencia section, especially in the orange groves has been exceptionally active in the last few weeks.

The California Farmers Union and fruit growers at Smith Mountain are entering into a contract for the handling of the coming year's fruit.

Three carloads of Southern California orange trees were received last week in Tulare county, and all of them passed rigid examination.

Central California fair dates for this fall are as follows: Bakersfield, Sept. 6th to 12th. Tulare, Sept. 13th to 18th. Hanford, Sept. 20th to 25th.

The Kings County Agricultural Association makes a proposition to the board of supervisors of the county to purchase the grounds of the fair association.

A Colorado cantaloupe grower contracted with growers in Turlock to grow a large quantity of melons last year, supplying them with seed, which contract he afterward failed to carry out, and in addition commenced suit to secure price of seed supplied. The suit has been decided in favor of the Turlock people.

Southern California

Whittier is boasting over a golden calla lily.

Escondido's hay croy is much better than last year.

An orange grove recently sold at Azusa for $2000 an acre.

One apricot drying yard at Piru has 300 pitters at work.

The hot spell seriously injured onions in the Coachella Valley.

The hot winds seriously injured the potato crop of Escondido Valley.

A Redlands orange grower reports 1145 boxes from 229 four-year old Valencia trees.

Coachella claims the record for the first watermelons marketed in Los Angeles this year.

The cherry crop of Yucaipe, San Bernardino county, was exceptionally heavy and of fine quality.

The Union Sugar Co. of Betteravia, Santa Barbara county, is buying tracts of land near Lompoc.

The hot wind of the first of the month lessened the honey harvest materially in Ventura county.

The geological survey is taking steps to have more watering places on the Colorado and Mojave Desert.

A Ventura farmer calls us on the item regarding the six foot oats and maintains that he has oats eight feet high.

The annual meeting of the stockholders of the Mexican Cattle and Investment Co., was recently held at Santa Barbara.

The Ventura County lima bean growers are making an effort to have bean growers of the state join them in their marketing plan.

The San Bernardino horticultural commissioners have been active in keeping out shipments of citrus stock infested with red spider.

Lemon growers feel that the value of their industry will be greatly enhanced if the one and a half cent tariff on lemons is allowed.

During the recent high water along the Colorado river the constant occupation of many was watching the weak spots along the levee.

Imperial farmers are awaking to the fact that Johnson grass may prove a serious pest unless steps are taken immediately to control it.

The manager of the Uplands packing house is insisting that fruit be delivered to his house in better shape, and kept covered so as to be free from dust.

The committee appointed to devise plan of organizing a farmers' co-operative association at Calexico, Imperial county, reported favorably and an effort will be made to effect organization.

The board of directors of the Whittier Walnut Growers' Association elected the following officers: A. H. Dunlap, president; C. E. Cole, vice-president; S. W. Barton, secretary; Fred Hazzard, treasurer; E. Y. Partridge, manager.

The Saticoy Walnut Growers Association at its recent annual meeting elected the following officers and directors: J. M. Sharp, president; J. M. Dickinson, secretary; G. G. Crane, W. H. Layne, L. B. Hogue, T. A. Kelsey and H. F. Clark.

The Coast

Kendrick, Idaho, will ship fifteen cars of beans this year.

Milton, Oregon, recently observed Strawberry Day with great merry-making.

The sugar factory at Glendale, Arizona, started on the season's run June 16th.

Corn growers near Pullman, Wash., claim they are growing corn that beats Missouri.

The clip from 11,000 head of sheep brought $40,000 to one sheep raiser at La Crosse, Washington.

A twenty acre apple orchard near Garfield, Washington, netted its owner during the past year $10,000.

Five hundred students from the Oregon Agricultural College were guests at the Seattle Exposition.

The grain farms in the Nez Perce country, Idaho, are promising a fifty bushel per acre crop for this year.

Terrific rains and melting snows have been the cause of extraordinary floods on the headwaters of the Colorado river.

A corporation has been formed at Krupp, Washington, for the purpose of developing by irrigation a great quantity of dry land.

The beets being marketed at the Glendale factory in Arizona are rather small but very solid and with a high content of sugar.

Toledo, Lincoln county, Oregon, will hold a fair and festival principally devoted to the display of stock, on September 8th, 9th and 10th.

The next annual meeting of the American Association of Farmers' Institute Workers will be held at Portland, August 16th and 17th.

Farmers near Harrington, Washington, are holding this week their annual picnic lasting three days, at which horse racing and other outdoor sports are features.

The outlook for a record breaking crop on the farms of the Palouse country near Pullman, Washington, is better than in any former season for thirty-five years.

A farmer near Phoenix planted 200 acres to alfalfa, sowing thinly to barley as a nurse crop. He marketed 4000 sacks of grain besides getting a good stand of alfalfa.

A large tract of land was thrown open for entry at Phoenix on June 3rd, also another tract twenty-five miles southwest of Phoenix has received many settlers.

The state convention of the farmers union at Pullman, Wash., recently elected for its president, L. C. Crow of Palouse, and A. D. Cross of St. Andrews as secretary and treasurer.

The largest wool pool ever formed in western Oregon was recently formed at Corvallis where producers pooled over a hundred thousand pounds, but as the bids were not satisfactory, the pool was later broken up.

One sugar beet grower near Glendale, Arizona, has so many beets that the ordinary methods of hauling are entirely inadequate, so he makes up a train of ten wagons and hauls all in with one traction engine. The train hauls greater tonnage than could be loaded on an ordinary flat car.

FOR MOULTING HENS

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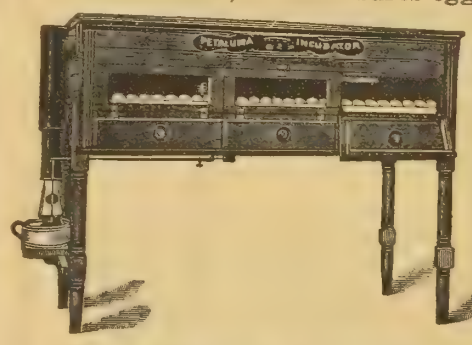
MIDLAND

Poultry Food No. 4

$1.95 per Sack

Midland moulting food is a balanced ration for the moulting hen and is absolutely the best food to feed for eggs and feathers. By feeding No. 4 now you bring your flock through the moult in good condition, which insures eggs when the market is high.



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Remember, we make a hot water machine. One of the ***best hot water machines*** on the market.

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Berrar & Robertson, San Jose, Cal.

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The best that grow

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Kill Insects

ON PLANTS **ON POULTRY**

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Devils Dust is guaranteed to Kill all kinds of vermin on poultry and insects on plant life.

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HENRY ALBERS CO., 534 SOUTH MAIN LOS ANGELES

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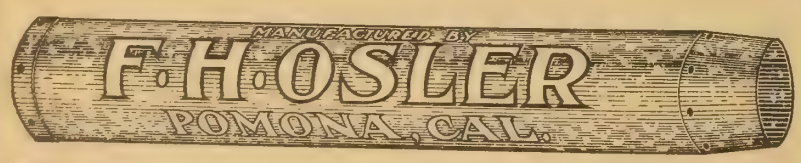

Made of a single sheet, 10 feet in length with heavy tapering end, and strong protector on large end. Made in all weights, by the latest improved machinery. The only way to irrigate alfalfa. Am Southern California Agent for Woodmanse Steel Windmill, complete line of repairs always in stock. Write for prices. **F. H. OSLER, Pomona, Cal.**

Mrs. C. D. Hubbard's

White Wyandottes

Black Orpingtons and White Rocks

Write for Circular

San Fernando, California

Profit in the Poultry Yard

By Mrs. Frank Metcalf

We solicit short articles of a practical nature from the fancier and utility breeder, giving their experience with poultry. All inquiries pertaining to feed, management, disease and its prevention will be answered through these columns.

PRESERVING EGGS.

Eggs to be stored should be, first, from hens that have no males running with them, because an infertile egg keeps longer, even without the use of a preservative, than a fertile egg; second, perfectly fresh, for not only will they keep much better, but if an egg which has begun to decay is placed in the same vessel with fresh ones, it is likely to affect all the surrounding eggs; and third, perfectly clean, for filth of any kind adhering to the shell will taint the preserving medium and thus taint the other eggs.

In placing eggs in the preservative, be careful not to crack the shells. Keep them in a moderately cool room where the temperature may be kept fairly constant. A dry, clean cellar is a suitable place.

Of the many methods which have been tried for preserving eggs on a small scale, none has proved more successful than the use of water-glass (sodium silicate). This is a very cheap product that can usually be procured at not exceeding 50 cents a gallon, and one gallon will make enough solution to preserve fifty dozen eggs, so that the cost of the material would not exceed 1 cent a dozen. Pure water, that has been boiled and then cooled should be used. To each 15 to 20 quarts of water, 1 quart of water-glass should be added. The solution should be prepared, placed in the jar or other suitable vessel, and the fresh eggs added from time to time until the jar is filled, but be sure that there is two inches of the solution covering the eggs. The eggs should not be washed before packing, for washing injures the keeping quality, probably by dissolving the mucilaginous coating.

A good lime-water preservative may be made as follows: 30 gallons of water, 10 pounds of salt, ½ bushel finely slaked lime. After mixing thoroughly, allow the solution to stand two or three days and then remove the clear liquid by dipping, or by means of a siphon. Place the liquid in a tub or other suitable receptacle and place the eggs therein, or the eggs may be placed in the vessel first and the lime water poured over them. Have about two inches above the eggs. Limed eggs can be discerned by the roughness of the shell.

Before boiling eggs which have been preserved in the foregoing ways, the shell should be punctured with a needle otherwise it is apt to crack as soon as placed in hot water, owing to the pores being closed.

Eggs can be preserved for several months in dry salt. Have at least two inches above the upper layer of eggs. Packing in bran has also been found satisfactory in many cases.

GAPES AND THE CURE.

Strictly speaking, gapes cannot be called a disease, since chicks that are so afflicted are in a physically perfect condition. The trouble is caused by a small red worm, or rather by a collection of such worms, which gather in the windpipes, and as they grow interfere with the breathing and cause the chicks to gasp and after a while strangle.

The worms are the larvae of eggs deposited in the filth of the yards or coops, and are hatched after being taken into the chick's throat.

They are, when full grown, about one inch long, and very much resemble a pale streak of blood.

Incubator chicks and those which run on clean grassy plots, away from the haunts of the older fowls, are never known to have gapes; while on the other hand, those which run in yards which are bare of grass, where fowls have been kept year after year, will almost invariably have gapes.

Just guard against the disease by observing a few simple rules, is the best advice. Keep all young chicks on clean ground away from the house, where old fowls have not trampled over it.

Sprinkle lime and carbolic acid over the yard, house and walks, and see that only fresh water and pure food are given the chicks.

If only a few chicks are affected they may be relieved by inserting a feather stripped to within an inch of the tip into the windpipe and turning it gently as it is withdrawn. The worms will adhere to the feathers, and thus give the relief sought.

Violent sneezing will dislodge the worms and give relief, and this may be produced by fumes of tobacco smoke or carbolic acid. If using tobacco, catch the chicks and put them in an ordinary bushel feed basket, with any kind of an old cloth thrown over it. Set the basket over a barrel with both heads out and place the tobacco on some live coals in the bottom.

Watch the chicks carefully, so that they do not smother, but let them remain until they become quite dizzy. The sneezing thus produced will give relief.

When using a feather hold the chick between the knees, with back toward you. Then, with the left forefinger and thumb, open the mouth, holding the neck well up.

The windpipe will be easy to reach with the feather, which you have previously arranged.

A small piece of camphor the size of a pea will often give relief, as will also an up and down pressure on the fore part of the neck.

When the first signs of gapes appear the chicks should be removed to coops as far distant as possible from the house and kept there until they have passed the danger age.

If they are taken to a place like that when first hatched there will never be a case of gapes among them. —American Farm World.

A FEW WORDS ABOUT CHEAP POULTRY HOUSES.

It frequently has been said that a hen regards not the rules of architectural beauty nor does she take any pride in having her house furnished forth with an array of ingeniously contrived fixtures of one kind or another. All a hen needs is comfort, and if she is supplied with food, water and a clean, light, dry house, free from draughts, she is in a position in

which she will fill her station in the scheme of the universe and perform her full duty.

The beginner need not be ashamed of a cheap poultry house. It is better to buy good stock and put it in a cheap poultry house than to save money on the purchase price of stock and use it in building an expensive house. When any one starts in to begin a new business the venture is always something of an experiment. If the beginner in poultry keeping builds elaborate poultry houses and makes a failure of the business, the houses are dead property, worth but a small fraction of their original cost, while good stock is always at par. For this reason comfort rather than elegance should be the rule in building the first poultry house.

The plainer the inside of a poultry house is, the better it is for all practical purposes. A plain box-like structure, the walls made of common lumber, well battened, and lined with tar paper, so as to make them wind proof is as good as walls of stone or brick would be. On the south side leave an opening three feet from top to bottom, the whole length of the building, covering this with heavy muslin and we have a cloth front house in which the matter of ventilation is solved, to which light is plentifully admitted and where dampness will have no place. In such a house colds and roup will not originate and properly fed hens will lay right through the winter.

Such a house, which will answer every purpose, can be built at an expense not to exceed 50 cents for each hen it shelters. A house of this kind 10x15 in size, contains 150 feet of floor space, which is ample room for 50 hens if they are allowed to run outside every day when the weather permits.

Very frequently second lumber may be secured and when this is covered with paper roofing it is as good as a house made of first class lumber would have been.

Much has been said about the piano box poultry house and we have seen many such houses which were made at low cost yet served their purpose admirably. Not long ago a beginner whom we visited apologized because his poultry houses were cheaply made. When we looked over the flock and noted the healthy appearance of the birds we concluded no apologies were needed and when we got the figures showing the productiveness of those hens we called to mind many flocks, kept in costly houses which never did as well.—Poultry.

EGG PRODUCTION OF THE DAUGHTERS OF "200-EGG" HENS.

There has just been issued by the Maine Experiment Station Bulletin 166, having the title "Data on the Inheritance of Fecundity Obtained from the Records of Egg Production of the Daughters of "200-egg Hens." This bulletin sets forth the results of an experiment designed to test the plain question of fact as to whether the daughters of "200-egg" hens were or were not better layers than the daughters of hens which were not such heavy producers. The results of the experiment were in brief as follows:

The daughters of "200-egg" hens were in this experiment very much inferior to their mothers in average egg production. This is particularly true of winter egg production.

This experiment gives no evidence that there is a sensible correlation between mother and daughter in respect to egg production, or that egg producing ability is sensibly inherited. A relatively high producing mother was as likely as not to have relatively poor producing daughters in this experiment.

In this experiment the daughters of "200-egg" hens were not such high egg producers as pullets whose mothers' egg records fell in the 150-200 egg class. The daughters of the "200-egg" hens were most inferior (proportionately) to the "unregistered" pullets in respect to winter egg production.

Pip is a symptom of a disease just as a furred tongue in a human being indicates a departure from normal health. The cause of pip may be bronchitis, impaction of the crop, or some internal inflammation; search for the cause and remove it. Smear the tongue with glycerine. It will soften the scaly matter; then remove it and smear again with glycerine. Give ten drops each of nux vomica and aconite to each one pint of drinking water until normal health is restored.—Poultry Tribune.

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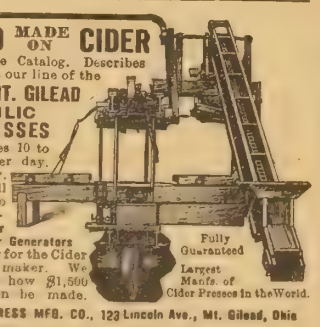

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Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Fall Potatoes.

When is the best time to plant potatoes for a fall crop in light sandy soil? The great question with me now with my spring crop of potatoes is shall I continue cultivating or not after they have set. As long as I cultivated they apparently made strong vigorous growth. I was advised that the cultivation was not necessary so long as I irrigated them. I have put the water on them every week but they do not seem to respond in growth as they should. Is the fault with the soil, lack of cultivation, or water?—Subscriber.

You can plant potatoes for fall crop any time from July 20th to August 10th. It is best to cultivate after irrigation. Few crops will do well if only irrigated. Without seeing the soil it is difficult to say just what is the trouble. Possibly the soil is very poor, and if so, no amount of water or cultivation will bring the best results. If the soil is in good condition regarding fertility, then I should think the chief fault lay in lack of cultivation.—Q. A. L.

Keeping Bulbs.

How should I keep Easter lily bulbs which have been in pots and have blossomed? Can I leave them, only withholding the water, or should they be taken from the dirt? When should they be planted to bloom at Easter? This year they did not bloom till June. What is a good fertilizer for greenhouse plants? How much should be applied?—F. B., Los Angeles.

It would be best to plant your lily bulbs out in the ground. The florists put strong well grown bulbs in pots in the fall and place the pots in a cool dark place for six or eight weeks where they form roots and get ready for growth when brought to the light and given proper temperature. At the proper date they are put into the greenhouse where they continue to grow and come into bloom at Easter. Before coming to California I grew large numbers of the lilies for the Easter trade, but have not done so here. Any of the Los Angeles florists who force them could give you the date at which they should be brought into the heat and light. Pulverized sheep manure is one of the best fertilizers for house plants. Use a small handful well dug into the soil about every three or four weeks. —Q. A. L.

Mr. Morris of Morris & Snow Seed Company tells us that it is impossible to secure Easter bloom in the open ground. The bulbs must be put in pots where a little heat may be given for the last month or two. The bulbs should be planted as early in August as possible.

Goes To Seed.

Why do most of my vegetables go to seed and become useless? This never happened to me before. My land is sandy loam, well manured and watered. My mammoth blackberry plants four years from the nursery, and which have heretofore borne heavily, have this year set practically no fruit, though treated the same as in the past, being well cultivated and manured. The ground this year is full of suckers. Should the plants be renewed? I wish to grow a hedge of the Italian cypress. When should I plant the seed to be ready for spring? Is there anything better for hedge in Monterey county? Can I plant hedge on line along road way, or will I have to set it entirely on my own land?—Easterner, Greenfield.

One reason for your vegetables going to seed would be that they were procured from poor stock. There are seed houses and seed houses—but you should buy from those which have been long known to be reliable.

As to your blackberries, it is difficult to say where the trouble lies. Your treatment seems to have been all right. Those suckers, however, must be destroyed and kept cut out. It is often a good plan to mulch heavily with stable manure, not cultivating but watering freely. A blackberry patch is good indefinitely if free from disease and in vigorous growth.

The cypress seed should be planted now, but unless you have had experience, don't attempt to grow them from the seed. The raising of evergreens from seed is difficult work requiring skill and special facilities. You will find it better to buy the young plants from professional nurserymen. Viburnun tinus, popularly known as Laurustinus, is a far better hedge plant. It bears pruning and shearing and is always beautiful. I know of no hedge plant that is its equal in Southern California. I know of no law that would prevent your setting the hedge on the lot line, but it might be wise to allow all of the hedge to be on your own property.—Q. A. L.

About The Willow Baskets.

Replying to the inquiry of B. J. O'M. in our issue of June 3rd, we have received suggestions from a subscriber that the best information on the making of baskets, which may be had outside of actual experience under a skilled instructor, is to be found in "Practical and Artistic Basketry" published by Kinsley, New York, 1904, and "Basket Designs of Indians of Northwestern California" by Kroeber, Berkeley, 1905. In addition to this suggestion, we have the following letter from a Japanese subscriber and well wisher of the Cultivator, located at Oakland.

In a certain district of Japan, making willow baskets is the principal work of the farmers and they cultivate the willow trees, but I am wondering if there is the willow tree specially fit to make baskets of in this country, as there are two species of willow trees and the common species of Salix multinervis can not be used for the purpose, but Salix Rubra Huda is the one specially used to make the baskets. However I will state a little how the trees are treated in the district of Japan.

1. These trees will grow well in fresh soil or sandy loam, but in a damp place they grow too big, so that they do not fit for the purposes. Of course they must be irrigated when it is too dry in mid-summer.

2. Plow the ground about eight inches deep in April and harrow. When the ground is ready cut the limbs one foot long and stick them in the furrows (20 inches wide) one foot apart leaving the tops two inches above the ground. This sticking limbs can be done in October again if the climate is not too cold.

3. When fresh leaves come out cultivate between the furrows. Pour extract of barnyard manure near the plants. Cultivate and manure again at twenty days after this. In the next April dig two or three inches deep near the plants and manure.

4. The limbs for the purpose must be straight and long. Therefore pick all sprouts off around the limbs, taking care not to strip off any bark with them.

5. After fifteenth day of April of the third year, cut the straight limbs with very sharp knife at half inch above the ground. Cut them again from twentieth day of August to September at one inch above the ground this time.

6. Make small bundles of them and lay them in the ground or damp place. Dip them in water and when sprouts come up five inches, strip off the bark as smoothly as possible with bamboo knife or two pieces of splinted bamboo. Wash them clean and dry them in sun.

7. Dry them in sun from 10 a.m. to 2 p.m., on one side, and to 4 p.m., the other side, for about three days. If stripped in a rainy time so they could not dry quickly, never get white limbs, but brown or red ones. After they are dried well wrap them with matting and keep them in dry place.

8. Sprinkle water over them when they will be used and use them quickly while they are wet yet. If they

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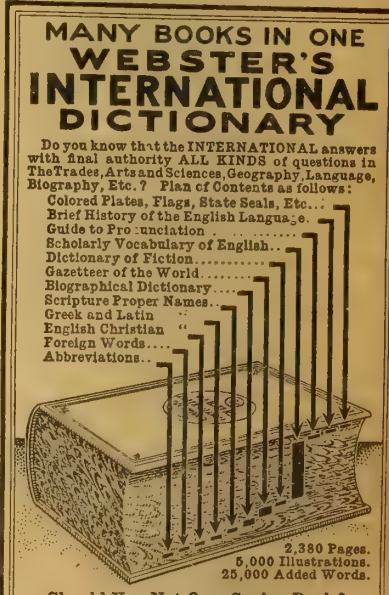

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are sprinkled and dried many times, the white color will be lost and the quality will be poor too.

9. Making willow baskets is just the same as making any other basket or matting.—K. Ikeda, Oakland.

Carbon Bisulphide at the Roots of Trees.

Will carbon bisulphide, when used adjacent to apricot trees to kill squirrels, applied by saturating a piece of cloth about the size of a walnut, throwing down a hole and covering hole, injure the tree in any way?—H. E. T., Santa Paula.

If the ground should be saturated with water and the hole closed perfectly tight, also close to tree, is is barely possible that some injury might result to the roots, but unless the bisulphide came in direct contact with the roots, we do not think any injury would be caused.

Summer Pruning.

What is your idea of pruning in May young apricot trees that were set out the previous February and which have a vigorous growth?—H. E. T., Santa Paula.

Thumb pruning by which sprouts are kept from growing where they are not desired or pinching back of strong growing limbs which are taking more than their share of the growth, are permissible during the growing season, but summer pruning, i. e., taking shears and pruning back any considerable amount of growth would be very objectionable. "Summer pruning for fruit and winter pruning for wood" is an old adage. What the grower wants of the young tree is wood growth. Encouraging the formation of fruit buds should be left until the tree has grown for three or more years. Hence in the young tree we should encourage in every possible way the formation of leaves, trimming as few as possible during the summers of the first two or three years. The winter pruning should then be very severe to encourage strong wood growth next summer.

Bordeaux Mixture.

Please tell me how to apply Bordeaux mixture? I have tomato plants which are infested with soft green and also striped worms.—G., Porterville.

Our subscriber, if he has written his letter as he means, does not seem to have a correct idea of the value of Bordeaux mixture. It is purely a fungicide, unless poison is mixed with it when applied. The formula for Bordeaux mixture may be seen in many of the back numbers of the Cultivator, or especially in the issue of March 12, 1908. This contains formulas for contact insecticides, poison insecticides, and fungicides. Our inquirer must bear in mind that there are insects which must be reached by contact poisons, that is, they get their subsistence by inserting a tube and sucking the juices of plants. All the poisons you wish to apply would never affect these insects in the least. Therefore they must be suffocated or killed by a spray of oily or caustic nature. The poison insecticides are used for an entirely different class of insects, those with jaws which eat of the leaves. Paris green or other arsenate poisons are sometimes used with fungicide sprays. Unless this is done, the one use of the fungicide spray is for the fungous troubles.

Peanuts.

What is the proper way to raise peanuts? Should the blossoms be covered and how much irrigation should be given to the plants?—E. F. L., Inglewood.

Information regarding culture of peanuts may best be had by referring to the California Cultivator of April 23rd, 1908. The blossoms are not usually covered, for if the soil is light sandy loam, which is about the only soil peanuts will do well in, the buds will attend to their own burying. Irrigation will depend upon the soil and cultivation. The article referred to names the middle of June as time for the first irrigation. Some growers produce good crops without any irrigation at all.

Various Questions.

Please give process of curing figs. What may I use for exterminating worms on cauliflower, cabbage and bean plants? I send sprig from a pear tree. Will you tell what ails it and give a remedy. The buds all blighted and I pinched them off and a few leaves came out, but now they are dying.—C. D. T., Buena Park.

Pick figs from tree so as to secure entire stem, but not until fruit is entirely ripe. Some growers allow the fruit to drop and then gather it from the ground. Place fruit on trays and expose to the sun. Do not allow to dry too hard, and when sufficiently cured put in sweat boxes for several days. When ready to pack away the fruit should be dipped in boiling salt water or, as some growers prefer, in a boiling thin syrup. This makes the fruit more handsome in appearance and more pliable, and at the same time destroys any insect eggs which may have been deposited on the fruit. Some prefer to sulphur the figs for from fifteen minutes to an hour before putting on drying trays. If the fruit is large, it will have to be turned to prevent souring. It should be turned several times during the process of drying.

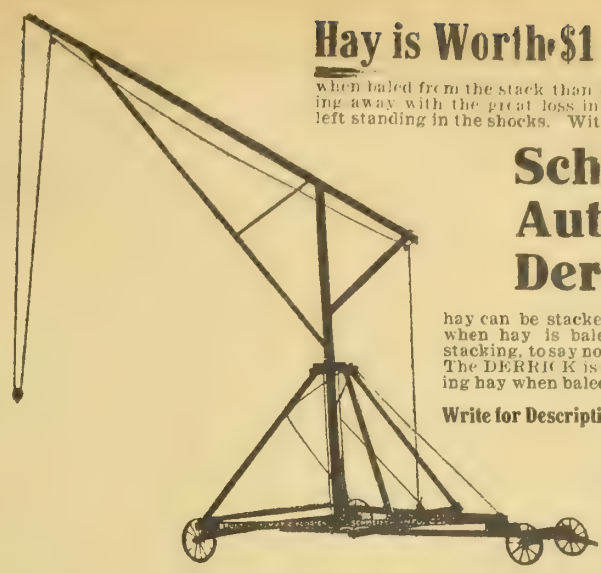
The worms may be destroyed by spraying with tobacco extract, kerosene emulsion, or whale oil soap. If the worms are leaf eaters, flour and Paris green may be sifted over the plants, which will dispose of them effectively, but care must be taken in handling the Paris green which is a deadly poison.

The sprig from the pear tree was insufficient to enable us to determine what the trouble might be, but from the letter we imagine this is simply a case of the regular pear blight which is devastating many orchards and causing much loss in the state. The method of handling is to simply cut off the diseased parts, using sterilized instruments, taking care to sterilize after each cutting. There is no spray which will reach this disease. If all pear growers in the same neighborhood would work together in this way, we doubt not the disease would be checked speedily. This remedy of cutting is according to the best information given to the pear growers by experts from the Department of Agriculture.

Size of Fruit Boxes.

What is the size of boxes referred to in article on thinning fruit in issue of May 20th by Mr. O. B. Whipple of the Colorado Agricultural College?—L. J. P., Orloff, Butte Co.

In response to this inquiry Mr. Whipple has furnished us with the following dimensions, inside measurements: Apple boxes, 11½x11½x18; pear boxes, 8½x11½x18; peach (extra grade) boxes, 4x11½x18; peach (fancy) boxes, 4½x11½x18; peach (choice) boxes, 5x11½x18.



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when baled from the stack than out of the shock, besides doing away with the great loss in weight which results when left standing in the shocks. With the

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hay can be stacked for 15c per ton, therefore when hay is baled 85c per ton is gained by stacking, to say nothing of the saving in weight. The DERRICK is worth its cost alone for loading hay when baled.

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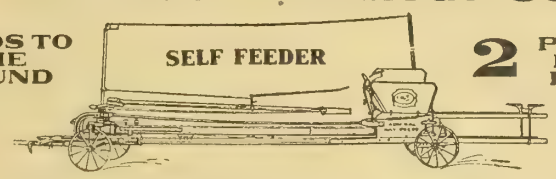
3 FEEDS TO THE ROUND — SELF FEEDER — **2** PROFITS IN HAY BALING



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For references as to what the Admiral is, "Ask anyone who has one."

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SALT LAKE ROUTE

San Francisco and Los Angeles Produce Markets

Los Angeles Markets

LOS ANGELES, June 23, 1909.

Butter.

Butter remains at last week's quotation with featureless market.

Produce Exchange wholesale quotations are as follows with actual selling price to the trade 2½c advance on Extras.

Creamery per roll ....55@57½
Cooking 23¾

Cheese.

Southern California Anchor 18
Northern fresh 16
Anchor Young America 19
Domestic Swiss 20
Imported Swiss 30

Eggs and Poultry.

Eggs have advanced a cent on extras but case count remains exactly as last week.

Paying price f. o. b. L. A. are:
Eggs ....27@29
Case count buying price 24

Dealers pay for live poultry f. o. b. L. A.:
Hens per pound 3½ up 14
Stags and old roosters.....8
Fryers 2 to 2¾ lbs 19
Broilers 1¼ to 2 lbs 19
Broilers 2 lb 30
Roasters 3 lbs and up 20
Turkeys 23
Geese 13
Ducks ....13@14
Squabs ....1.25@1.75

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs from 175 to 200 pounds.....7½
Prime steers ....4@4¼
Heifers ....3½@3¾
Calves per pound 5
Sheep ewes per head .....3.75@4.00
Lambs per head .....3.25@3.50
Wethers ....4.50@5.00

Potatoes.

Wholesale prices are:

Sweets per box 3.00
New per box ....60@75
New per cwt 2.00
Early Rose local ....1.75@2.00
Burbank local 2.75
Highlands ....2.25@2.50

Onions.

Wholesale quotations:

Texas Bermudas per crate ..1.00@1.10
Coachellas crates 1.00
Coachellas sacks 1.25

Vegetables.

Artichokes locals 75
Asparagus ....8@9
Beets per sk 90
Beans string 7
Bell peppers 30
Cabbages per sack ....50@60
Celery per doz 1.50
Chili per lb 25
Chili dried ....9@10
Cucumbers per box ....90@1.00
Cauliflower per crate 1.25
Carrots per sk 90
Corn per sack 1.00
Egg plant ... .8@12
Green onions per doz bunches ..15@25
Horseradish per lb 12
Summer squash per lb 5
Lettuce choice ....60@75
Mushrooms per basket 3.00
Oyster plant 50
Peas per lb 6
Parsley doz 20
Parsnips ....15@20
Rhubarb Northern per box ..1.25@2.00
Rhubarb Crimson Winter 1.25
Radishes per doz ....15@20
Spinach per doz 15
Turnips sk 1.25
Tomatoes crate ....1.25@1.50

Citrus Fruits.

Navels ....1.25@2.75
Grapefruit ....1.50@3.50
Lemons ....1.00@2.25
Unpacked ....1.00@1.35

Fresh Fruits.

Wholesale prices on the market are:

Apricots per crate 75
New apples 50
Blackberries ....3@4
Cherries white 50
Cherries black ....55@75
Cherries per lb ....5@6
Cherries, white bulk ....3@5
Currants 1.20
Figs ....1.00@1.25
Grapes 4 baskt crate 1.50
Gooseberries ....7@8
Loganberries 3
Loquats per lb 3
Peaches box ....75@1.00
Pears box ....1.00@1.50
Raspberries ....4@5
Strawberries ....3@5
Watermelons per lb 4

CANTALOUPES.

Quotations on cantaloupes are materially lower yet a living price is being secured and fair return must be made to growers from prices now commanding in this market.

Reports from Imperial Valley show that ten to a dozen cars a day are being forwarded and that eastern returns are very satisfactory.

Cantaloupes specials ....75@1.00
Cantaloupes ponies ....2.00@2.25
Standards ....2.75@3.00

Dried Fruits.

Wholesale prices are:

Apricots 10
Evap apples fy per lb ....10@11
Figs loose 5
Peaches ....6@8
Pears 9
Plums pitted ....8@9
Nectarines ....7½@9
Prunes ....7@8

RAISINS—Muscatels, 2-crown, loose, 50-lb. boxes, lb., 3½c; do., 3-crown, 4c; do., 4-crown 5c; sultanas, bleached, lb., 9c; do., unbleached, 3½@4c; new seeded raisins, 16-oz. packages, 6c; do., 12-oz. packages, 5c.

Beans Dried.

Wholesale prices are:

Pink No. 1 ....3.75
Limas per ctl 4.50
Black eyes 3.50
Lady Washington 5.75
Small White 6.50
Garvanzas 4.50

Nuts.

Almonds IXL per lb 15
Pecans polished ....15@17
Peanuts California 5
Walnuts No. 1 ....12@13
Walnuts No. 2 ....9@10

Honey.

Wholesale quotations:

Extracted water white 7
Extracted Light Amber ....5½@6
Comb Water White 15
Comb white 14
Beeswax 25

Hay.

Prices paid to producers f. o. b. Los Angeles are as follows:

New Barley hay 13.00
New alfalfa local 13.00
New alfalfa Imperial .... 10.50@11.50
Wheat hay 13.00
Tame oat 15.00

Grains.

Wholesale selling price f. o. b., Los Angeles:

Wheat new per ctl ....2.35@2.40
Kaffir corn 2.00
Corn Eastern bulk 1.95
Egyptain corn 1.85
White oats 2.25
Seed Rye 2.00

Feed Stuff.

Wholesale selling price f. o. b., Los Angeles:

Cracked corn 2.00
Shorts 1.95
Bran 1.70
Cocoanut cake 1.35
Cocoanut meal 1.85
Cottonseed meal 1.25
Oil cake meal 2.50
Feed meal 2.05
Cracked wheat 2.50
Rolled Barley 1.60

San Francisco Markets

SAN FRANCISCO, June 22, 1909.

Butter.

A quiet market with quotations all the week exactly as last report is all that can be said of butter this week.

The official quotations of the San Francisco Wholesale Dairy Produce Exchange for today are as follows:

California extras per lb 26½
California firsts 25½
California seconds 25

Cheese.

California flats ....12@13½
Cal Young America fy ... ..14½@15½
Young American Oregon fy 15½

Eggs and Poultry.

Eggs dropped slightly on Saturday and now stand a half cent under last quotations.

Official quotations of the S. F. Wholesale Dairy & Produce Ex. are:

Fresh ranch ....21@26

Hens per doz ....4.00@8.00
Roosters ....4.00@10.00
Fryers per doz ....5.00@6.50
Broilers ....2.50@4.50
Geese per pair ....1.50@1.75
Ducks young ....5.00@8.00
Pigeons young .. ..1.00@2.00

Live Stock.

San Francisco prices gross weight:

Steers ....3@4
Cows and heifers ....2@3¼
Hogs ....4@7¼
Calves per lb ....3½@5
Milk lambs 4¾
Wethers No 1 4
Ewes No 1 ....3@3¼

Potatoes.

Wholesale market quotations:

River white fy sacks ....1.50@1.65
Sweets per crate ....1.50@2.00
Oregons Burbanks ....1.50@1.75
New potatoes white ....1.25@2.00

Vegetables.

Wholesale quotations:

Asparagus per box ....1.00@2.00
Bell peppers per basket .....75@1.00
Brussels sprouts per lb .....3@5
Cabbage per box .....2.00@2.25
Cauliflower doz ....75@1.00
Carrots per sk ....65@75
Celery per doz .....40@60
Cucumbers per box ....40@50
Chili peppers per lb ....10@15
Corn per sack ....1.00@1.75
Egg plant per lb ....7@10
Green peas per sk ....1.00@2.00
Mushrooms per lb .....12½@25
Squash per box ....40@50
Onions green per box ....50@60
Rhubarb per box for bay .....50@1.00
String beans ....2@4
Tomatoes box Mexicans .... 1.50@2.00
Tomatoes Cal ....50@65
Wax Beans ....4@6

Onions.

New red per sk ....40@60
Yellow ....75@1.00

Citrus Fruits.

Navels ....1.75@3.00
Valencias ....2.00@2.75
Grapefruit ....1.00@3.25
Lemons ....75@3.00
Limes ... .4.50@5.00

Fresh Fruits.

Apricots box ....25@40
Apples new green ....50@1.00
Apples new green ....40@85
Blackberries chest ....2.50@4.00
Cherries Black Tartarian .....50@75
Cherries loose black per lb .....3@6
Cherries Royal Anne ....50@60
Currants per chest ....4.00@6.00
Figs blk box single layer .....50@85
Grapes Sweetwater ....1.25@1.50
Gooseberries per drawer .....50@60
Logans per chest ....1.75@2.50
Malindas per chest ....3.00@4.00
Cherry plums per box ....25@35
Peaches per box ....25@50
Plums boxes ....25@40
Pears ....50@85
Longworth per chest ....5.00@7.00
Nutmeg melons ponies .....1.50@2.25
Nutmeg specials ....30@40
Nutmeg standards ....2.50@2.75
Pineapples per doz ....3.00@6.00
Pears box ....75@90
Raspberries per chest .... ..3.00@6.00

Dried Fruits.

Prunes 4-size basis 2½
Santa Clara 2¾
½c premium for larger sizes
Apricots per lb; Choice 8; fancy 10½@12¾.
Peaches—Choice ...4; Fancy ...6@7½
Apples evap ....5@7½
Pears ....5@8½
Figs ....2½@4
Nectarines ....5@6
Pitted Plums ....7@8

RAISINS—1908 crop, f. o. b.: Fancy Seeded No. 16, cartons, 4½c; do, No. 12, 3¾c; do, Choice, No. 16, 4c; do, Choice, No. 12, 3⅜c. 50-lb. bxs: Loose Muscatels, Standard, 4-crown, 4c; 3-crown, 3c; 2-crown 2½c; Seedless Thompson, unbleached, 3½c; Seedless Sultanas, unbleached. 2¾c; Dried Grapes, 2c; London Layers, clusters, 6-crown, $3; 2-crown, 90c; 3-crown, $1; 4-crown, $1.50; 5-crown, $2.50.

Nuts.

Walnuts soft shell 9½
Hard shell ....6@8½
Ne Plus Ultra 10½
Almonds Nonp 11½
Pecans ....15@17
Chestnuts ....2@10
Peanuts ....5@6
Pine nuts ....22½@25

Beans Dried.

Limas ....4.00@4.25
Pink ....3.15@3.30
Small white ....6.50@7.00
Large white ....5.50@5.75
Black eyes ....3.35@3.50
Red kidneys ....3.60@3.70
Garvanzas ....2.90@3.55
Bayo ....5.30@5.45
Horse beans ....2.00@2.10

Hops.

Hops 1908 crop ....6@10
Old crop ....2@6
1909 crop contracted for at ....12@13

Honey.

White comb ....11@12½
Light Amber ....9@10
Extracted W W ....7@8
Extacted light amber .....6@7
Beeswax per lb ....23@30

Hay.

Scott and Magner say: All the hay districts are now shipping or about to ship, so that from this time on it may be expected that this market will receive large quantities steadily from the fields.

Statistics taken June 1st, 1909, show that 15 per cent less hay was received in San Francisco for the year than was received during the preceding year, which tends to show that the dull condition of trade, as well as the extremely high prices which prevailed during the past year, caused a heavy decrease in the consumption of hay in this county. There is severe complaint among all consumers of feed that it is impossible for them to use feed satisfactorily for the coming year on this extreme basis of prices.

The alfalfa hay market is slow, as there is practically very little arriving and no established basis for trading.

Conditions of straw are about as they have been, with the exception of the arrival during this week of a few cars of new straw. As the new crop straw becomes more active in the market, our prices that at present govern, must decline somewhat.

Choice wheat hay ....20.00@21.00
No 1 wheat or wheat & oat 18.00@19.00
No 2 wheat or wheat & oat 17.00@18.00
Choice tame oat .....16.50@17.50
Other tame oat ....14.00@15.50
New crop wild ....12.00@16.00
Stock hay ....7.00@9.00
Alfalfa ....10.00@14.00
Straw ....60@80

Grains.

Wheat No 1 ....2.10@2.15
Barley ....1.42½@1.50
Oats white ....2.15@2.25
Oats gray ....2.05@2.15
Rye new crop ....2.10@2.15
Corn Egyptain .....1.60@1.65
Corn Cal sm round ....2.00@2.10
Alfalfa seed, Cal .....16@18
Mustard yellow .....5¾@6
Mustard brown ....3¾@4½
Millet ....2½@3
Broom corn seed per ton 23.50

Feed Stuff.

Bran per ton ....29.00@30.00
Feed cornmeal per ton .. ..39.00@40.00
Cracked corn per ton ....40.00@41.00
Rolled barley per ton ....30.00@32.00
Rolled oats per ton .....39.00@41.00
Oil cake meal per ton .....38.50@40.00
Cocoanut cake per ton .....25.00@26.00
Middlings ....33.00@35.00
Mixed feed per ton .....26.00@30.00
Shorts ....31.00@32.00

Deciduous Market

Sacramento, Cal., June 19, 1909.

The market on cherries since our last report has declined a little, which is due to poor condition of the fruit on arrival. The market in Chicago yesterday was as follows: Black Oregons 70c to $1.10; Black Republicans 85c to 95c; Royal Annes 55c to $1.45. Shipments from Placer and Solano County are very light, and will be cleaned up this week.

The peach market has also declined somewhat this week, especially on the Alexander variety. Chicago reports them selling at 55c to 60c delivered. New York 80c to $1.10. The decline is due to the heavy shipments of peaches and also the fact that the Alexander is an undesirable seller.

Clyman Plums have held up very well, the same averaging $1.00 to $1.40 delivered.

Royal apricots have sold exceptionally well, there being a good demand for this variety in all markets. At present they are averaging in the auctions $1.70 to $2.10.

On the sixteenth instant the prices paid to the growers, established by the commercial companies, were as follows: Triumph 55c; Alexanders 45c; Hales Early 45c; Clymans 60c; Red June 70c; Botan 70c; Climax 75c; Tragedy 85c; Cots 70c.

Very few Tragedy and Climax have been forwarded so far, although these varieties together with Red June, Botan, etc., are expected to come in next week in liberal quantities.

We had a light rain on the seventeenth instant, but from reports received no damage has been done to the fruit.

Shipments up to the eighteenth showed a total of 481 cars as compared with 596 in 1908.—T. C. Tucker.

Citrus Market

LOS ANGELES, June 23, 1909.

Valencias are going forward at the rate of nearly a hundred cars a day and are meeting with very satisfactory reception. The general tone of the market at present is very good in all parts of the east. As a rule, there is no "dry" fruit although fruit from some sections where the cold was extreme show some pithiness.

The tone of the lemon market is exceptionally good, and the fruit is being pushed forward as rapidly as possible.

Shipments.

Total shipments of oranges to date since November 1st are 26,406 cars and of lemons 3,991, or a total of citrus shipments for the season of 30,397 cars.

NEW YORK, June 21.—Thirty-four cars oranges sold. Market firm on good stock, with easier tendency. Very hot.

NAVELS—	Average.
Cerrito, L. V. W. Brown	3.65
Elephant OG Cash Assn	3.25
Plain Ends OG Cash Assn	2.50
Carnation H & Greene Co	2.85
Trop Queen H & Greene Co	2.75
Rook Ely Gilmore Ft Co	2.15
Kaiser Hanson & Sears	2.25
Sultan Hanson & Sears	2.05
Robusta AH Ex	3.30
Fiesta Riv Ex Riv	3.00
Sweetheart AF Ex Highgrove	2.95
Blue Globe Riv Ex Riv	3.10
Red Globe Riv Ex Riv	2.85
Bear OK Ex	2.80
La Mesa Riv Ex Riv	2.65
Golden Riv Ex Riv	2.45
Palm Tree AF Ex	1.85
La Mesa Riv Ex Riv	2.75
King Leo SA Ex	2.15
Pomona SA Ex	2.50
Fiesta Riv Ex Riv	2.55
Orchard National O Co	3.50
Standard National O Co	3.00
Columbia National O Co	2.50
Rialto Girl Growers Ft Co	2.45
Euclid Euclid Ft Co	2.80
VALENCIAS—	Average.
Old Mission C C Chapman	5.00
Golden Eagle C C Chapman	3.05

ST. MICHAELS—Quail, $2.85; Coyote, $2.55; Blue Globe, $2.80; Mayflower, $3.00; Carnation, $2.55; Golden Scepter, $2.80; Yuletide, $2.65; HALVES—Elephant, $1.45; Golden Scepter, $1.45; Slover Mtn., $1.45; Rose, $1.50; Blue Globe, $1.40. GRAPEFRUIT—Blue Globe, $2.05; Cerrito (halves), $2.15-$1.85; Mayflower (boxes), $4.15; Euclid, $2.75.

CLEVELAND, June 21.—One car navels, one sweet, one seedling, two mixed and one car lemons sold. Market higher both oranges and lemons. Raining.

NAVELS—	Average.
Belt RH Ex E High	2.25
Grove QC Ex	2.15
SWEETS—	
So Beauties QC Ex Corona	1.35
Newsboy RH Ex Redlands	2.25
Just Rite QC Ex Corona	1.55
Belt RH Ex E High	2.55
SEEDLINGS—	
Fiesta (budded) Riv Ex Pach	2.40
Royal Knight RH Ex Red	2.60
Pond Lily (budded) Riv Ex Pach	2.05
Newsboy RH Ex Red	2.15

ST. MICHAELS—Royal Knight, $3.30; Gold Buckle, $3.25; Belt, $2.75. GRAPEFRUIT—Royal Knight, $1.95; Gold Buckle, $2.30; Belt, $1.65. LEMONS—Pico S T Ex Whittier $1.80.

ST. LOUIS, June 21.—Cloudy. Strong on Valencias. Eleven cars sold.

NAVELS—	Average.
Owl OK Ex	2.35
King Leo SA Ex	2.25
Select SA Ex	1.95
Choice N W Blanchard	1.10
Greyhound SA Ex	2.15
VALENCIAS—	
Ibex ST Ex Rivera	3.30
Owl OK Ex	2.50
Rivera ST Ex Rivera	3.05
LEMONS—	
Blue Jay OK Ex	2.00
Hillside Gem Loveless FC Esco'do	2.75
Palomar	2.10
Greyhound SA Ex	2.45
Duck	2.20

BOSTON, June 21.—Twenty-two cars sold. Hot weather. Market strong.

NAVELS—	Average.
Pomona San Antonio Exchange	2.45
Tunnel Semi-Tropic Ex Fernando	2.70
Orchard National Orange Co	3.95
Euclid Euclid Fruit Co	2.75
Golden Beauties	2.40
Niagara Stewart Fruit Co	2.10
Rey Semi-Tropic Ex Fernando	3.35
Orchard Run San Antonio Ex	2.55
Uplander Euclid Fruit Co	2.35
King Leo San Antonio Ex	2.25
VALENCIAS—	
Signal Stewart Fruit Co	3.85
Niagara Stewart Fruit Co	2.65
Sunset Brand Stwart Fruit Co	2.20
Independence Growers' Fruit Co	3.50
Rescue Stewart Fruit Co	2.75
SEEDLINGS—	
Titus Ranch San Marino G P A	2.80
El Toreador San Marino G P A	2.55
Golden Scepter Rialto Orange Co	2.70
SWEETS—	
Homer Queen Colony Ex Corona	2.70
Family	2.30
Colombo Semi-Tropic Ex Fullerton	2.70
ST. MICHAELS—	
Carmencita Semi-Tropic Ex Fuller	2.60
Golden Scepter Rialto Orange Co	2.60
LEMONS—	
Dixie California Citrus Union	2.20
Pet San Antonio Exchange	3.85
Greyhound	3.35

PITTSBURG, June 21.—Thirteen cars sold. Strong on Valencias; very strong on lemons; steady on navels; weather hot.

NAVELS—	Average.
King Leo San Antonio Ex	1.95
Hawk San Antonio Ex	1.70
VALENCIAS—	
Big Find	3.25
Aurora E Peycke Co	3.05
Violet Duarte-Monrovia Ex Duarte	3.30
Climax E Peycke Co	2.90
Jasmine Duarte-Monrovia Duarte	3.30
SEEDLINGS—	
Flamingo California Citrus Union	2.50
Red Print Riverside Ex (buddd)	2.30
Aurora E Peycke Co	2.45
Blue Print Riv Ex Riv (budded)	2.05
Green Print Riv Ex Riv (budded)	2.10
ST. MICHAELS—	
Golden Flower Redlands GO Assn	3.00
Camellia Redlands Mo Co	3.05
Queen Bee Queen Colony Ex Corona	2.70
Royal	2.45
GRAPEFRUIT—	
Big Find	1.25
Primrose Duarte-Monrov E Duarte	2.00
SWEETS—	
Camelia Redlands Mo Co	2.55
Jasmine Duarte-Monrovia E Duarte	2.30
LEMONS—	
Bridal Veil Limoneira Co	3.20
White Cross	3.00

CINCINNATI, June 21.—Warm; steady on oranges; strong on lemons. Two cars navels, one seedling and two lemons sold.

NAVELS—	Average.
Owl OK Exchange	2.10
Hawk San Antonio Ex	1.90
LEMONS—	
Arab San Antonio Ex	3.15
Duck	2.80
Cry Baby Flagler	2.75
Romeo	2.70

PHILADELPHIA, June 21.—Three cars navels and six mixed cars sold. Market steady; weather clear and

NAVELS—	Average.
Yankee Doodle AF Ex Highgrove	2.30
Pomona San Antonio Ex	2.15
Sugarloaf Riv Ex Highgrove	2.65
Hawk San Antonio Exchange	1.90
Hawk San Antonio Exchange	1.95
Highgrove Riv Ex Highgrove	2.50
Yuletide Redlands Mo Co	2.10
SWEETS—	
Orchard Run San Antonio Ex	2.50
Royal Knight	2.65
Yuletide Redlands Mo Co	2.65
Golden Scepter Rialto Orange Co	2.65
ST. MICHAELS—	
Golden Scepter	3.25
Yuletide	3.10
Royal Knight	3.15
Newsboy	3.10
Sugarloaf (half boxes)	1.90

SEDDLINGS—Hawk, $2.60.

VALENCIAS—Newsboy, $3.40.

GRAPEFRUIT—Sugarloaf (halves) $2.10.

BLOODS—Sugarloaf (halves), $1.45.

NIGHT SOIL.

This fertilizer is highly recommended not only for squash but for cucumbers, melons, etc. Place a small shovelful in a hole made in the earth. Then thoroughly mix it with the soil. Do not plant the seed directly in the mixture but cover it with good soil and plant the seed in this. Hen manure or rotted barnyard manure may be used in place of night soil. Do not permit any kind of manure to come in contact with the roots of plants or trees, until it becomes at least partly dissolved or rotted.

Stop a moment and consider how important it is that you keep your horses in good condition, especially if you are expecting to sell them. If you have a blemished horse, write for my free book telling how to treat them. ABSORBINE is performing wonders in removing Puffs, Thoroughpins, Curbs, Enlarged Glands, Swellings, etc. ABSORBINE at your druggist's. $2.00 a bottle or delivered postpaid. Made only by W. F. Young, P.D.F., 244 Temple St., Springfield, Mass.

Veterinary

Answers in this column by Dr. R. T. Whittlesey, are without charge. For immediate mail answer remit $1.00. In writing questions give full symptoms or particulars of injury of animal.

Fistula.

My mare bruised her shoulder near the top. A sore formed which I treated with peroxide. Soon another formed on the opposite side. They seemed to be getting well until lately a new opening appeared near the others and is discharging freely.—W. R. T., Calistoga.

Your mare has a fistulous sore which will make you plenty of trouble before it gets well. It ought to be opened to secure complete drainage. You had better get a good veterinarian to treat her, otherwise, it may never be cured.—R. T. W.

Dry Hoofs.

My mare seems to be stiff in her front quarters when first hitched up. After travelling a few minutes she shows no signs of being sore until a few minutes after she is stopped again. The bottoms of her hoofs are very hard and dry. The frogs are like horn.—Subscriber, Buena Park.

You have told the story yourself. The mare's feet are too dry and hard. They should be softened. The simplest way is to stand in mud. You can wrap her feet in swabs saturated in neat's foot oil, the natural oil of the foot.—R. T. W.

Itching.

My mare seems to itch badly, especially near the tail. She bites herself and rolls frequently.—J. A., Ripon.

Rub in with brush once daily a solution of eucamphol and water, fifty parts of water to one of eucamphol.—R. T. W.

Hoofs Breaking.

Is there any food or tonic which will make a horse's hoofs grow? My horse's hoofs are very soft and brittle and cannot hold a shoe more than a week or two. He is kept on alfalfa pasture to wet his hoofs with dew and fed same as other horses which show no sign of this trouble.—O. P., Chico.

Bran, oil cake and any foods high in nitrogen will induce hoof growth. The continual use of coal oil in the hair above the hoofs will stimulate hoof growth, and saturating the hoof with coal oil will also prove beneficial. The hoof grows very slowly, so it will take a long time.—R. T. W.

Fits.

I have a horse apparently troubled with epileptic fits. When bridled, the jaws and muscles of the neck and head twitch and jerk. Sometimes he falls and his head will draw back to the top of the withers, mouth wide open. He will stay in this condition for a minute or more, then will stagger up and seem to be blind for five minutes or so. After a half day's work he is very weak. He is a fine-looking animal and appears well.—H. D., Guernsey.

You are undoubtedly right about the horse having fits. They are always followed by great weakness. There is no satisfactory treatment. In time he may recover, but work and excitement seem to make horses in this condition much worse.—R. T. W.

Abscess.

My horse recently had a lump on the middle of his lower lip, with swelling on his lower jaw. We thought he had been stung, and treated with ammonia and turpentine. Later the swelling enlarged and broke, and pus and blood escaped. Recently another lump formed on the right side of his throat from which pus is escaping. Does the horse need a blood purifyer?—J. P., Escondido.

The abscess should be cut open to allow the pus to escape as soon as you are sure pus has gathered. Then wash clean, using an antiseptic wash composed of creolin or carbolic acid and water—not too strong. I do not think a blood purifier is necessary.—R. T. W.

DR. WHITTLESEY'S VETERINARY REMEDIES.

These are not ordinary mixtures but are from well tried formulas, used in an extensive practice in Southern California for nearly a quarter of a century. Dr. Whittlesey's Sulphur Arsenical Salve for deep fistulous or ordinary chronic, indolent sores such as, "Poll Evil," "Fistulas," "Quitters," "Thrush," "Scratches," "Warts," "Collar sores" or "Sit-fasts." $1.00 per package postpaid. Printed directions. Dr. Whittlesey's Antiseptic Healing Powder. Forms a coating over raw surfaces, excludes air, flies and floating germs. Makes a cheap and convenient dressing for the many sores that occur to stock on the ranch. $1 full pound can postpaid.

DR. R. T. WHITTLESEY.

Veterinary Hospital, 714 East Seventh St., Los Angeles, Cal.

POULTRY AT THE STATE FAIR.

A letter from Mr. E. K. Healy, Superintendent of the poultry department of the California state fair calls attention to the fact that there is less than two months for the poultry fraternity to get busy and get an exhibit of poultry worthy the coming state fair. Mr. Healy remarks that the society has done more for the poultry people in the shape of prizes than ever before. Last year $933 was divided among the fanciers there. Of course, poultry people usually complain as to the time of the year in which the fair is held, as it is practically in the middle of the moulting season, but we have noticed in the past that some remarkably fine stock was exhibited at the fair, the youngsters especially being of fine class. It is too late now to do much selecting and training up, but we imagine that if our fanciers have any stock which is available, the returns from the advertising secured at such an exhibit will be well worth the effort. Mr. Healy writes us that there will be lectures by experts from the University of California, not only regarding poultry but pigeons as well.

AN ACRE OF LAND.

The Kansas City "Star" says a good farmer can raise on one acre of land any one of the following:

One acre of onions, 445 to 600 bushels.

One acre of tomatoes, 300 to 400 bushels.

One acre of sweet potatoes, 500 to 600 bushels.

One acre of beets, 300 to 400 bushels.

One acre of carrots, 300 to 400 bushels.

One acre of cabbage, 8,000 heads.

One acre of potatoes, 100 to 300 bushels.

Here are actual results, each item referring to the product of an acre where the grower was a specialist:

Asparagus, 300 bunches, 20 cents a bunch, $600.

Cauliflower, 100 to 300 pounds, $450.

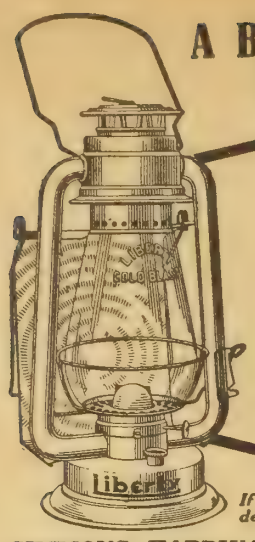
Onions, 600 bushels, 75 cents, $450.

Cabbage seed, 1,000 pounds, 40 cents a pound, $400.

Potatoes, 175 bushels, low estimate, $175.

Cabbage, 7,000 heads, $500.

The farmers' club of Mound, Ventura county, is moving for good roads.



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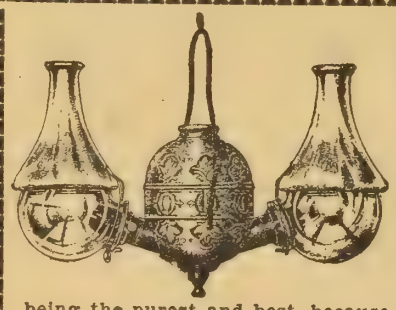

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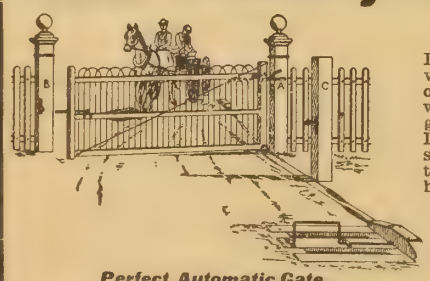

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I read a funny ad in our
  Farm paper t'other day,
From some concern what handles furs,
  Which started off this way:
"Attention—Let us Tan Your Hide!"
  In big, black letters, too.
Now, if you were a boy like me,
  How would that look to you?

I don't see how they get replies
  From funny ads like that.
I wouldn't want to send to them,
  I'd be too mortal sca't.
Besides, I get it here to home;
  Sometimes it's pretty rough.
If there's a hide to tan, I guess
  Pa does it well enough.

—Joe Cone.

COMING TO A DECISION.

I CAN'T give you any answer today, Charlie."

You've been saying that for three months."

"And I suppose I'll continue to say it till I make up my mind to—"

"Be married?"

"Oh, no; I've decided upon that."

"You mean you haven't decided on the man you will marry."

To this the only reply was a far-away, dreamy look.

"How many of us are there?"

"How disagreeable of you! You seem to intimate that there are a large number, whereas there are only two."

"That simplifies it immensely. I infer from your putting me off rather than refusing me that I'm one of the two. Now, how would it do to decide between the two by tossing a coin?"

Again that far-away look, then: "Suppose you lose?"

"I shall have to bear my disappointment like a man."

A dissatisfied look passed over her face. She was silent.

"What's troubling you?"

"I was thinking of my own disappointment in case the coin fell the wrong way."

"But I thought there was no wrong way for you."

No reply.

"Does the other fellow possess an advantage that has nothing to do with love?"

"No?"

"Then, if you can be happy with either of us and can't decide between us, why should you not be satisfied with the decision of a toss?"

"Why, because how stupid of you—the coin might decide the wrong way."

It was his turn to pause. He was of a scientific turn of mind and had a fancy for paradoxes, but there was one that baffled him.

"I have it," he said, finally. "We'll toss the coin, and if it falls the wrong way you are to have the privilege of deciding the right way."

She neither assented nor dissented, and taking a quarter from his pocket he said: "I choose this eminently respectable head with a serious face, a wreath and the motto: 'In God We Trust.' I am perfectly willing to trust in God."

"You said that just as if you had no confidence whatever in me."

"You, not being able to choose between two lovers, are not to be relied on by either. I have chosen heads, there remains for my rival the spread eagle with an olive branch in one claw and a bundle of arrows in the other, by which he means: 'If you marry me I'll love you; if you don't I'll shoot you.' There's a ribbon in his mouth which means: 'You shall always be dressed up mighty fine,' or, in other words: 'I'll give you everything you want.'"

"That's just what makes me hesitate. You cooly arrogate everything to yourself. You choose the head and the motto: 'In God We Trust,' leaving for—for the other—a spread eagle, as you call it, with your own interpretation of the emblems."

"I'm going to put an end to your hesitation. Up she goes!"

He flipped the coin, and as it came down he put his hand over it.

"Before you know who has won," he said, "I want to know if you intend to abide by the decision?"

"I suppose so—that is"—

She got no further. He tried in vain to get a more definite reply. At last he took away his hand and showed the coin—tails up.

"He has won," he said cooly, putting the piece in his pocket. "Permit me to congratulate you."

"On what?"

Her eyes wandered all over the room, lighting nowhere.

"Tell me plainly," he said, "without beating around the bush, are you satisfied or dissatisfied with the result of the loss?"

"I might not be satisfied if—that is—

She paused and looked out of the window. On her fair young brow were the gentle corrugations of perplexity.

"Well?"

"You seem to be satisfied."

"I? What has that to do with it?"

"If you had shown even a tiny bit of dissatisfaction—"

"You would have been satisfied?"

"You're always misinterpreting what I say. I didn't mean that at all."

"Come; we're making no headway. It was agreed that if the coin fell the wrong way you were to have the privilege of deciding the right way."

"But I told you at first, I can't decide, at least not just now."

"Then I suppose we have spent all this time for nothing. I'm worn out with trying to bring you to a decision. I'm going away for a long while—a year, two years, five if necessary—to overcome this infatuation for a girl who doesn't know whether she wants me or doesn't want me or wants somebody else or—"

"There's one chance for a decision," she interrupted, "that you haven't thought of."

"What's that?"

"You might toss again."

He sent the coin spinning in the air, and without waiting for it to come down took her in his arms.

The next morning her little brother was munching candy. When asked where he got the money to buy it with he said he had found a quarter under the piano.

About the House

THE store windows are telling us that the Fourth of July will soon be here, and the small boy, and the small boy's father, and his grandfather, and his great-grandfather, too, linger long over the display of flags and fire works. It is just as much nonsense to talk of "buying fireworks for the children" as it is to say you "go to the circus to take the chil-

Appell's SOUTH AFRICAN WATER BAG

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Keeps water cool 48 hours or longer; in sun or shade; great boon to prospectors, surveyors, sportsmen, stockmen, farmers, teamsters, anyone exposed to dry or warm weather. Used by U. S. Gov't. Strong, light, convenient to carry. Guaranteed.

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dren." Deep in your heart you know you enjoy the fireworks and the circus just as much as the children do.

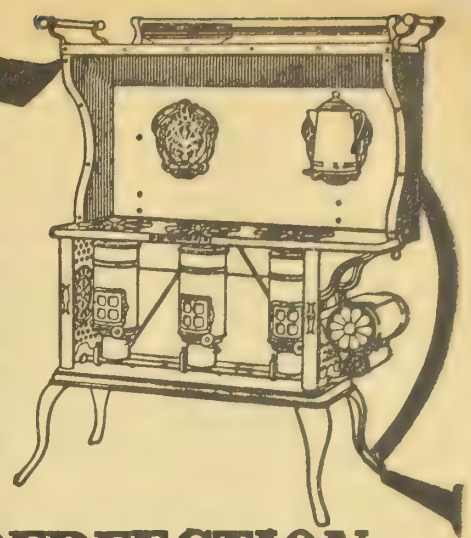
The question that confronts many of us at this time of the year, is—"Where shall we spend the Fourth?" Perhaps some of us older ones would prefer to remain quietly at home, but the younger members of the family vote a noisy "no" to that proposition—and I am glad they do. The Fourth of July is a day to be celebrated. According to one small girl—"the Fourth was made so we could have fireworks," and she was right. What if it is a noisy and strenuous day—noise is healthful and wholesome and if carefully managed by the older heads the various amusements of the day need cause little uneasiness to careful mothers. If there is no "big" celebration near you, or if for any reason you think it better to keep away from the crowd, why can not you and your neighbors have a real, genuine "Fourth of July celebration" of your own, planned like the big ones, with flags, music, speeches, firecrackers, games, and a good dinner, with ice cream and pink lemonade. Does it look like too much work? Divide it up. Let some arrange for the music—you need not hire a brass band. You have some people in your neighborhood who sing and perhaps some who play the drum or fife or cornet or banjo—any or all of these would make good music. Have plenty of patriotic songs. Let those who live nearest the place selected for the celebration see that a few comfortable seats are provided for the older people and good drinking water and wood to make a fire to make the coffee. Have some one read the Declaration of Independence, and all of you listen to it—it will do you good. Have a short address—every country neighborhood has a good talker or two; have a few recitations by the little folks—patriotic subjects—something that they can understand. Have plenty of "fire works" and races and games of various kinds for the active pushing youngsters who find it hard to keep still. See that this part of the program is managed by a cool headed person, but one who has not forgotten how to have a good time. Have a ball game, a sack race, a potato race—all make fun and with flags and fire crackers you may have just as good a time as if you had a thousand people instead of twenty or thirty or fifty. And when it comes time for the "eats" as one little two-year-old always calls a company dinner, let the older people sit back and allow the younger ones to unpack the baskets, and arrange and serve everything. You will be surprised to see how easily and quickly they will manage everything. If you are too far away from every one to have a neighborhood picnic, have a family affair, and if you are alone quit work and take your dinner out under the blue sky, and after you have eaten, sing the Star Spangled Banner and all the patriotic songs you know. If you can't sing, make a speech—a good patriotic one—one that would give the world something to think about, if they could hear it. Any way do something to celebrate your country's birthday.—Elbepe.

YOUR OPPORTUNITY.

A servant with this clause
Makes drudgery divine;
Who sweeps a room, as for thy laws
Makes that and th' action fine.

—George Herbert.

For the Summer's Cooking



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NEW PERFECTION
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Delivers heat where you want it—never where you don't want it—thus it does not overheat the kitchen. Note the CABINET TOP, with shelf for warming plates and keeping food hot after cooked, also convenient drop shelves that can be folded back when not in use, and two nickeled bars for holding towels.

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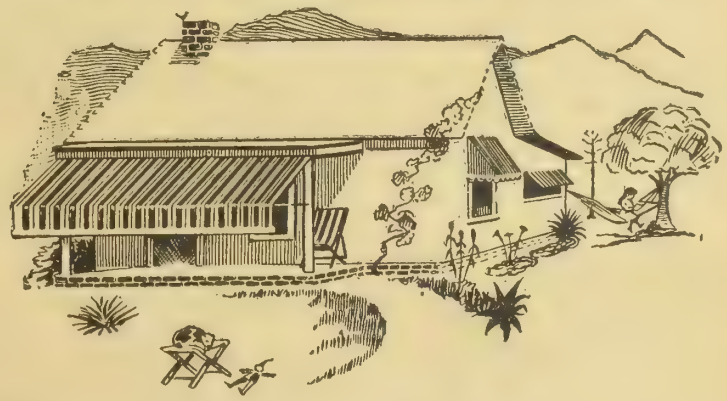

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Pacific Pipe Company
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Index

California Cultivator

Volume XXXII

January-June, 1909

BEES.

A—Apicultural Situation of Imperial Valley, 154; Apiculture at the University, 392.
B—Bee Notes, 17; Bees Aid the Growers, 262; Bee Paralysis, 421; Busy Bees, 615.
C—Cuban Honey and Beeswax, 672.
D—Drone Bees, 189.
E—Extraction of Beeswax, 523.
F—Feeding Bees, 17.
G—Grading Rules for Comb Honey, 103.
H—Humanizing Influence of Bee Keeping, 294; Hives, 672; Honey, 715.
M—Management of Bees, 103; More Laws, 263; Misapprehensions Corrected, 361.
N—New Bee Keeping Territory, 189.
P—Peddling Honey, 648.
S—State Bee Keeper's Association, 122.
T—Troubles of Bee Inspector, 292.
W—Wax Secretion, 615.

CITRUS.

A—Advertising Oranges, 28; Arizona Citrus Sections, 180; Advertisement for Oranges, 209; Avocado Propagation, 244; Arizona Orchard Work, 340; Avocado, 436; Attack on Cooperation, 369; Advertising Oranges, 709.
B—Banana Culture in Hawaii, 5; Bacteria in Soil Culture, 372; Black Ants Eat Scale, 660.
C—Citrus Gumming, 85; Controlling Some Diseases of Oranges, 211; Conditions in California, 212; Central California Shipments, 589; Citrus Tariff, 684; Cost of Oranges, 687.
D—Date Culture, 61; Desert Producing Oranges, 213; Date Growing, 372; Duty on Lemons, 500; Disposing of Our Oranges, 532; Diseases of the Citrus, 708.
E—Experiment Farm of Our Own, 637.
F—Foot Rot, 117; Fertilization of Citrus Groves, 180; Fresno Oranges, 214; Florida Orange Men Organize, 437; Fertilizer Tests, 500; Florida Growers, 588; Florida Conditions, 588; Fruit Acreage, 612; Florida Exchange Assured, 684.
G—Gumosis Control, 148; Gophers, 685.
H—Humus, 60, 84, 436; Hawaiian Pines in the United States, 341; Hawaiian Pines, 561.
I—Insect Friends, 116; Imperial Valley Oranges, 216; Icerya Purchasi, 565.
M—Making a Good Citrus Grove, 532; Marketing Citrus Fruits, 564.
N—Nursery Trees Gumming, 116; Neglected Fruit, 564; Nitrogen and Nitragin, 636.
O—Oranges to Eastern Market by Water, 4; Pre-cooling Plant, 4; Oranges in Cuba, 181; Organize to Fight Orchard Pests, 211; Oranges in Florida, 277.
P—Products of Hawaiian Islands, 403; Pre-cooling in Florida, 469; Potash, 469.
R—Refrigeration Car, 468; Red Spider, 564; Russet Oranges, 660.
S—Save the Water, 60; Soil Analysis, 117; State Insectary, 660; Soil Texture, 709.
T—Tariff, 4; Tulare Orange Groves, 212; The Orange, 341 Texas Oranges, 589.
V—Value of Organization, 276.
W—White Fly Menace, 404.

DECIDUOUS.

A—Almond Culture, 278; Advertising Raisins, 310; Arsenate of Lead, 375; Apricot Outlook, 406, 441; American Apples in Europe, 472; Apples, 710.
B—Better Nuts, 63; Budding Grape Vines, 279; Bordeaux and Eau Celeste, 343.
C—Core Rot of the Jonathan, 342; Crown Gall of the Apple, 374; Casaba Melons, 569; Codling Moth Spray, 639; Colorado Fruit Prospect, 686.
D—Deep Culture of Vines, 86; Dust Spray, 246; Digestibility of Nuts, 638.
F—Food Value of Dried Fruit, 120; Fig Pruning, 121; Facts About Grapes, 246; Failure to Pollenize, 663; Farmers' Club, 686.
G—Grape Growers Alert, 62; Grafting Wax, 224; Grape Shipping, 566.
H—Home Canning for Market, 311.
I—Insecticide Law, 62.
J—Japanese Persimmon, 711.
M—More Apples Needed, 374.
N—New Fruits, 502; Napthalin Treatment for Cutworms, 569; New Almond, 663; Nut Culture, 687; Nut Paste and Nut Preserves, 710.
O—Observations of a Tenderfoot, 63.
P—Pruning, 27; Phylloxera, 120; Pruning Apple Trees, 279; Prune Future, 311; Protecting Vineyards, 446; Place of Nuts in the Diet, 662.
R—Rooting Grape Cuttings, 224; Raisin Day, 406, 467; Raisin Consumption, 446; Returns for Prunes, 467.
S—Smyrna Fig Cuttings, 34; Seedlings vs. Grafted Nuts, 86; Sulphur, 119; Small Cannery, 224; Spray for Codling Moth, 375; Shade Crops, 503; Shall We Continue Spraying for Codling Moth? 536; Science of Irrigation, 614; St. John's Brod Tree, 663.
T—Trees Out of Order, 7; Table Grape Production, 247; Thinning Fruit, 590.
U—Unfermented Grape Juice, 711.
V—Vine Pruning, 30.
W—Walnut Pruning, 184; Walnut Growers Organize, 310; Waste in Sulphuring, 342; Walnut Association, 374; Walnut Blight Remedy, 688.

EUCALYPTS.

A—Amygdalina Regnan, 115.
P—Planting Eucalypts, 136; Possibilities of Eucalypts, 136; Propagation of Eucalypts, 250.

FARM NAMES.

C—California Farm Names, 64, 450, 482, 547.

FORRESTRY AND IRRIGATION.

C—Conservation, 231; Caring for Electric Motor, 420; California Progressive, 673; California's Navigable Rivers, 727.
D—Distribution of Water in Soil, 435; Deeper Significance of Living, 516; Desert Watering Places, 548.
F—Flood or Furrow Irrigation, 673; Forestry in Other Countries, 683; Forestry In the United States, 707.
G—Ground Waters of Indio Region, 516.
I—Irrigation, 282; Irrigation of Our Great Valleys, 349.
L—Legislation to Prevent Forest Fires, 420.
M—Measuring Water, 535.
N—Need of Forestry Irrigation, 218; National Irrigation Congress, 587.
O—Our Friends the Trees, 529.
P—Practical Irrigation by Practical Men (Special), 531.
R—Raising Timber Crop, 619.
S—Selecting the Farm Engine, 548; Sacramento Development, 697.
U—Underground Waters of Southern California, 198.
W—Water Resources Investigations, 90; Water Code, 282.

GARDEN ORNAMENTAL.

A—Asters, 440.
B—Beautifying Home Grounds, 193, 690; Beautifying Home Yard, 230; Backyard, 345; Bulbs in Glasses, 409; Bulbs, 642.
C—Chrysanthemum Care, 8; Cuttings, 249; Commercial Bulb Growing, 281; Control of Tree Planting Along Country Roads, 313.
E—Easter Lily, 504.
F—Floral Progress, 346; Foliage not Flowers, 504.
G—Gopher Proof Bulbs, 153; Garden, 642.
H—Hydrangeas, Blue, 193; Home Grounds, 345; How They Got Their Names, 346.
I—Iris, 440; Introductions from Australia, 504.
L—Litter About the Grounds, 135; Lice on Roses, 409; Lawn Planting, 440.
M—Massing Shrubs, 249; Making a Garden, 377; More Beautiful America, 479.
O—Over Potting, 281.
P—Planting Perennials, 249; Pansies, 249; Planting of Flower Seeds, 345; Pruning Shade Trees, 666; Potted Plants, 666; Pink Watsonias, 666; Propagation of Shrubs, 690; Propagating Begonias, 690.
R—Roses, 479.
S—Spring Flowering Bulbs, 89; Surroundings of Our Homes, 409; Salvias, 534.
T—This Month, 8, 153, 249, 377, 534, 666; Three Famous Old Trees, 345.
Y—Yards and Lawn, 135.

GARDEN VEGETABLE.

A—Asiatic Competition, 32; Asparagus Growing, 312; Asparagus Plants, 344; Asparagus Culture, 478.
B—Big Industry, 88; Bacteriosis of Beans, 591; Bacterial Blight of the Irish Potato, 667.
C—Cantaloupes Under Arid Conditions, 147; Cauliflower Growing, 192; Cabbage Worms, 192; Cut Worms, 248; Cucumbers For Profit, 280; Chayote, 505; Celery Seed Starting, 691; California Berries, 714.
F—Fertilizing Small Fruit, 643.
G—Garden Peas, 152, 230; Globe Artichokes, 248; Green Corn, 505.
H—Hot Beds and Cold Frames, 179; Hen Manure For Potatoes, 305; Horse Manure, 441.
I—Intensive Vegetable Gardening, 88.
M—Model Ear of Corn, 33; Making A Small Garden, 192.
O—Origin of Vegetables, 9; Oust the Japs, 32; Origin of Tomato, 152.
P—Potato Improvement, 33; Peanut Raising, 134; Potato Diseases, 376.
R—Running Out of Spuds, 280; Rhubarl Association, 406; Red Raspberries, 591.
S—Sauerkraut, 9, 344; Spud Pointers, 192; Seed From Small Potatoes, 344; Sterilizing Seed Bed for Tomatoes, 411; Screen For Cabbage Bed, 478; Sweet Potato Plants, To Grow, 534; Strawberry Sorting, 714; Sea-Kale, 714.
T—This Month, 9, 152, 248, 376, 534, 667; Tomato Planting, 134; Tipping Raspberries, 248; The Strawberry, 408; The Everglades, 408.
V—Vegetable Properties, 312; Value of Vegetables, 408; Vegetables in Klondike, 408; Use of Hoes and Rake, 691.
W—Weeviled Peas, 32.

GENERAL AGRICULTURE.

A—Alfalfa, 132; Alfalfa Disk Harrowing, 164; Agricultural Schools, 261; Arid Agriculture, 481; Alfilaria as as Forage Plant, 481; Alkali Soils, 514; Alfalfa Seeding, 554; American Country Life, 611.
B—Blasting Boulders, 389; Breaking Up Alfalfa, 568; Beet Sugar Industry in the United States, 625.
C—Corn and Sorghum Culture in the United States, 101; Concrete Destruction by Alkali, 219; Cement on the Farm, 357; Chinook Wind, 389.
D—Dry Farming Congress, 45, 562; Dry Farming, 190, 425; Demonstration Train, 305; Durum Wheats, 324; Davis Bill, 424; Disc Harrows and Rollers, 521; Dodder, 553.
E—Egyptian Cotton, 261; Education of the Farm Boy, 659.
F—Free Lumber, 131; Farmer, The, 133; The Farmers' Union, 260; The Farmer as a Factor, 449.
tor, 449.
G—Great Promise, 48; Gypsum, 100; Ground Limestone for Alfalfa, 424; Grain Weevil, 425; Grange History, 480; Grasshoppers, What Becomes of Them, 568; Ground Squirrels, 589.
H—Humus, 275.
I—Imperial Valley Alfalfa, 81; Improving Alfalfa, 522.
L—Locust Extermination, 44; Lime on Various Soils, 59; Land Fraud Prevention, 595; Liberty Poles, 655; Love of the Country, 696.
M—Mortar, 293; Marking Name on Steel Tools, 491; Mosquitoes, 553.
P—President Roosevelt on Country Life, 179; Planting Alfalfa on Salty Land, 191; Possibilities of Arizona, 203; Plant Breeding on Farm, 292; Plowing Methods, 307; Pocket Gophers, 448; Plant Improvement, 635; Peat as Fuel, 649; Poisoning Squirrels, 649; Paint Pointers, 661.
R—Rat Problem, 696.
S—Sowing Alfalfa, 45; Smut Explosions, 343; Springs in California, 481; State Fair, 595.
T—The Merry Country Merchant, 595.
U—Unburnt Lime, 44; Value of Fertilizer, 165.
W—Worth of Fertilizers, 45; Weed Control by Chemical Sprays, 585; Who Owns the Trees, 649.

HOUSEHOLD HINTS.

A—About the House, 77, 109, 141, 173, 205, 236, 268, 299, 332, 363, 396, 428, 491, 556, 604, 629, 653, 700; About the Air, 171, 460.
B—Bread Sticks, 53; Beds and Bedding, 172; Boiled Dinner, 269; Butchering Recipes 333.
C—Coffee Cake Without Eggs, 53; Citron, To Preserve, 236; 332; Creamed Chicken, 524; Celery Stewed, 524; Celery Stuffing, 524; Celery Sauce, 524; Coal Oil Stains, 525.
D—Dutch Apple Cake, 333.
H—Hay Cooker Recipes, 268; Home Made Cheese, 701.
I—Ironing Day Hints, 365.
L—Lye Hominy, 333.
R—Rugs, Home Made, 21; Roast Chicken, 141; Raisin Recipes, 492; Refrigerators, 677.
S—Sanitary Home, 236; Salt, Value of, 525.
T—Towels and Soap, 700.
W—Weaving, 269.

LEGAL QUERIES.

C—Chattel Mortgage, 410.
D—Damage from Storm Water, 328; Ditch Nuisance, 457; Diverting Storm Water, 520; Drainage District, 550; Division of Property, 651.
E—Executor Selling Property, 410; Excess Land, 410; Establishing Corner Stakes, 520.
H—Hay Balers' Accounts, 627.
I—Irrigating Litch Right, 550.
L—Law of Inheritanc, 520.
M—Married Woman's Rights, 200.
P—Planting Near Line, 520; Poisoning Chickens, 627.
R—Right of Way, 200, 550; Right of Way for Water, 328; Right of Way for Ditch, 410; Railroad Right of Way, 410.
S—Storm Water Damage, 550.
T—Trees Near Line, 328; Telephone Poles, 410; Trespassing Cattle, 651.
W—Waste Water, 410.

PESTS AND DISEASES.

C—Cut Worms, 248.
K—Kerosene Emulsion, 405.
M—Mealy Bug on Citrus Fruits, 243.
R—Red Scale, History and Control, 499.
S—Spraying for Scale, 150.
T—Thrips Problem, 8.

POULTRY.

A—Acorns for Hens, 70; Artificial Incubation, 71; Alfalfa Feeding, 226; A Few Words, 544; Are Poultry Diseases Increasing? 671.
B—Brooders, 40, 291; Belgian Hares, 42; Bantam Show, 103; Brown Eggs or White, 197; Be careful, 291; Breaking Up the Setter, 321; Brooders and Houses, 354; Balanced Ration, 513; Black scale, 533; Beginner's Troubles, 576.
C—Chicken Experience, 40; Canker, 42; Colds, 42; Cornish Fowl, 162; Chicken Kettles, 194; Chat, 321; Chicken Care, 322; Control of Sex, 354; Charcoal for Fowls, 355; Chicken Chat, 384; California Cardinals, 451; Caponizing, 486; Canary Birds, 695; Cheap Poultry Houses, 718.
D—Dressing Market Fowls, 71; Don't Feed Too Early, 486; Diarrhoea, 545; Detrimental Changes in Eggs, 574.
E—Eggs Without Shells, 259, 670; Egg Production of Daughters of 200 Egg Hens, 719.
F—Feed For laying Hens, 195; Feed for Chickens, 322; Feeding Facts, 385; Feeding Milk, 485; Fertile Eggs, To Secure, 546; Feed For Young Turks, 599; Fattening Poultry, 670. Fighting Red Mites, 694.
G—Goose Requires Green Feed, 70; Grit, 257; Geese Dying, 416; Guinea Raising, 453; Green Bone, 484; Gapes, 718.
H—Hatching Turks, 197; Housing Problem, 418; How To Use Hen Manure, 545; How To Fail With Poultry, 600.
I—Incubator, The First, 160; Incubation Chat, 256; Incubator Hints, 291; Infertility, 454; Incubator Directions, 484; Incubation of Chicks, 485; Incubator Eggs, 546.
K—Keeping Eggs For Hatching, 546.
L—Line Breeding Vs. Inbreeding, 70; L. A. Co. Show, 98; Liver Enlarged, 451; Leverets, 512; Limber Neck, 513; Losing Feathers, 599; Location, 646.
M—Millet Seed For Chicks, 226; Mature Pullet, 227; Method in Poultry Raising, 288, 352; Mineral Matter For Hens, 512; Mites, 622; Matting, 622; Meats For Fowls, 647.
O—Organize, 194.
P—Pigeon Pointers, 15; Pigeons, 16; Pullets for Breeding, 42; Pigeons, 42; Pigeon Breeding, 72; Picking Chicks' Feet, 103; Preserving Eggs, 194, 386, 695; Points About Pigeons, 226; Poultry Talks, 228; Poultry As Scavengers, 256; Prices For Pure Bred Poultry, 258; Poultry Raising, 320; Poultry Notes, 387; Potatoes for Fowls, 388; Pendulous Crop, 452; Poultry Raising From A Woman's Standpoint, 483; Plucking Chickens, 545; Poultry Industry of California, 596; Peacock Hatching, 622; Preserving Eggs, 718.
R—Roup, 96,229, 574, 598; Roup and Pip, 103; Rheumatism, 256; Roosts, 322; Roup Prevention, 484; Roup Treatment, 513.
S—Southern California Show, 14; San Diego Show, 99; Squab Raising, 129; Starting Right, 227; Succulent Feed, 229; Selecting Laying Stock, 258; Setting The Hens, 290; Swell Head, 354; Sex of Geese, 385; Scaly Leg, 387, 647; Skim Milk For Hens, 388; Sermon On Lice, 416; Sex Of Eggs, 484; Soft Shelled Eggs, 486; Some Mistakes in Feeding Chicks, 694.
T—Turkey Experience, 131; Turkeys, Ducks and Geese, 196; Turkey Fattening, 228; Turkey Eggs, 354; Table Poultry, 355; Trap Nests, 356, 419; Turkey Eggs in Incubators, 452; Turkey Culture, 646.
V—Value of Mashes, 229; Value of Feeds, 695.
W—White Orpingtons, 42; Walter Hogan System, 128; Water Fountain, 227; Whitewash for Poultry Houses, 385; Water Glass, 417; Water Fowl Profits, 454; White Guinea Eggs, 600.
Y—Yellow Legs, 290.

QUERIES.

A—Almond Growing, 50; Advertise, 106; Abortion, 106, 520; Asparagus Culture, 167; Alkali, 168, 326; Apple Troubles, 201; Agricultural School, 233; Almonds, 235; Alfalfa Seed, 265; Alfalfa In The Orchard, 358; Australian Onions, 422; Alfalfa, 455; American Grapes, 518; Aphis, 551, 577; An acre, 601; Avocado Leaves, 601; Ants 620; Asparagus, 650.
B—Budding Cloth, 19, 137; Bacteria In Milk, 73; Brine For Olives, 74; Bean Harvesting Implements, 74; Beans, 139; Black scale, 199; Beet Pulp, 232; Bitter Milk, 233, 296; Blight, 235; Butte Valley, 327; Beer Seed, 422, 551; Beans In Boxes, 455; Barren Strawberries, 518; Beets For Cows, 519; Beans On Alkali, 551; Burning Charcoal, 601; Book On Ensilage, 698; Breeding, 698; Black Bugs; Bordeaux Mixture, 721.
C—Caps For Alfalfa, 49; China Hogs, 50; Cornichon On St. George Root, 73; Codling Moth Spray, 105; Concrete Tank, 137; Commercial Fertilizer, 137; Cover Crops, 138; Control of Sex, 151; Cutting Tops After Buddinf, 151; Cannibals, 167; Chickens Died, 168; China Trees, 169; Colure, 200; Cows Eat Wood, 201; Concord Grapes, 201; Contracted Hoof, 264; Catalpas From Seed, 296; Canaries Fating Eggs, 297, 390; Cabbage Aphis, 360; Curing Lemons, 455; Citrus In Arizona, 455; Cream Too Ripe, 456; Corn For Silage, 487; Cottony Cushion Scale, 487; Canning Cherries, 518; Cut Worms, 551; Cheese From Two Cows, 602; Canning Outfit, 603; Cherry Plums, 698; Cow Pox, 698; url Leaf, 698; Cover Crops, 698; Castor Oil For Dogs, 699; Carbon Bisulphide, 721.
D—Ditch Manuring, 18; Dog Wash, 73; Deciduous Gum Disease, 138; Dust Spray, 235; Drying Figs, 265; Durum Wheat, 455; Diseased Apricot Leaves, 603; Dairy Questions, 698.
E—Egyptian Corn In Silo, 75; Egg Preservative, 107; Eucalyptus In Poor Condition, 265; Eucalyptus, 422.
F—Fig Cuttings, 18, 168, 264; Farcy Remedy, 107; "Flats" and Whitewash, 151; Feed For Cows, 199; Foxtail For Silo, 201; Fertilizer For Potatoes, 201; Frostless Belt, 234; Fox Terrier, 264; Fodder, 296; Flat Head Borers, 297; Fillaree, 297; Fungus On Lemon, 327; Fertilizer Spoiling, 423; Forcing Cows To Dry Up, 423; Fertilizer For Garlic, 489; Fungus, 489; Feeding Calf, 520; Fertilizer For Beans, 551; Fly Repellants, 577, 603; Fungus Blight On Scyamore, 601; Fertilizing, 601; Fly Paper For Worms, 627; Fails To Breed, 674; Foul Brood, 699; Fall Potatoes, 720.
G—Guavas, 49, 675; Garget, 73, 423; Grape Irrigation, 73; Grafting Vineyard, 106; Government Land,

168, 456; Guinea Fowls, 168; Gypsum, 168; Grafting Vines, 200; Gum Disease, 201; Galled Shoulders, 265; Grape Fruit Stock, 265, 455; Green Forage, 296; Geological Survey, 358; Gridle Orange Trees, 423; Grapes Not Bearing, 423; Ground Squirrel Pest, 518; Grafting Grape Vines, 518; Grapes for Imperial, 519; Green Manure, 551; Garlic, 577, 675; Government Land In Colorado, 601; Green Aphis, 627; Garden Bed, 650; Government Whitewash, 650.

H—Half Breeds, 167; Hot Beds, 167; Hollow Tail, 297; Hillside Grass, 422; Goes to Seed, 720.

I—Insect Eating Leaf, 18; Imperial Oranges, 49; Irrigation From Flowing Well, 139; Identification of Vine, 297; Imperial Valley, 358; Inflamed Udder, 390; Irrigation 390; Iris, 455, 456.

J—Japanese Iris, 390.

K—Kaffir Corn, 456; Killing Blackberries, 698; Keeping Bulbs, 720.

L—Lime Application, 19; Lemon Seedlings, 168; Leaky Flume, 168; Lentils, 169; Large Potatoes for Seed, 232; Live Oaks, 233; Live Oak Lumber, 234; Leaks Milk, 326; Leaking Milk, 390; Lameness, 487; Lady Birds, 650.

M—Measuring Water, 74, 455; Mildew, 74; Muddy Corral, 233; Milch Goats, 326; Millet, 326; Melon Seed, 359; Mangel Wurzels For Hogs, 489; Motor Velocipeds, 550; Mildewed Peas, 602; Mildewed Vines, 603; Milking, 698; More Bugs, 699.

N—Naming Apple, 232; Nitrate of Soda, 232; No Weedy Ditches, 296 Needs Mother, 487; Not A Milk Strain, 518.

O—Orange Tree In Poor Condition, 49; Olive Pruning, 50; Olive Oil Soap, 74; Oregon Questions, 104; Orchard Care, 150; Orange Seed, 167; Olive Grafting, 233; Olive Cuttings, 264; Oleander Scale, 264; Over Feeding, 327; Orange Seed Bed, 327; Oil Stain, 601; Onions From Seeds or Sets, 602; Oiling Reservoir, 698.

P—Pruning, 18; Phosphoric Acid for Citrus Trees, 18; Pecans, 49; Pruning Malagas, 73; Pumpkins and Citrons, 75; Pears Immune to Blight, 106; Paint For Flume, 107; Plums On Apricots, 139; Plums, 201; Plowing Under Green Manure, 232; Pearl Guineas, 232; Poisoned Wheat, 297; Protecting Apricots From Frost, 360; Pruning Eucalypts, 360; Peanuts, 423; Possibly Cow Pox, 423; Poisoning Squirrels, 489; Palo Verde, 490; Peach Leaf Curl, 519, 675; Perris, 551; Powdery Mildew, 602; Planting Loquats, 699; Peanuts, 721.

R—Redeeming Old Vines, 74; Residue From Acetylene Gas, 105; Rhubarb, 137; Raspberry Pruning, 137; Root Knot, 233; Roselle Jelly, 360; Ruptured Blood Vessel, 455; Red Spider, 551 Renting Land On Shares, 552; Red Ants, 577.

S—Storage of Sweet Potatoes, 18; Seedling Lemons, 18; Scale, 49; Seedling Walnuts, 50; Sick Pigs, 104; Seedling Eucalypts, 139; Scab On Potatoes, 139; San Jose Scale, 150; Sun Flower Seed, 169; Sweet Pea Seed, 169; Spineless Cactus, 199; Scale On Berry Bushes, 199; Suckering Date Palms, 200; Silos, 327; Seeding Alfalfa, 235; Small Supply Of Milk, 264; Spraying For Fungus, 358; Sour Orange Seed, 423; Summer Manure Crop, 423; Sorghum For Poultry, 423; Silver Skins, 457; Silos, 487; Scab, 489; Swine Questions, 552; Sulphuring Grapes, 552; Summer Pruning, 577; Sulphuring Grapes, 602; Silage Troubles, 626; Spraying Formulae, 626, 627; Summer Fallow, 626; Soiling Crops, 674; Sore On Udder, 674; Summer Pruning Of Apricots, 699; Summer Pruning, 721; Size Of Fruit Boxes, 721.

T—Thornless Cactus, 49; Tomatoes Injured, 50; Transplanting Willows, 51; Tomatoes, 105; Tiling To Remove Alkali, 168; Transplanting Orange Trees, 169; Three-Horse Evener, 169; Tuberculosis, 297, 327; Turkestan, 518; Time To Plant, 601. estan, 518; Time To Plant, 601;

V—Value Of Old Bones, 151; Value Of Hen Manure, 232; Vinegar From Grape Juice, 264; Violets and Roses, 422; Various Questions, 721.

W—Water Required, 106; Wind Pudding, 106; Walnuts in Napa Valley, 139; Weed Killers, 232; Walnuts for Planting, 234; White China Geese, 265; White Beans, 359; Walnut Dye-back, 359; World's Record, 487; Whitewash for Borers, 489; White Scale, 518; Worms Climb Trees, 578; Wax For Wounds, 601; Wooly Aphis, 626; Wilow Baskets, 650; White Guineas, 675; Willow Baskets, 720.

STOCK AND DAIRY.

A—American National Live Stock Association, 34; American Live Stock Breeders Association, 65, 83, 122; Alfalfa, 123, 251; Alfalfa and other Silage, 155; Azoturia In Horses, 156; Ayrshire Breeder's Association, 221; Anthrax In Cattle, 411; Alfalfa Hay For Brood Sows, 477.

B—Bacon, To Prouce, 66; Berkshire the Best, 477; Butter From One Cow, 664; Baby Pigs on Bottle, 712; Butter Scoring Contest, 713.

C—Cows, 10; Calves Raised On Skim Milk, 11; Contaigous Abortion In Cows, 157; Comparative Value of Beef Breeds, 157; Careful Milking, 252; Cold Cement Floors, 349; Co-operating Milk Producers, 413; Contagious Abortion, 569.

D—Dairymen Should Keep Books, 186; Danish Co-operative Creamery, 221; Demonstration Train, 315; Damp Stables, 594.

E—Educational Butter Scoring Contest, 540.

F—Foot and Mouth Disease, 36, 252, 664; Feeding Sugar Beet Pulp, 348; Fly Repellant, 689.

G—Great Guernsey Record, 125; Greatest Jersey, 156; Grubby Cattle, 380; Garget, 507; Galled Shoulders, 509; Garget, Severe Cases, 539.

H—Hogs Free From Worms, 65; Hog Cholera Vaccine, 93; Hog Killing, 186; Hog Cholera, 220; Horse Remedies, 284; Management, 317; Hog of Today, 508; Humboldt Co., 508; Hard Milkers, 571; Heifers, 616.

I—Individual, Man and Cow, 35; Increased Grazing Allotments, 412.

K—Kale For Swine, 445; Kale For Cows 594.

L—Lime In Alfalfa Culture, 187.

M—Milk Drinking, 156; Milk, 185; Milking Machines, 689.

O—Outside, 593; One Cow, 688.

P-Q—Popular Errors, 66; Pork Packing, 124; Pigs, 347; Pumpkins For Cows, 412; Questions, 443, 475; Preventing Abortion, 541.

R—Ranch Doings, 91; Resting The Cow, 187; Ridding Sows of Worms, 541.

S—Separator, 66; Stoppage of Bowels in Cattle, 253; Swine, 283; Sorghum For Silage, 284; Sound and Well Formed, 349; Silage For Pigs, 379; Stoppage of Teat, 388; Starters, 444; Swine In America, 476; Sugar Beet Feeding Value, 475; Score Card System of Dairy Inspection, 540; Shoats On Short Feed, 541; Spring Cleaning, 640; Stable, 641.

T—Teaching Calf To Drink, 477; Turkestan Alfalfa, 509; Teaching A Farm Dogs; 594; Texas Fever Tick, 712.

W—World's Record Cow, 509.

VETERINARY.

A—Abscess, 107, 723.

B—Broken Bone, 675

C—Capped Hock, 360.

D—Distemper In Dog, 202; Discharge, 391; Diseased Eyes, 675; Dry Hoofs, 723.

F—Farcy, 51; Fistula, 723; Fits, 723.

G—Growth Over Eye, 603.

H—Heifer Shy of Milk, 391; Heaves, 490; Hoofs Breaking, 723.

I—Itching, 723.

L—Looseness, 107; Lameness, 490.

M—Mallein, 107; More Exercise, 675.

S—Shepherd Dog, 51; Sores From Needle Grass, 202; Swelling On Ankle, 391; Sore Shoulders, 391; Scours, 552; Sores On Mule, 603; Sore Eye, 651; Sweeney, 651; Spavins, 651; Swelling Of Throat, 651.

V—Vertigo, 202.

W—Worms, 651.

CALIFORNIA'S NAVIGABLE RIVERS.

"The Sacramento, San Joaquin and Feather Rivers are the chief waterways of California, the navigable portions of the two former being largely limited to the tidal estuary channels. Low-water stages, therefore, do not seriously affect them, but their value for navigation has been menaced by silting. In addition, meandering of the streams has in cases taken place, threatening the destruction of riparian property as well as interfering with navigation.

"Three navigable streams heading in the western slope of the Sierra Nevadas have 492 miles of navigable water, or an average of 164 miles for each river. These streams differ from those of the southeasterly and eastern slope of the Rocky Mountains in possessing navigable estuary channels, while the precipitation on their basins is largely during the winter months, when it is often concentrated in heavy showers. The streams are subject to violent early spring freshets, originating in the heavy rains in the mountains, while their high silt burden has damaged the navigable estuary channels. The greater portion of the silt of these streams was formerly the product of hydraulic mining, but the necessary means have been taken to control this through settling beds. In spite of this the Sacramento River yet bears annually more than 2,250,000 tons of solid burden. Much of this is acquired in the foothills and plains, though much erosion takes place from forest land on account of the insufficient humus. Corrosion is active on the Tuolumne, Stanislaus, and other streams of the Sierras which debouch into the Sacramento or San Joaquin Rivers. This corrosive action is more or less constant, being a characteristic of streams coursing through unconsolidated soils or those deficient in cohesion, as are many of those of the California basin. This action might be lessened on the smallest tributaries by protective planting.—From Inland Waterways Report.

A strong effort was made to boost potato prices in the Seattle market and $50 per ton was reached which later dropped to $45 and then $40 which is the present price.

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FOR SALE—25,000 YELLOW SWEET potato plants, $1.00 per thousand f.o.b. El Monte, Cal. A. E. NELSON.

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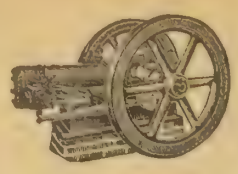

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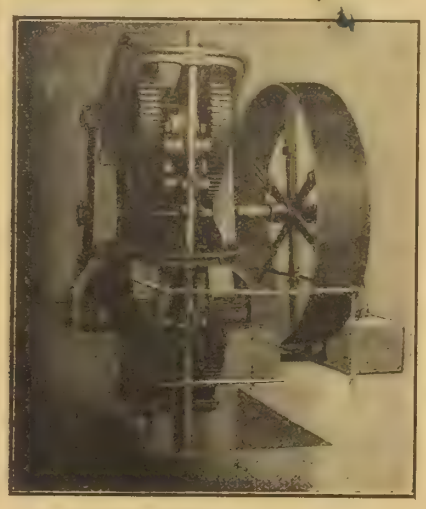

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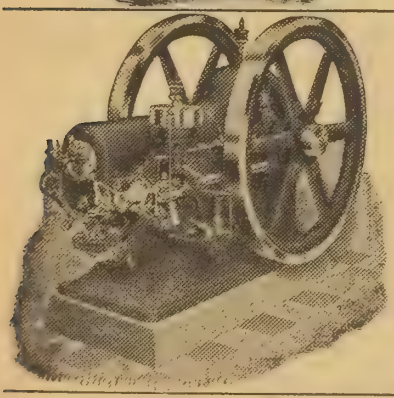

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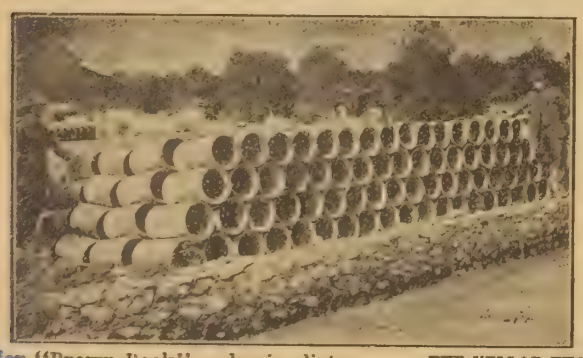

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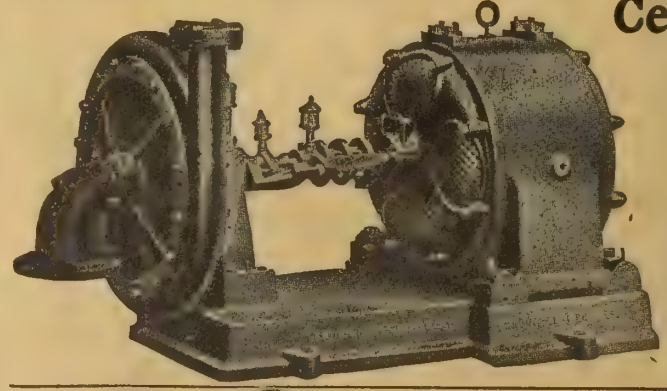

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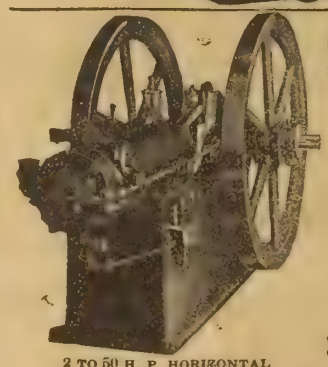

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